

Beylefeld, A.A., Joubert, G., Jama, M.P. & de Klerk, B.  
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presentations.

# South African Journal of Higher Education

Vol 17 No 2 2003

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# Lecturers, students and community members sharing the responsibility of assessing project-based poster presentations

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## ABSTRACT

Active participation in the process of learning rather than transmission of information is prominent in modern higher education contexts. In alignment with this trend, traditional modes of assessment based on the "transmission model" are increasingly replaced or supplemented by more authentic forms of assessment. Authentic assessment measures the application of knowledge and skills in real-world contexts and ideally involves learners in the assessment process. The purpose of this article is to report on lecturers, students and community members sharing the responsibility of assessing a project-based poster presentation. A combination of quantitative and qualitative methods was used in capturing data. Analysis and interpretation of data were performed with the immediate goal of gaining a better understanding of the assessment exercise, and to improve existing practice. The investigation revealed the challenges and pitfalls of involving first-year students and representatives of the community in assessment. Comparison of student-derived marks and those given by a panel of academic staff served to evaluate students' readiness to take responsibility for co-assessment. The students' views on the relevance of the exercise revealed that exposing students to situations which require them to respond objectively to peers' work, conveys the message that skills matter, and thus contributes to the development thereof.

## INTRODUCTION

Assessment is currently a key area of interest and debate in higher education. There is a wealth of evidence in the literature suggesting that assessment is central to the effectiveness of any educational programme, because it influences students' conceptions of, and approaches to learning (Siebörger & Macintosh 1998; Brown & Knight 1994; Biggs 1993; Boud 1990; Ramsden 1988; Rowntree 1987).

Over the years, assessment has mostly been reduced to tests and examinations aimed at determining how well students are able to recall factual knowledge. The results of such tests, as Perronne (1997:305) suggests, are "mostly second-hand versions of students' modes of thinking and meaning making".

In contemporary times, assessment is no longer expected to be only summative and judgemental; neither is it expected to encourage rote learning. The modern trend is to empower students to become autonomous through assessment practice (Brown, Bull & Pendlebury 1997; Brown & Knight 1994). Such an assessment goal implies that learning outcomes should embrace not only subject knowledge, but also the ability to apply knowledge, to think critically, to invent solutions to real and challenging problems and to respond sensitively to the needs of the community. In order to achieve such desired outcomes, existing modes of assessment that reflect the "transmission model" of teaching are increasingly replaced, or at least supplemented, by authentic assessment. Authentic assessment requires students to engage in activities that they would have to perform in a real-world context through applying content knowledge and demonstrating a number of skills such as leadership, teamwork, prioritizing tasks,

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encouragement of others, problem solving and time management (Nightingale *et al* 1996).

Another important goal of authentic assessment is to help students take ownership of their learning. One way of achieving this goal is to involve them as informed participants in assessment through the use of self- and peer assessment. These modes of assessment, state Kwan and Leung (in Orsmond, Merry & Reiling 1997:358), "help students develop as 'reflective practitioners', which is a now widely recognised goal of professional higher education". This view also resonates in the work of Boud (1989), who maintains that if the intention is to adopt student-centred approaches to teaching and learning in order to develop greater autonomy in learning, then alternative forms of assessment such as self- and peer assessment should be encouraged.

## GOAL

This article describes how an authentic assessment exercise, aimed at supporting learning and promoting students' personal responsibility, was designed, implemented and evaluated. The focus is on how students participated in the assessment task, and how the assessment of poster presentations was anchored in the actual participation of community health workers and secondary school pupils.

The study aimed at determining the following:

- How accurate students are at assessing their peers' work.
- How the community health workers and pupils experienced the poster presentations.
- What students' views are on the assessment of their poster presentations.

## METHOD

### Design

The School of Medicine (Faculty of Health Sciences) promotes student contact with patients and the community. Significant community involvement therefore, forms an essential component in Phase I (first year) of the new MB ChB programme for professional medicine. Module MED113 (concepts of health and disease) includes the protection and promotion of health, prevention of disease and the prolonging of life through organised efforts of society. Students should acquire skills to educate individuals and community groups on the principles and processes of disease prevention and health promotion. As suggested by Nightingale *et al.* (1996), the framework given in Table 1 was devised by the module development team in collaboration with the School of Medicine's community-based education

coordinator, to enable students to acquire the following transferable skills: the ability to solve problems against the background of social, political and economic realities, to communicate and interact with community members and organisations, and to function effectively within an assigned group.

