Senior Certificate Syllabus Stagnation and Attendant Woes: Some Consequences for the National Senior Certificate

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I am talking from the perspective of Higher Education—but I argue that employers would support what I have to say, as I trust you will agree as I progress.

In any country, higher education must take, as its regular starting point, where the country's public education system ends. Its entry assumptions and its admissions and selection systems must be built on this. Its alternative access routes (including access courses, extended curricula and RPL procedures) must also take the 'norm'—the end of public schooling—as the starting point for system design (i.e. what are they alternatives to?).

Common sense dictates that the majority of students entering higher education come to it straight from school, and this is likely to continue, here and elsewhere. However, given South Africa's history of unequal provision and consequent unequal preparation for higher education study, and given our need in a rapidly changing world to continually reinvent and re-educate ourselves (lifelong learning), we need to ensure that access to higher education does not become so rigid that it:

- makes it virtually impossible for adults to enter higher education, or for people to have a second chance;
- narrowly constricts and constrains the curriculum so that all learners in FET are forced to follow more or less the same curriculum path.

In setting minimum entry requirements for higher education, then, it is useful to strip the problem down to its essentials.

I will speak from my experience, based on many years of working with academics at almost all South African higher education institutions. When closely questioned (interrogated?) on what they consider to be absolutely non-negotiable, the results are interestingly uniform:

1. Mathematics is non-negotiable for 'numerate' disciplines, although even here, the level and extent of Maths required at entry level is not completely clear. Will Mathematical Literacy result in enough numeracy to provide entry to BCom study, for example? A previous Dean of Commerce at the University of Cape Town (UCT) maintained that if a student had a good grasp of arithmetic, that was what was required – the rest could be taught along the way. However, for successful study in Science and Engineering, and some programmes in the Humanities such as Economics, school-level Maths is required, preferably at a fairly advanced level.

2. Physical Science is also non-negotiable, although generally only for Engineering and Health Sciences (most Science faculties offer Chemistry courses for regular-entry students who have not taken Science at school level).

3. Beyond this, there are very few subject-specific entry requirements for degree study (apart, of course, from specialist programmes such as Music or Architecture). One can study History or Accounting or Biology or Economics or Religious Studies at university without having taken those subjects at school.

So what is it that is required? What are the entry assumptions? In other words, what types of learning are assumed to be in place (over and above the particular knowledge and skills gained from Maths and Science as described above)?

What it seems to boil down to is such matters as academic literacy (the ability to think logically and critically, to be able to order ideas and construct an argument, both verbally and in writing, minimal levels of numeracy) as well as a threshold level of proficiency in the medium of instruction. I will return to these in more detail later.

I should add at this point, however, that this is NOT to downplay the crucial role of knowledge. It is through deep and meaningful engagement with knowledge-based problems that one develops the 'contentless processes' so essential to higher education study. This argument forms the basis for the 'designated list' of subjects that forms part of the minimum requirements for entry to degree study—that those subjects lend themselves most obviously and efficiently to the development of higher-order cognitive skills (although it should be said that there has been some pragmatic, and understandable, watering down of this by the Department of Education).

I have argued above that there is widespread agreement that students entering higher education should have developed high-level skills in these areas. It is also generally agreed that the development of these skills and abilities is slow and difficult, and ongoing throughout one's life—certainly in formal education, and commonly beyond it.

This takes us to the issue of the legacy of the Senior Certificate, and of the syllabus stagnation that has been its hallmark for several decades.

I would like to focus on what I see as the major consequence of this—a steady and extremely serious decline in the level of cognitive challenge in the teaching and assessment of Senior Certificate subjects (with the inevitable underdevelopment of learners within that system).

This leads me on to the study commissioned by Umalusi last year.

Umalusi, in taking seriously its role as the Quality Assurance Agency for General and Further Education and Training, got groups of researchers together to assess whether or not standards had fallen over the last twelve years, taking the Senior Certificate as the measure.

As well as analysing content (what was being examined), item types and mark allocations, the project assessed what we called the 'conceptual challenge' level, where three levels were assigned.

