INVESTIGATING ASSESSMENT PRACTICES AS A STARTING POINT FOR CHANGE: THE CASE OF A HEALTH SCIENCES FACULTY

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ABSTRACT

Introduction:
Compliance to national policy has required shifts in teaching, learning and assessment practices in higher education.

Objectives:
To investigate current assessment practices in a faculty of health sciences as an impetus for change and to identify strategies to support lecturers in policy implementation.

Methods:
The study design was a formative, improvement-oriented evaluation. Qualitative and quantitative data gathering methods were used.

Participants:
Nine departments' examination scripts were included in the sample. Six of the nine heads of department participated in a focus group.

Setting:
A faculty of health sciences in the Western Cape.

Intervention:
The questions in 27 final year examination papers were analysed according to National Qualifications Framework Level 8 competency descriptors as criteria. A focus group interview was conducted with heads of departments for their perspectives on challenges and enablers experienced during implementation of the policy.

Results:
Uneven use of newer assessment practices in the faculty was indicated. Identification of challenges and solutions suggest that assessment practice could only change if teaching practice changed.

Conclusion:
Support for professional development and collaborative action research were identified as possible strategies for implementing change in teaching and learning.

Keywords:
Health science education, assessment, student-centred learning
Introduction

South African educators of health science programmes have had to change their approaches to teaching, learning and assessment to comply with national policy directives as set out in the Higher Education Act (Government of South Africa, 1997) and later consolidated in the Higher Education Qualifications Framework (Government of South Africa, 2007). This paper reports the problems and solutions encountered by one faculty of health sciences in the Western Cape when the policy was implemented. By focusing initially on assessment practices, the faculty hoped to identify strategies to support educators in making the conceptual shifts needed to implement the new policy. An audit of current assessment practices was done by analysing the questions posed in all final examination papers of final year undergraduate students. The questions were analysed according to National Qualifications Framework (NQF) level 8 competency descriptors (Government of South Africa, 2005). In addition, heads of departments were interviewed for their perspectives on the implementation of the framework in their respective departments.

Background

Against the background of transformation in higher education and the emergence of a single national register for qualifications, the Council on Higher Education (CHE) sets out guidelines for framing teaching, learning and assessment in higher education that encourages institutions to adopt an outcomes-based approach. The guidelines to institutions, named Improving Teaching and Learning for Success provide a framework for the expected educational change (Council on Higher Education, 2003).

Despite some resistance to the acceptance of a pure form of an outcomes-based approach in higher education, there is acknowledgement that a shift has occurred in the understanding of teaching and learning. The global trend towards student-centred learning is in response to societal changes and demands for new kinds of knowledge (Huba and Jann, 2000). The conceptual framework offered by the Higher Education Quality Committee of the Council on Higher Education (CHE, 2003), provides guidelines to assist lecturers in making such a shift.

However, implementation of the new Higher Education Qualifications Framework (HEQF) policy is not unproblematic. Implementation requires big conceptual shifts from a traditional approach to teaching to the newer understanding in which student learning is emphasised. More than a decade ago, Barr and Tagg (1995) described an emerging shift in higher education as a paradigmatic shift from what they termed an instruction paradigm to a learning paradigm. The instruction paradigm is described as focusing on the provision of instruction, with an emphasis on teaching and covering course content. In this view, summative assessment consisting of traditional tests and exams are the usual means of student assessment (Barr and Tagg, 1995).

At the other end of the continuum, the learning paradigm emphasises the learning process and the production of learning. Barr and Tagg view knowledge production as active construction of personal knowledge through the creation of learning environments in which students engage. Assessment is viewed as a developmental event that drives learning. Opportunities to demonstrate a developing understanding are scheduled frequently as formative assessment opportunities. In formative assessments the variety of methods to demonstrate
learning are much wider than traditional tests or exams. In addition, students are provided with prompt feedback of good quality to further their learning.

One of the main features of the ‘new’ assessments is that assessment tasks are criterion referenced. Thus, assessment criteria provide students with descriptions of required performance that they will need to demonstrate through multiple opportunities and tasks (Barr and Tagg, 1995; Luckett and Sutherland, 2000).