The project included a needs analysis workshop at COMMTECH High School and field trips to community organisations to establish the kind of health related services available in the community of Mangaung. The poster project presented an opportunity for developing an authentic assessment process for measuring the outcome of a complex learning setting, not only by subject experts, but also by the community and the students themselves.

All 134 first-year students worked in their assigned groups of 7 to 9 students per group. They had an 8-week period to carry out the investigation and produce their posters and brochures. Apart from a lecture on health promotion, students had a preparatory lecture on the principles of poster communication, which included examples of good and bad posters. Thus, it was ensured that students had clear knowledge on how to approach the poster assignment. The project culminated in an exhibition where students presented their posters. In planning the exhibition, the module development team used ideas raised by Sizer (in Tal, Dori & Lazarowitz 2000), who claims that educational exhibitions "serve as avenues for meaningful learning and demonstrate various student skills in the cognitive, affective and communicative domains". A brief article was published in various local newspapers, inviting the public to attend the exhibition. Faculty members were informed of the event by means of a system-wide electronic message.

### Assessment

The coordinator of community-based education and leaders of modules MED113 and MEA112 (general skills) cooperated in formulating the following outcome for the poster project, to be assessed by a panel of academic staff, the students themselves, and community representatives:

- By the end of this project, learners should be able to demonstrate (a) understanding of the public health aspects of the topic they investigated, and (b) poster/brochure presentation skills appropriate to the context in which they have been working.

Consistent with the view that ownership of marking criteria is important when using peer assessment (Orsmond, Merry & Reiling 1996; Stefani 1994), students were involved in negotiating appropriate assessment criteria. Two days prior to the exhibition, a brainstorming session was held to generate a list of possible criteria. Students were asked to select the

*Table 1*  
*Project-based poster presentation framework*

Key questions	Intended outcomes/planned actions
What skills do we want to see in our students at the end of this module?	<ul style="list-style-type: none"> <li>● Critical thinking</li> <li>● Problem solving</li> <li>● Communication</li> <li>● Interaction</li> <li>● Group functioning</li> </ul>
What teaching methods are most appropriate to develop these skills?	<ul style="list-style-type: none"> <li>● Preparatory lecture on health promotion and education</li> <li>● Preparatory lecture on principles of communication by means of posters</li> <li>● Clinical learning opportunities in schools, health-care agencies and organizations</li> </ul>
What kind of tasks will allow learners to demonstrate these skills?	<ul style="list-style-type: none"> <li>● Community-based workshop to do a needs analysis at COMM-TECH High School and several health-care organisations</li> <li>● Project assignment requiring students to communicate the information they have gathered in the form of poster and/or brochure presentations</li> </ul>
What kind of authentic assessment situation can be created to make these tasks look like real tasks of the community health promotion?	<ul style="list-style-type: none"> <li>● Organise a health expo in the Faculty, open to the public</li> <li>● Invite representatives of community organisations and schools to whom students were exposed in the execution of their projects, to view the formal presentations and participate in the assessment thereof</li> </ul>
What standard of performance should be required?	<ul style="list-style-type: none"> <li>● Negotiate assessment criteria with students</li> <li>● Compile an assessment instrument indicating assessment criteria and required levels of performance</li> </ul>

criteria they wished to use and to assign a weighting to each criterion. Interestingly enough, the final list of criteria that the students agreed on, was almost identical to the list that the module leaders had compiled in preparation for the negotiating session. A few modifications were made, whereupon students and staff were briefed on how to use a standard assessment sheet containing the agreed criteria and weightings (Table 2), on the day of the exhibition. Assessment by academic staff and the students included negotiated criteria and standards of performance as summarized in Table 2.

A second assessment instrument, for use by the community representatives, was based on "yes" or "no" answers to the following questions:

- Does the poster/brochure/display communicate a strong message to you?
- Would you like this poster/brochure/display to be exhibited at your school/institution?
- Do you think that your fellow pupils/the community will understand the message of this poster/brochure/display?

In addition to these questions, respondents were given an opportunity to explain why they liked or disliked a particular presentation.

To determine which groups had produced the winning posters, marks allocated by academic staff were calculated on the spot, using the mean percentage mark given by each member of the panel.

#### **Analysis and feedback**

Premised on the epistemological decision to take a holistic view of the outcome of the poster project, both measurable data and subjective experiences were recorded. Validity and reliability of the results were enhanced by means of in-method triangulation.