The subject with which I was involved, English Second or Additional Language, concluded that

… the nationally set paper in the subject is becoming easier—or, in the jargon of the examiners, becoming 'more accessible'. The conclusion was reached on the basis of the seeming fall in the number of questions designed to operate at more challenging level.[1]

Table 1. Examples of challenge levels in the English Second/Additional Language papers

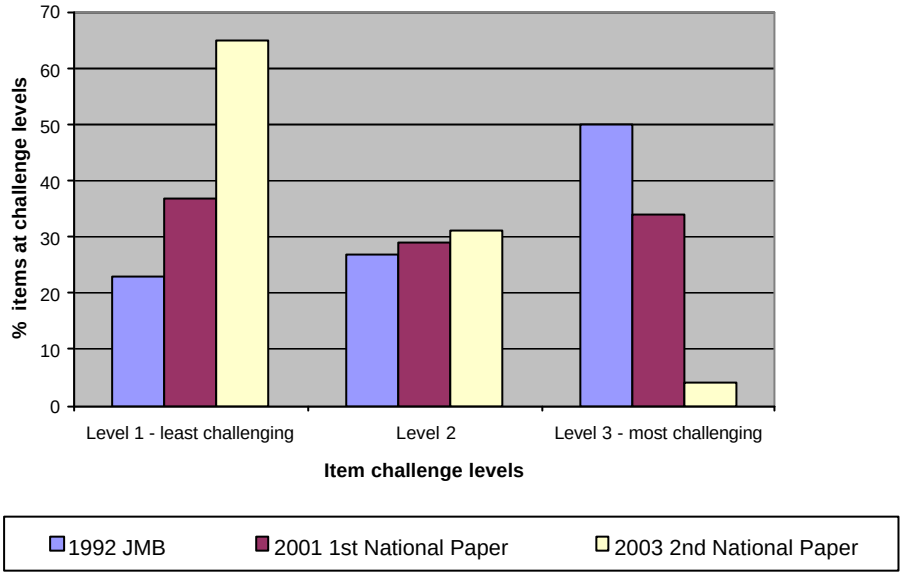
Options		***Examples***
1	• *The task was very simple.* • *The context/text of the task was very simple.* • *The task was relatively complex but was routinized/predictable.*	• *How many paintings does Portchie produce every year?* • One of the following is NOT classified as a white wine: A: Sauvignon Blanc B: Chardonnay C: Cabernet Sauvignon D: Rhine Riesling • Name any FOUR types of appetisers.
2	• *The task was relatively complex but the context/text made it less so.* • *The task was simple but the context/text was fairly elaborated or complex.*	• *A quite challenging 'word search' item, where the word would have been unfamiliar but the context made it obvious (the desired word stuck out like a sore thumb) or the distractors in a MCQ item were obviously incorrect.* • *An active into passive item with a number of transformations.* • Differentiate between a franchise and a chain group.
3	• *The task itself needed some unpacking – it not always clear what was wanted – would require some strategic thinking.* • *Complex task involving more than one operation.* • *Task to be performed on a complex*	• South African cuisine is often described as a fusion of colours and flavours, representing all the different ethnic groups which contributed to our heritage. Compile an interesting THREE-course menu which represents this eating style.

[1] The Literature paper shows an erratic number of Level 3-type questions, demonstrating great uneveness across the provinces. For example, Limpopo had only 1% of its questions at this level in 2003, raising question about the meaning of the 98% pass rate in this province.

or subtle text.

The Figure below illustrates the fall in the number of questions designed to operate at more challenging levels. It shows that, in the judgement of the researchers, in the 2003 National Paper, only about 4% of the items were set at the most challenging level, and 50% at the easiest level. In contrast, in the 2001 National Paper there was a much more even spread across the challenge levels, with about 34% at the most challenging level, and less than 40% at the easiest level.

Figure 1
'Challenge levels' of papers



Why is this such a problem?