Over the past two decades in South Africa, support for the learning paradigm as an educational approach that frames teaching and learning has resulted in the implementation of student-centred learning approaches in health science education, such as problem-based and case-based learning and the outcomes-based approach. The shift to student-centred learning has had an inevitable influence on assessment practices (Barr and Tagg, 1995; Geyser, 2004; Huba and Jann, 2000; Luckett and Sutherland, 2000). In the past, students were assessed mainly on the content that had been covered in a course. Educators are now required to set assessments where students can demonstrate competencies such as the application of principles and theories, problem solving and clinical reasoning abilities. Duncan and Joubert (2006:202) refer to two assessment traditions, namely, the performance assessment tradition and the competence assessment tradition. The performance assessment tradition implies quantities of declarative and procedural knowledge, whereas the competence tradition views knowledge as 'meaning making,' 'thinking about thinking' and arriving at a reasoned understanding of pathways of critical interpretation. The aim of new assessment practices is to allow students to demonstrate such higher order thinking skills.

In particular, assessment practices have had to change from norm-referenced to criterion-referenced assessments, from traditional tests and examinations to multiple and innovative assessment activities that include more frequent formative assessment opportunities and a variety of assessment tasks (Gravett and Geyser, 2004). Assessment should no longer be viewed as a disparate end-course event. Assessment should drive learning to the extent that students are provided with frequent learning opportunities where they can demonstrate evidence of mastery of competencies (Huba and Jann, 2000). The following Higher Education Quality Committee (HEQC) definition of assessment illustrates both the requirement of criterion-referenced assessment and the need for students to have opportunities to gather evidence of mastery of competencies:

In terms of outcomes-based approaches, assessment is a process during which evidence of performance is gathered and evaluated against agreed criteria. As with the principle of triangulating research methods, so with assessment: one has a better likelihood of ascertaining what students can do if a range of different assessment (research) methods is employed and if the research instruments are fit for their purpose. (CHE: ITL, 2003: 3)

Implicit in this change to new assessment practices is the development of a new and different understanding of how students learn. Teaching needs to be adapted to provide multiple learning opportunities in which assessments are an integral part of the learning process, not an additional, stand-alone activity at the end of a module.

Procedure

One faculty of health sciences in the Western Cape that offers professional programmes in health
sciences or social development decided to audit the assessment practices in all final year undergraduate students' final examination papers. The purpose was twofold. Firstly, the audit aimed to establish what types of questions were being posed in final examinations of final year students in order to determine whether the questions assessed the levels of learning that elicited the kinds of knowledge required by the new policy. Secondly, the study aimed to determine which strategies were needed to support lecturers in the implementation of the new policy framework by interviewing heads of departments. Informed consent and voluntary participation were obtained.

The audit of assessment practices in the faculty occurred in 2006 and consisted of an analysis of all questions in the 2005 final undergraduate examination papers of all final year programmes in the faculty. The data set consisted of 27 question papers containing 225 questions, some being subdivisions of main questions. To determine whether the questions were aligned to national policy, the NQF level 8 competency descriptors (South African Qualifications Authority, 2005) were used as evaluative criteria.

Level 8 competency descriptors are:
- a well-rounded and systematic knowledge base in one or more disciplines/fields and a detailed knowledge of some specialist areas;
- coherency and critical understanding of one or more discipline/field's terms, rules, concepts, principles and theories; an ability to map new knowledge onto a given body of theory; an acceptance of a multiplicity of 'right' answers;
- effective selection and application of a discipline/field's essential procedures, operations and techniques; an understanding of the central methods of enquiry in a discipline/field; a knowledge of at least one other discipline/field's mode of enquiry;
- an ability to deal with unfamiliar concrete and abstract problems and issues using evidence-based solutions and theory-driven arguments;
- well-developed information retrieval skills; critical analysis and synthesis of quantitative and/or qualitative data; presentation skills following prescribed formats, using information technology skills effectively;
- an ability to present and communicate information and opinions in well-structured arguments, showing an awareness of audience and using academic/professional discourse appropriately (SAQA, 2005)

Each examination question collected was evaluated in terms of whether the question required of the student to demonstrate learning described in one or more of the criteria. The questions were evaluated by the researcher in terms of their conformity to the NQF criteria by assigning a yes or no response. Responses were captured and tallied for each paper per department and percentages were calculated.

Results of the audit of examination questions were presented to the faculty. Heads of departments then participated in a focus group interview to explore strategies and plans to support lecturers in professional development. Participants were heads of departments of six of the nine departments in the faculty. The interview was audio-taped and transcribed for analysis. Qualitative analysis for codes, categories and themes was done manually.

Methodologically, the audit was conceptualised as improvement oriented evaluation and specifically as formative evaluation as the purpose was to
improve assessment (Babbie and Mouton, 2001). In this case, ‘assessment’ was used as a starting point in facilitating change and developing deeper understanding of student-centred learning.

Two sets of data were gathered. The first set of data consisted of an analysis of all final year examination questions and the second set of data was gathered by means of a focus group interview with heads of departments.