Assessment results produced by the panel of academic staff and the students were analysed statistically. These results, as well as a summary of responses received from the community, were displayed graphically for purposes of formative feedback to students. The criteria negotiated with the students guided the feedback discussion and students had the opportunity to ask for information as to why a certain aspect of their presentations had been received negatively by the community. A discussion on the pros and cons of sharing responsibility for assessment followed, whereupon students were asked to complete a half-page response form, evaluating their experience of the assessment component of the MED113 project.

*Table 2*  
*Negotiated criteria, required standards of performance and weightings*

Criteria	Standard of performance/evidence of fulfilling criteria	Weight
Central focus	<ul style="list-style-type: none"> <li>There should be one central message which can be instantly recognised</li> </ul>	20
Level of comprehension with regard to the target audience	<ul style="list-style-type: none"> <li>The intended audience should be able to easily understand the language</li> <li>The images that are used should keep their interest and inspire action</li> </ul>	20
Creativity and originality	<ul style="list-style-type: none"> <li>The group should have managed to summarise complex material into an easily assimilable form</li> </ul>	20
Academic content	<ul style="list-style-type: none"> <li>The academic content should be useful and correct</li> </ul>	15
Visual impact	<ul style="list-style-type: none"> <li>The product should be attractive, striking, self-explanatory and neat</li> </ul>	15
Technical finishing and style	<ul style="list-style-type: none"> <li>The language should be grammatically correct</li> <li>Images should be organised in a logical sequence</li> </ul>	10

Finally, the marks given by the student groups, carrying a weight of 33 per cent, were incorporated into the marks generated by the panel of academic staff to yield a combined summative mark for the project.

The qualitative method used in analyzing verbal student and community member responses had the features which Miller and Parlett (in Zuber-Skerritt 1992) require of a holistic, illuminative approach. This means that the focus of the analysis was on interpreting and understanding the feedback with a view to make recommendations for improvement, rather than on proving or predicting future outcomes of similar projects.

## RESULTS

### How accurate are students at assessing their peers' work?

The marks allocated by staff were extremely high. The lowest staff mark was 71 per cent. Nine out of the seventeen (52.9%) posters that were presented received a mark ranging from 80 per cent to 88 per cent. However, it may be concluded that staff members were favourably inclined to the assessment exercise to the point of impaired objectivity. Calculation of mean marks given by students and those given by the panel of academic staff, revealed a discrepancy (Table 3). When the students' mean mark of 65.8 per cent was benchmarked against the staff's mean mark

of 79.5 per cent, it was clear that students "undervalued" their peers' work by a mean of 13.7 per cent, ranging from 4 per cent to 22 per cent.

As concluded by educational researchers such as Orsmond, Merry & Reiling (1996), a discrepancy in marks might be blamed on students' limited experience of assessment. Open responses such as the following validated this perception:

Explosive experience for those from disadvantaged schools as it was the first time we were involved in an expo.

Difficult because of misunderstanding between group members in terms of criteria used for the allocation of marks.

Students could have got lower marks because for one group "excellent" meant 90 per cent, and for another group it meant 80 per cent.

Further analysis to establish whether the marks given by staff and students displayed a similar tendency, revealed a moderate correlation (Spearman rank correlation 0.50), indicating that students appeared to be inaccurate at assessing what their peers' work is worth.

### What are students' views on the assessment of their poster presentations?

Analysis of students' qualitative feedback provided a

*Table 3*  
*Posters: Marks allocated by staff and students for the 17 groups*

Variable	n	Mean	Std Dev	Minimum	Maximum
Students	17	65.8	4.0	59	73
Staff	17	79.5	5.7	71	88

more complete understanding of students' experience of the assessment task.

All of the students who participated in the poster project were present when the evaluation was done. In total there were 121 half-sheets, representing a response rate of 90 per cent.

Positive and negative responses were balanced. In total, 117 positive and 114 negative statements were collated from the half-page responses. Examples of responses in favour of, and against the assessment process are summarised in Table 4.

Eight responses referred to the difficulty students had with assessing their peers, due to lack of experience. Seven responses reflected an unease because the "experts" (academic staff) shared the responsibility of assessment with students. An additional 27 responses suggested that the assessment was unfair. Reasons why the students felt this way, included:

- The reluctance of some health centres to provide relevant information.
- The financial head start of groups who could afford to spend more than the R100,00 each group was entitled to.