English occupies a unique place in South African education, as it does in many other countries; it is both a target of, and a vehicle for, learning. One would expect, therefore, that candidates would be required to show that they can operate in English in ways in which they are surely expected to be competent when using English in their other subjects, such as History, Science and Biology.

To take some quick examples, one would expect to find evidence that candidates can, in the medium of English:

- distinguish cause from effect (an item achieving this can be found in the 2001 national paper - "What is the root cause of the 21-year-old's dejection (paragraph 4)? Use your own words." Other examples were not found.
- understand the difference between a point being made and the examples offered to support or challenge this point. Again, an example of such an item can be found in the 2001 national paper – "What proof, in paragraph 3, does the writer give to substantiate her claim that modern society is obsessed by beauty?"

- sift main points from supporting detail. A hallmark of poor readers is that they get sidetracked by examples, and lose sight of the main argument or thread of the discussion (and if they don't agree with or understand the example, they frequently give up on the text altogether). This should be focused on in the papers (questions could ask, for example, about what point the author is making when she describes x,y, z).
- offer alternatives or counter-arguments to assertions (not just identify those given in the text, although this was not required either). This is an essential critical reading tool (readers should be saying "… but what if …?", or "… where's the evidence for this?" or "… but surely this can't be right given the information in the previous paragraph …").
- classify and categorise groups of ideas/actions/phenomena (no examples were found of this).
- understand pronoun references (e.g. "this argument rests on the ……", "people believing this tend also to …….". Candidates would be expected to be able to identify to what the 'this' refers). Anaphoric and cataphoric references are particularly important for understanding coherence in text.

With the exception of the examples given above, there is almost no evidence of these abilities being tested in the papers assessed by the group. The majority of the questions were of the search-and-find variety, requiring little engagement of a deeper kind.

It is important, we would argue, to consider seriously the long-term consequences of allowing the challenge level of the papers to be lowered. This might make the papers 'more accessible' to poorly prepared learners, but surely masks the real picture of what is happening in respect of English Additional Language. As was suggested above, if this is the level at which candidates are really believed to be able to operate, what does this say about what they can do in their other subjects? Are the textbooks in those subjects written in similarly 'accessible' ways?

An assessment-related issue in connection with the inclusion of conceptually more difficult questions is that they are often more difficult to mark. It is possible that more use could be made of multiple-choice formats, carefully contextualised, but these would need to be very professionally set. Sentence completion tasks, which are relatively easy to mark, can be very probing. In essence, though, if assessment is to be allowed to fulfil its potential role of enhancing and promoting learning, it will need to be addressed not only through the increased professionalisation of the examination setting phase, but also through the development of markers and sub-examiners as assessors so that 'marker-proof' formats can be minimised and more meaningful formats employed.

It is argued that even if there are enough Level 1 and 2 questions in the papers for students to be able to pass by answering only those questions (to meet pressures to maintain and enhance pass-rates, for example), conceptually more difficult questions must be included so that they get taught to.