Results

Results of the analysis of all examination questions evaluated according to criteria based on NQF level 8 competency descriptors are illustrated in Table 1.

The results provide an overview of the nine departments’ examination questions in terms of the kind of learning elicited by the final year examination questions and whether the questions conformed or did not conform to the evaluative criteria. Percentages in bold script indicate areas where questions do not elicit the type of learning promoted by the HEQF. Whereas departments 1, 4, 5, 6 and 9 posed questions in their examination papers that elicited the type of learning advocated by the HEQF, examination questions of departments 2 and 3 do not reflect enough of the type of learning required. Departments 2, 3, 7 and 8 should ask more applied questions and include questions in which students are required to apply theories or principles and demonstrate problem solving.

Furthermore, the results indicate that more of particularly two types of examination questions should be included in final year examination papers, reflected in columns 3 & 4 of Table 1. Assessment of learning should be geared more towards the application of principles or theories and the demonstration of problem solving. The results could assist departments in identifying what types of questions to include in final year examination papers that would allow students to demonstrate the type of learning that is currently valued.

Uncovering challenges and enablers of change

The above results were presented to the faculty, followed by a focus group interview with six heads of departments. The interview turned on departmental heads’ perspectives of implementation of the new framework. The findings revealed firstly, the difficulties and challenges experienced during implementation. Secondly, helpful strategies were identified. Finally, action research of implementing change was suggested as a method for professional development of staff.

Challenges

The following challenges were identified:
- Assessment methods were traditional because teaching methods were traditional;
- Teaching was still content driven;
- Design of assessment criteria for specific outcomes was difficult.

The interview revealed the view that assessment methods were still traditional in those departments where lecturers had not yet shifted away from traditional teaching methods. A deeper understanding of new insights into teaching and learning was needed. The view was expressed that complete restructuring of curricula was required to enable lecturers to focus more on student learning.

The problem of teaching being too content driven was raised. The challenge of lecturers having to
reduce the emphasis on the content of modules emerged. One participant reported that lecturing staff in her department struggled to move away from using course content as departure point when designing modules, teaching strategies and assessment tasks, despite having developed specific outcomes for the module. She said:

*Because you find that most people find it difficult in shifting to OBE. You know when you look at the module descriptor, its written in outcomes-based, but now when people develop course outlines, they always want to focus on the content to develop course outlines... then you are moving back to the old method....*

She explained that when module outlines and learning guides were designed with the focus on the outcomes, then teaching and learning would be more aligned to the achievement of competencies.

**Solutions**

Those departments who had made more progress towards implementation of the new framework had found the following strategies helpful:

- Sharing good practice;
- Obtaining external expertise;
- Support for professional development;
- Provision of exit level outcomes provided by professional bodies that describe the competencies that graduates need;
- Overcoming the challenge of writing assessment criteria.

In response to a question about strategies to move the implementation process forward and to provide support for lecturers who were grappling with the concepts that underpin learning-centred and outcomes-based approaches, participants described some of the approaches that yielded
good results. One suggestion was the sharing of good practice. Another suggestion was the use of team teaching and the development of teacher guides. A participant reported:

In my department, because of the big number of students, we do a lot of team teaching. So a team of first year lecturers would have meetings every week and they reflect on their teaching for the week and prepare for the next week. Because we use case-based methodology, each of the six people that are teaching first years, they know, they do the same thing for the students and there are lots of meeting and a lot of depending on each other and it really helps for the newer people to get mentored by the more senior people. In that way, team teaching is really helping the newer members of staff to settle in.

She further explained that when the new teaching methodology was introduced, the department held a series of workshops for all staff to become familiar with the new methods and their underlying concepts. Furthermore, a facilitators' handbook was developed, to enable staff members who joined the department at a later stage to orientate themselves to the new methodology.

The students' handbook also speaks to the methodology of teaching that the department uses, so the students when they come, during orientation, we make that shift to the new approach.....so its all dictated - the student handbook as well as the facilitators' handbook. So when the teacher meets the students they are already on the same page, they know exactly what to expect.

It emerged that departments who had made successful shifts to the learning paradigm and new assessment forms had invested in professional development of their staff.

Another departmental head reported the use of experts from outside to assist staff in making the shift to an outcomes-based approach. A consultant from another institution provided workshops and individual consultations to support lecturers in gaining an understanding of the new approach.

We found that it’s really difficult to actually stretch one’s outcomes and associated assessment from theory to practice so she’s [the expert] had individual appointments with staff members together with me and then one has to keep following this up and it’s a process which sort of never ends really, so I suppose getting outside expertise in.