- Variation in topics – some were information rich; others were limited in scope and resources.
- Lack of differentiation in criteria used to assess exhibition material that belonged to different categories.
- Negotiation of assessment criteria at a late stage.
- Lack of clarity about what was expected.
- The use of sweets and other gimmicks to gain support.
- The racial composition of community representatives who acted as co-assessors.
- Misunderstanding among group members in terms of criteria used for the allocation of marks.
- Collusion and inter-group retribution.

From these comments, it became clear that in future, more time and energy should be spent on establishing criteria that fulfil the requirement of fitness for purpose and preparing students to be objective in their judgement of peers' work. Consistent with the observations of an authoritative researcher such as Stefani (1998; cf also Brown, Bull & Pendlebury 1997), clear and unambiguous instructions on expected levels of performance and procedures for the allocation of marks were highlighted as prerequisites for effective peer assessment.

*Table 4*  
*Students' response to the assessment of project-based poster presentations*

Category of response	Example of students' comment
High-level support	<ul style="list-style-type: none"> <li>• Criteria used were the best thing ever – they embraced the whole presentation and made it easy to evaluate.</li> <li>• Gained added responsibility by assessing my fellow students.</li> <li>• Wonderful – but difficult.</li> <li>• Assessment was as fair as possible.</li> <li>• I find the assessment by medical students very valuable.</li> </ul>
Low-level support	<ul style="list-style-type: none"> <li>• Got to know fellow-students.</li> <li>• Taught us to mark critically.</li> <li>• Lecturers' assessment was fair.</li> <li>• It was fair that students' assessment counted only a third.</li> <li>• It was realistic.</li> <li>• Assessment made me feel that I had a share in the marks of other groups.</li> </ul>
High-level opposition	<ul style="list-style-type: none"> <li>• Peers' assessment was subjective.</li> <li>• Money played an important role and affected those without it negatively.</li> <li>• Shocking to see that staff gave such high marks to groups.</li> <li>• Wasted time by discussing issues with health care workers and scholars.</li> <li>• It was a waste of time – we could have studied rather.</li> </ul>
Low-level opposition	<ul style="list-style-type: none"> <li>• Didn't have the acquired skills to assess ourselves.</li> <li>• Students should not assess their peers in group context – it increases competition.</li> <li>• Students are hyper critical – do not know what to look for.</li> <li>• Process was tedious and unorganised.</li> </ul>

### How did the community health workers and pupils experience the poster presentations?

The frequency distribution of responses given by the group of community health workers ( $n = 30$ ) and the COMMTECH pupils ( $n=30$ ) was calculated to determine how well the posters were received. Not all participants evaluated all posters. The smallest number of respondents evaluating any given poster was 23.

For all three structured questions the means of the percentages of positive responses were high for both respondent groups (Table 5).

A correlational analysis of feedback, provided by community health workers and pupils across the three questions, revealed strong consistency (0.83 to 0.95) in the case of the pupils, and a moderate to strong correlation (0.73 to 0.81) among answers provided by the health workers. The strong correlation of pupils' responses was interpreted as an indication of an inability to differentiate among the nuances of the different questions. Consistent with this finding, the weak to moderate correlation between the health workers' and the pupils' answers to the three question (Table 6) raised the question whether it was desirable, in terms of cost, to involve school children as co-assessors, especially since their feedback was used formatively only.

The positive attitude of pupils and community health workers towards the exhibition, as expressed in quantitative terms, was validated by their open-ended responses. Clarity and understanding were recurrent themes in the community health workers' comments. These concepts were mentioned 31 times. The pupils' response consisted, for the most part, of comment on the social issues that the posters addressed, rather than on the poster presentation thereof. Even so, among many inappropriate answers to the question why they liked or disliked the poster (eg "Smoke can harm those around you" or "Drugs have no place in a healthy society"), the clarity and strength of the message communicated by the posters were mentioned eleven times, including responses such as:

- Pictures send a very sensible message.
- It gives us the message.

### DISCUSSION

Using peers in assessment is gaining ground at all levels of education (Woolhouse 1999; Oldfield & MacAlpine 1995). In this study, the purpose of involving students in an authentic assessment task was to create an in-depth learning experience and also to give them the message that they could be trusted with the responsibility of assessing their peers' work, which is a prerequisite for maintaining profes-

Table 5

Posters: Percentages of positive responses of health workers and pupils to three questions

Questions	Mean and standard deviation ( $n = 17$ )	
	Community health workers	Pupils
Question 1: Does poster communicate a strong message to you?	86.9 (9.1)	85.6 (10.1)
Question 2: Would you like this poster to be exhibited at your school / institution?	87.2 (10.1)	84.9 (10.3)
Question 3: Do you think that the community will understand this poster?	88.2 (10.5)	82.2 (10.4)

Table 6

Correlation between health workers and pupils' feedback on three questions

Questions	$r$
Does the poster communicate a strong message to you?	0.54
Would you like this poster to be exhibited at your school/institution?	0.49
Do you think that the community will understand this poster?	0.39

sional competence in their future working lives as medical practitioners.