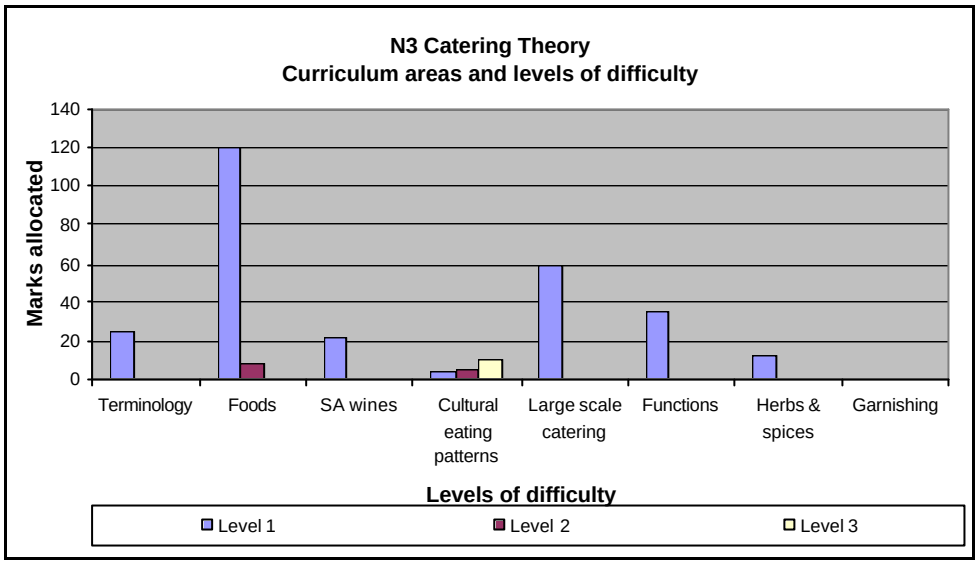


Figure 2. Curriculum areas and levels of difficulty in the November 2004 Catering paper [THIS FIGURE DIDN'T ALLOW ME TO ACCESS IT, SO I COULDN'T MAKE THE 'FIGURE 2' PART OF THE EXISTING FIGURE TITLE. PERHAPS YOUR LAYOUT PERSON CAN GET IN.] For some reason I can't either – perhaps one could label it outside the box in both cases?

Figure 2 is derived from the November 2004 examination of Catering theory, offered at schools. This paper currently only exists at Standard Grade level, but

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1. from 2006 it will be an FET subject (no differentiation);
2. it is on the designated list – that is, it is one of the subjects deemed to be suitable for building higher-order cognitive skills (although it now seems that there is some doubt about its inclusion on the list);
3. it is highly likely that increasing numbers of students will take the subject since it is on the list and since they might reasonably expect it to yield higher marks than (say) Accounting or History, given its history and its traditional learner pool.

Figure 2 shows the total absence of any items at Level 3. Several issues in relation to the new curriculum need to be addressed if its move into the National Senior Certificate (NSC) is to be successful.

First and foremost of these is the need for extensive teacher training. There are plans for training to begin in September. However, on the basis of the syllabi and examination papers on which this brief study was based, truly extensive training is necessary to enable the new curriculum to take its place as an FET subject, rather than a thin Standard Grade option as at present.

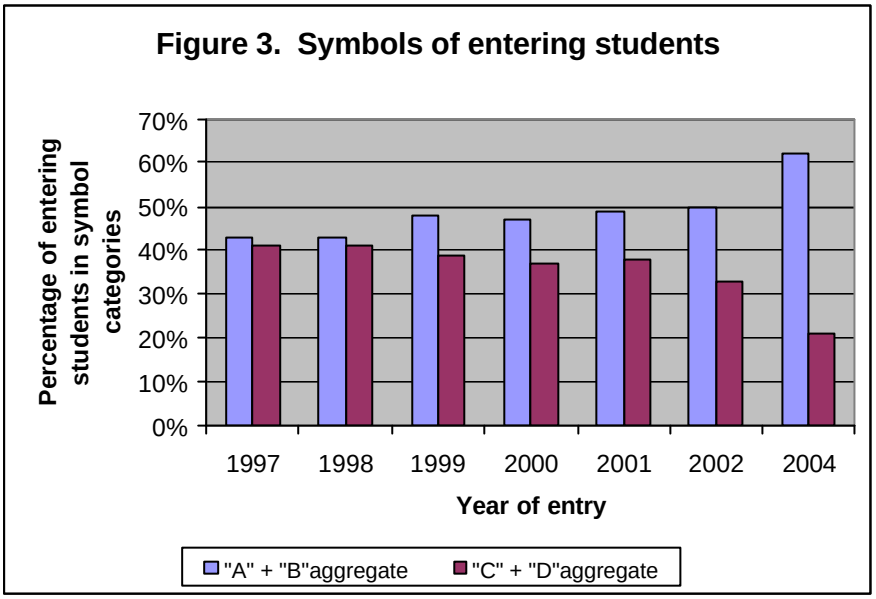
Educator knowledge and skill upgrading is urgently required in at least the following areas:

- The extensive reliance on lists of facts, recall of these, and a very superficial approach in general is likely to be difficult to shift without an accompanying growth in educator knowledge and competence.
- The new subject requires more authentic and comprehensive knowledge of the hospitality industry, which is lacking at present.
- The general level of cognitive challenge has to be raised.