Collaborating with peers in the same discipline at other universities was found to be a helpful process by one department.

They are grappling with this and it does help to, sort of, get together across institutions as well.

Experiential learning through practice opportunities in learning to write new course materials was identified as a helpful strategy for one department. The development of a new module for an external agency was helpful for one department. The participant explained:

What has helped my staff is that we got involved with a level four programme ...and they’ve developed learning materials for the [programme]. So if one has to develop learning materials against criteria and develop assessment tasks and it’s giving staff also that experience in trying to do that,

1 All professional bodies of health sciences and social development professions have collaborated with the South African Qualifications Authority in developing exit level outcomes. Each profession established a standards' generating body who developed exit level outcomes for each profession. The exit level outcomes contain descriptions of competencies deemed necessary by the profession for graduates to enter the profession.
which they can then learn, they can then transfer to their teaching.

Departments offering professional programmes where registration on graduation was required by professional bodies found that the professional bodies’ parallel process of developing exit level outcomes facilitated the process. Exit level outcomes for professional programmes helped staff to develop new insights into the requirements of outcomes-based curricula.

What helped us was really the exit level outcomes and associated assessment criteria, which were developed by the profession, that you know what students have to achieve from first to fourth year.

The development of assessment criteria for specific outcomes was experienced as a particularly challenging task. One participant described a method that helped her to design assessment criteria. She explained that she had asked herself how she would know that the student is achieving the competency. She reported as follows:

If I walk into the room where this particular outcome is being assessed, how will I know that the student has achieved it? Is it the accuracy that she does it with, is it the speed? ...I’m going to give you an example: if a student gives an intra-muscular injection - that’s an important competence in nursing - so if you develop an outcome for an intra-muscular injection, how will you know that the student is competent? Is it if she takes the anti-septic technique of injection control? Does she do it with minimal pain to the patient? Does she do it according to the correct dosage? You know, all that combined will formulate the assessment criteria for this outcome.

Furthermore, she explained that the criteria should discriminate between different levels of competence achieved by the student:

So if you always ask yourself: How will I measure this? What will make me decide? What will separate the two students? Because two students can be competent, they can do it, but what will make me say - she has got ten, he has got five? To distinguish between the two - those criteria will help you.

Research for publication

An opportunity for research and publication was identified. Mastery of the conceptual shift required to restructure curricula into a student-centred educational framework was time and labour intensive. One departmental head suggested that work undertaken by lecturing staff could be structured to culminate in a publication. To this end, action research was identified as an appropriate method. She suggested that the process of learning to implement an outcomes-based approach and to become familiar with student-centred approaches to teaching, learning and assessment provided an ideal opportunity for a research project:

Yes, we have to invest so much in this, can’t we work on identifying in the beginning some kind of research project? ... that when you’re doing this stuff one can actually then be putting things into place for the research?

A participant thought that a research driven approach would motivate staff to engage and participate:

...absolutely ideal if there is a motivation for meeting and then you know everything we have to do is potentially publishable.

Another stated:

... and that is why we should use action research. If everybody does a small bit on action research, if you decide to implement a small change and you document it in a research journal then you could
have a small piece of action research and that collectively and collaboratively becomes huge and very powerful.

Thus, findings from the interview revealed the challenges identified and solutions suggested in implementing the new framework.

Discussion

An audit on final year examination questions in a health sciences faculty revealed an uneven use of the types of questions that would elicit the kind of learning that is currently valued and required by national policy. Some departments posed examination questions that required of students to demonstrate higher order thinking skills in applying knowledge to solve professional problems. Such questions elicited descriptions of the concepts, principles or theories of the discipline; the application of principles or theories of the discipline; problem-solving using evidence-based or theory driven arguments; or the use of professional discourse. Other departments had started to incorporate more of the newer types of assessment questions and a few departments had not yet started to make any shifts in their assessment questions.

Heads of departments identified that teaching practice needed to change to a student-centred approach in order for lecturers to implement alternative types of assessment. A traditional approach to teaching in which a content-driven curriculum was offered, was found to lead to assessment questions that required of students to respond with answers that conveyed mainly factual knowledge.

Those departments who had experienced the implementation of an outcomes-based or case-based approach had identified strategies that were helpful for staff development. Examples of such strategies were modelling of new teaching methods to novice lecturers by experienced staff, attending workshops on educational methods, sharing of good practice examples and access to teaching guides. The advantage of personal professional development through individual consultation with an expert was a method that one department found useful.