Community health workers and COMMTECH pupils contributed to the project by influencing the themes of the posters and by assessing the students' performance. Involvement of the community in this manner also served to prove that "communities have valuable resources which can be mobilized to assist in meeting the educational needs of future generations of health professionals" (Olive, Goodrow & Virgin 1998:151).

In conceptualising the assessment procedures that were followed, cognisance was taken of the controversy related to the reliability of open-ended assessment of a performance task involving many variables (Nightingale *et al* 1996). The researchers sided with the view that quality assurance measures, rather than consistency of measurement, should ensure that the assessment is fair (Brown & Knight 1994). Excluding the fact that students were involved at a rather late stage in negotiating assessment criteria, the authors felt satisfied that the procedure of assessment, as outlined above, contributed to the fairness of the exercise.

Furthermore this study confirmed, as noted by Cowan (in Ormond, Merry & Reiling 1997:358), that the involvement of students in peer assessment poses problems in the form of unsophisticated judgements, as evidenced by the lack of correlation between students' and staff's marks. However, on hindsight, the researchers could not but concur with authors who claim that the advantages of peer assessment outweigh discrepancies in marking; that "it is better to take the risk over the marks than to deprive students of the opportunity to develop the important skill of making objective judgements about the quality of their peers' work" (Kwan & Leung 1996). Such benefit is to be gained, however, on condition that those taking part in the process feel positive about their experiences (Woolhouse 1999). An analysis of qualitative feedback revealed that students derived benefit from the project and that they definitely did not feel disadvantaged by the introduction of peer assessment. Apart from a few really negative responses, the researchers were convinced by the positive comment (see Table 4) that the exercise should be modified, but definitely not abandoned.

A difficulty associated with the assessment of project work, which definitely influenced students' experience of the poster project, is the variation which occurred in the nature of the projects undertaken, the resources available to the different groups and the amount of support provided by the different community organisations. Students complained about this inconsistency, stating that staff should consider "categorising different topics and maybe use different criteria to assess them depending on the type of

message that is meant to be carried into the community".

A further aspect of authentic assessment tasks which is potentially problematic, is the affordability of the exercise (Hart 1994). Cost factors include the time involved in developing, administering, scoring, interpreting and reporting results. In this study, the combined efforts of lecturers teaching in a core learning component (Module MED113), skill specialists responsible for fundamental learning and the coordinator of the community-based component of the MB ChB learning programme resolved all real and perceived problems related to the feasibility of the assessment exercise.

In the final analysis an important benefit, namely the tangible evidence that the community receives of their involvement with the students, became evident in this study (Table 5). In addition, several student participants suggested that the exhibition should be made more community-friendly, that it should be broadened and extended; that the presentation should take place in the community to ensure that the poster messages reach their target groups. In his concluding message at the poster prize-giving, the Dean underscored these proposals, suggesting that the students should, as a next, progressive step, look into the possibility of making their products available for display at the institutions and organisations which contributed towards their projects.

## CONCLUDING REMARKS

Reflection on the performance and experiences of students and community members who partook in this study brought useful insights at a time when the involvement for students and other role-players as active, informed co-assessors is increasingly valued in higher education curricula.

It was concluded, on the one hand, that the suggestions students made with regard to the categorisation of different topics, timely negotiation of assessment criteria, increased weighting of marks given by student groups, anonymous inter-group assessment and broadened exposure of products to the community, deserved serious consideration.

On the other hand the more negative responses received from students served to remind the project team that no assessment strategy will ever be perfect and fully acceptable to all involved. However, as Tariq *et al* (1998:221) observed: "Devising the perfect assessment strategy is an elusive pursuit, but implementing a scheme which contributes to a more student-centred ethos of teaching, learning and assessment is surely a step in the right direction."



**ACKNOWLEDGEMENT**

This article is based upon work supported by the National Research Foundation under Grant number

Gun: 2054008. Any opinion, findings and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Research Foundation.

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