- The standard of assessment will need to be raised. For example, giving only three options means that students can pass by guessing.

It seems fairly clear from the analysis above, and from the general conclusions of the Umalusi study, that there has indeed been a downward drift in the level of difficulty of the examination papers. I do not want to pursue in any depth the controversial issue of whether or not there has been grade inflation, but I thought it might be interesting to examine the next figure:

It can be seen from Figure 3 that the institution depicted has experienced a steadily increasing rise in the number of A and B aggregate students, and a decline in D and E aggregate students (partly because places are being filled by the former). Interestingly, however, the distribution of scores from the admissions testing for this institution does not show a similar upward trend.



There are many reasons for grade inflation. These include:

- *syllabus stagnation*: 'A syllabus stagnates— fewer and fewer creative and genuinely original questions are set, learners become adept at using past papers to prepare and experienced teachers hone exam coaching to a fine art. Teachers and learners without access to resources and experience fall further and further behind' (Davies, 2003).
- *lack of experience in assessment and poor assessment practices*: What gets examined is that which is easiest to examine; soon this is what gets taught.
- *manipulation of marking memoranda*, either to compensate for poorly set examination papers, with errors and inconsistencies, or to ensure that students can pass (lots of evidence of this on the memoranda).

Why is grade inflation a problem?

One of the reasons is that it makes selection extremely difficult. If two-thirds of learners in an institution's feeder schools are getting aggregates over 70%, it means the range of marks for selection is very truncated. (It also means that the gap between advantaged and disadvantaged is

getting wider.) The truncated range of scores is one of the reasons for the establishment of the Health Sciences Consortium – the tests spread performance quite satisfactorily. An example in principle of how they are used for selection will be shown later.

The other more important reason—and this relates to the title of my talk—is that a pattern of performance has been set based on stagnant syllabuses, examination-led teaching and poor assessment practices. Pass rates have risen into the 70%s. Now along comes a new and far more demanding curriculum—based on assessable outcomes.

It does not require much imagination to foresee the outcry if the pass rate were to fall by 10% with the introduction of the NSC. The point here is that the dramatic and much trumpeted rise in the pass rate under the previous regime in the Department of Education has created a very difficult context for the introduction of a new curriculum. It has, in a sense, set it up for failure. This is not to say it should not be introduced—it most definitely should—simply that it is going to be difficult, and will require determination and courage. If we truly assess the outcomes stated in the new curriculum statements, as the new NSC sets out to do, it will reveal the problems we all know about in the schools, and cannot result in a pass rate in the 70%s.

What can be done?

1. Phase in the introduction of the NSC.
2. Prioritise the upgrading of teacher competencies in academic literacy (language and numeracy).
3. Employ expert teams to develop the NSC papers, to train markers and to monitor the resulting processes.
4. Employ experts to closely monitor (inspect) continuous assessment (CASS) procedures.
5. Insist that extended writing actually take place.
6. Work with the National Benchmark Test Project (NBTP), whose interests and aims are entirely congruent with the achievement of a successful NSC and well-educated school-leavers.

THE NATIONAL BENCHMARK TEST PROJECT

What is the National Benchmark Test Project? What role could it play in relation to the NSC and to the introduction of the new curriculum?

First, what is it NOT?

PERSISTENT MYTHS

Table 2. The Benchmark Tests versus the SATs in the United States

United States	South Africa – current (SC)	South Africa – future (FETC)
In the USA there is no national school-leaving examination – the states fiercely guard their independence.	In South Africa the 'Matric' is the most public examination in the country, and its results are closely scrutinised.	The NSC will remain the starting point.
The SAT I score of a candidate is used by a very small minority of higher education	The TELP and AARP scores are used by a majority of institutions.	To be decided. The aim is for all students to write, either before entry or at registration.