Acknowledgement of the fact that new assessment practices are needed within a curriculum geared towards multiple learning opportunities leading to the mastery of competencies is shared by many (Luckett and Sutherland, 2000; Huba and Jann, 2000). At the most basic level, 'new' knowledge is applied knowledge. New knowledge demonstrates integration of knowledge, skills and values and elicits a demonstration of what students can do with their capabilities in authentic situations. Whereas Barr and Tagg's (1995) explication of the two polar opposites of an instruction paradigm versus a learning paradigm offers a useful description of the respective characteristics, Luckett and Sutherland (2000) suggest that the model of a continuum rather than a dichotomy might be helpful to assist lecturers in identifying their current practice. The concept of a continuum may help departments in determining where they are in terms of shifting paradigmatically and provide a way forward in terms of where they are heading.

The conceptual development and writing of assessment criteria for specific outcomes was a particularly challenging task. Challenges in developing criterion-referenced assessment practices are reported in the literature (Rust, O'Donovan and Price, 2005; Stowell, 2004; Woolf, 2004). Woolf (2004) reports an investigation into criteria used in assessing a final year module that
found a lack of shared understanding of the language in which assessment criteria were couched and the ways in which criteria were applied. Similarly, Stowell (2005) reported on assessment practices beset by conceptual confusion. Despite acceptance of the principles and values that underpin criterion-referenced assessment, lecturers were uncertain about what was being assessed. Furthermore, despite using criteria, it was still difficult to decide what the basis for judgements about students’ success and failure were. Likewise in South Africa, some academics embrace the philosophical and theoretical underpinnings of accountability, equity and justice towards students in assessment practices that are more transparent through explicitly stated criteria. However, the shift from norm-based to criterion-referenced assessments is difficult.

Learning is at the heart of the learning paradigm. How students learn is viewed by some scholars as emerging from a body of research in pedagogical literature based on work of Biggs (1999), Marton and Saljo, Ramsden and Entwistle (in Marton, Hounsell and Entwistle, 1984) and Prosser and Trigwell (1999). They espouse a model of approaches to learning in which deep and surface learning are identified as predominant approaches to student learning. Deep learning became the desired learning approach to aim for and good teaching was seen as enabling deep learning (Biggs, 1999). Teaching and assessment to elicit deep learning were said to be achievable when lecturers stated the intended learning outcomes upfront, organised learning activities to enable students to achieve the outcomes and assessed whether students had achieved the outcomes. Biggs (1999:29) refers to this model of learning as constructive alignment and views its theoretical basis as emanating from constructivism and phenomenography. The new type of learning is viewed by Luckett and Sutherland (2000) as ‘capability’, understood to be an integration of knowledge, skills and personal attributes. Huba and Jann (2000) confirm that if students are to master the capabilities identified in outcomes, they should be provided with opportunities to develop mastery of the competencies. Assessment tasks should be derived from real world problems and should elicit students’ skills in critical thinking and problem solving.

Professional development in alternative teaching methods is key to the development of alternative assessment practices. It is helpful to view the process as a paradigm shift that develops slowly over time. The conceptual change needed to understand the alternative view of teaching, learning and assessment and its transformative possibilities implies more than once-off workshops or readings. It will require ongoing support for professional development in the form of small changes to teaching and assessment practices, that are continually supported. A paradigm shift implies that it is not merely a new set of teaching techniques or a new method of designing assessment. It is a completely new way of viewing teaching, learning and assessment and it implies a large amount of staff support for development. Lecturing staff are under pressure to produce publishable articles for academic journals. To this end, a collaborative action research project appears to be a good solution. The following statement supports this view:

To develop new conceptualizations, we must analyze our old ways of thinking and make continuous changes. If our ways of thinking are not analyzed, they remain unchanged (and) existing patterns continue (Huba and Jann, 2000:4).
Conclusion and recommendations

An audit of examination questions revealed an uneven use of questions that elicit a 'new' kind of learning. Some departments had started to use questions that elicit currently valued forms of learning, other departments had started to include some such questions and a few departments had not yet started. Heads of departments reported that helpful strategies to move to a newer understanding of teaching, learning and assessment had been the use of modelling teaching, workshops, teaching guides and individual consultations with experts. As teaching staff experience increased pressure to publish academic papers, action research could serve both the purpose of facilitating a shift to the learning paradigm as a framework for alternative assessment practice and culminate in professional development.

Key recommendations

- Identification of current assessment practices may be a trigger for change;
- Implementation of new assessment practices can only occur together with simultaneous changes in teaching practices;
- Ongoing support for professional development is required to achieve a shift to the learning paradigm;
- Action research might be a useful strategy to facilitate change.

References