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institutions (the most selective institutions).		
There is no agreed level of performance for successful entry-level study.	There is no agreement on the implications for curriculum at different levels of achievement on the test/s (so institutions can admit, to regular degree study, candidates whose scores indicate clearly that they will not cope).	The aim is to deliver diagnostic information to all institutions (i.e. for all applicants to write), and for the higher education sector to have established a common understanding on the curricular implications of levels of performance.
The SAT I score is used only for selection purposes The tests tap core generic competencies in non-curriculum-aligned areas.	The tests are used for placement (diagnostic) and/or for selection The tests tap core generic competencies in non-curriculum-aligned areas.	The tests will be used for placement into regular or extended/foundational programmes of study, and for RPL. The tests tap core generic competencies in non-curriculum-aligned areas.
The tests are developed by a professional testing company. A large profit is made.	The tests do not generate profit. Development costs are borne by the institutions using the tests, funders, or (in one case) are passed on to candidates.	The tests will be developed by a not-for-profit organisation, and will draw on panels of experts made up of delegates from all institutions. (They will be 'owned' by Higher Education).

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It is generally agreed that failure and drop-out rates at higher education institutions are unacceptably high.[2] There are, of course, several reasons for this, including inadequate preparation for tertiary study on the part of the schooling system, and inappropriate curriculum structures and teaching and learning approaches by the higher education institutions themselves.

The National Benchmark Test Project represents an attempt to provide both sectors (schooling and higher education) with important information on the skills and abilities of their exiting (in the case of schools) and entering (in the case of universities) students—information that does not duplicate the essential information delivered by the school-leaving examination, but that provides an important extra dimension.

As an initiative of the higher education sector, the focus of the Project is on its own core business—teaching and learning beyond schooling. Its primary aim, therefore, is to develop a mechanism to ensure that higher education institutions respond appropriately and responsibly to the demonstrated educational needs of the students they admit.

The mechanism will comprise the development of tests in three domains (discussed further below), and the setting of benchmarks of performance in each of these domains. It is this step—the setting of benchmarks—that most clearly distinguishes the NBTP from its precursors, the existing tests required by the majority of higher education institutions. It is envisaged that the sector as a whole will develop, agree on, and hold to the benchmark levels of performance below which students cannot be admitted directly to degree or diploma study. It is important to note, however, that this requirement is in addition to (not an alternative to) satisfactory performance on the NSC.

[2] The National Plan for Higher Education reports that "[Current] poor graduation and retention rates and high drop-out rates are unacceptable and represent a huge waste of resources, both financial and human. For example, a student drop-out rate of 20% implies that about R1,3 billion in government subsidies is spent each year on students who do not complete their study programmes" (DoE, 2001:22).

Table 3
MOCK-UP 1
INTERPRETATION OF BENCHMARK TEST PERFORMANCE FOR PLACEMENT PURPOSES

Degree study	Benchmark test score	Diploma study
	100	
Students achieving 50% or more would be deemed to be prepared for entry to regular degree study, providing they have met the FETC requirements stipulated by the institution/sector.	90	Students achieving 40% or more would be deemed to be prepared for entry to regular diploma study, providing they have met the FETC requirements stipulated by the institution/sector.
	80	
	70	
	60	
	50	
Students achieving 40% – 50% would be placed into extended programmes	40	
Students achieving below 40% would be advised to take preparatory courses (for example, at Colleges)	30	Students achieving 30% – 40% would be placed into extended programmes
	20	Students achieving below 40% would be advised to take preparatory courses (for example, at Colleges)
	10	

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Table 4
MOCK-UP 2
INTERPRETATION OF BENCHMARK TEST PERFORMANCE FOR SELECTION PURPOSES

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Benchmark test score	Point score to be added to FETC score	
91 - 100	10	For each benchmark test for which a student gets >90, 10 points are added to her/his FETC Score (F-Score)
81 - 90	9	For each benchmark test for which a student gets between 81 and 90, 9 points are added to her/his FETC Score (F-Score)
71 - 80	8	For each benchmark test for which a student gets between 81 and 90, 8 points are added to her/his FETC Score (F-Score)
61 - 70	7	Etc.
51 - 60	6	
41 - 50	4	
31 - 40	2	
21 - 30	1	
11 - 20	0	
0 - 10	0	

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The National Benchmark Tests (NBTs) will focus on three critical domains, viz. academic literacy, quantitative literacy, and mathematics. The test design will yield two tests: one dealing with generic academic and quantitative literacy, the other focusing on mathematical competence. The latter will be more curriculum specific, to accommodate articulation with specific tertiary-level mathematics

courses. The meaning of `benchmark' is here understood as a guideline measure of adequacy, and will usually be expressed as a required minimum level of achievement in some criterion-referenced task with respect to a specific content domain.

The choice of these domains arises from the fact that many South African school leavers enter universities, universities of technology or the workplace without the necessary academic skills (in particular, in academic and quantitative literacy, numeracy, or mathematical skills) to enable them to succeed in their chosen course of study or career. In general, it is clear what is meant by mathematical competence. However, there is some confusion over the terms academic literacy and numeracy or mathematical literacy.

Academic literacy is often confused with language proficiency, where language is the target rather than the vehicle for instruction. Put very simply, academic literacy relates to a student's capacity to engage successfully with the demands of academic study in the medium of instruction provided. Typically, and to select only a few examples, it focuses on such matters as:

- students' capacities to understand and use the structure and organisation of discourse and argument by paying attention—within and between paragraphs in text—to transitions in argument;
- superordinate and subordinate ideas;
- introductions and conclusions;
- logical development;
- students' capacities to 'see' main ideas and supporting detail;
- statements and examples;
- facts and opinions;
- propositions and their arguments;
- being able to classify, categorise and 'label'; and
- students' capacities to draw conclusions and apply insights, either on the basis of what is stated in texts or what is implied by these texts.

'Quantitative literacy' can be defined as the ability to manage situations or solve problems in a real context, using quantitative (mathematical and statistical) information that may be presented verbally, graphically, in tabular or symbolic form. For illustrative purposes, some examples of the kinds of mathematical thinking that entry-level students should be able to demonstrate are:

- a familiarity and understanding of the conventions for the representation and arithmetic manipulation (addition, subtraction, multiplication, division and powers) of numbers (fractions, ratios, percentages, etc.) in real contexts and an ability to use these to solve problems;
- ability to perform simple analysis of data;
- ability to produce and translate between different representations of data;
- ability to apply logical reasoning to information about real contexts (for instance, to determine whether a statement or example fulfils given criteria (or definitions); and
- ability to deal with simple questions involving order (for example, inequalities) and approximations.

The NBTs will address a central question: What are the core academic competencies (non-curriculum-aligned) that an entry-level student should demonstrate that will be sufficient indication that he/she will be able to cope with the typical demands of higher education in the medium of instruction of an institution, in a context of appropriate teaching, learning and curriculum support?

National Benchmark Tests in academic and quantitative literacy, and in mathematics, should thus, at minimum:

- assess the academic readiness of students to cope with the reading, writing, calculating and reasoning demands of typical higher education tasks, in all disciplines;
- assist in assessing the academic readiness of RPL candidates;
- act as complementary information to school-leaving results to assist in the placement of students into appropriate forms of higher education curriculum and programme provision;
- provide a sector-wide 'snapshot' of the learning needs of students entering higher education in these core areas; and
- provide the secondary school sector with meaningful additional information about students' results in the school-leaving examination during the transition from the present HG/SG-differentiated certificate to the NSC.

In addition, the benchmark tests as a group will provide a benchmark of the NSC itself during the period of transition from the current Senior Certificate examinations, until the reported figures of performance of the NSC are understood. The tests should provide an independent test of the candidate's skills and knowledge, and allow candidates who have written the Senior Certificate examination and those who have written the NSC certificates to be compared in a fair way during the transition period in relation to those aspects of knowledge and skills which influence or correlate with success in higher education.

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