

# MAKING SENSE OF MATRIC PASS RATES

By Anil Kanjee



thus since been writing the same examination paper in each of these five subject areas. In addition, the use of the year mark for calculating the final grade of learners was also introduced. This comprised an aggregate of scores obtained through classroom tests, homework, practical work and assignments.

Teachers with subject area expertise and experience, mark the papers at provincial level. Umalusi moderates the question papers and the marking of the examination papers. It also standardises the marks of learners in accordance with agreed statistical principles. This process is aimed at ensuring that learners of equal ability, who write different examination papers under different circumstances, will obtain equivalent results.

The practice of comparing the matric results continues: firstly, across different years to trace increases or decreases in pass rates, and secondly, between the provinces to determine which province recorded the highest or lowest increase or decrease in pass rates.

But I contend that one cannot compare pass rates across different years as this would entail comparing two different sets of learners and two different sets of examination papers – which leaves one with no common elements to compare. Even more disturbing, is the trend among researchers and academics to compare matric results from 1996 to 2003 (Figure 1) without taking into account that before 2001, no year marks were used in determining the final matric scores for any learner.

What is needed is to find a common base from which to compare – in this case it can only be the examination papers. I propose the use of a matrix sampling method, where an unusually large set of questions is administered to a large group of learners with different learners taking different sets of questions. As shown in Figure 2, learners A to E take questions q1 to q5 and questions q11 to q15

**T**he matric pass rate is seen as an important benchmark to measure learners' performance and the standard of education in the country. But can the pass rate actually tell us that? With some modifications to the current matric examination system it is possible to draw accurate conclusions about the pass rate, performance and educational standards.

In the last five years, the pass rate in the matric (Grade 12) examination has increased significantly. In his press announcement of the 2003 matric exam results, the Minister of Education noted that since 1999, the national matric pass rate improved by 24,4%. Increases in 2003 pass rates were also recorded in all nine provinces.

Credit for the steady improvement in the pass rate was rightly claimed by the provincial and national Education Departments who saw it as a direct result of their targeted intervention strategies to break the "cycle of underperformance". It signalled an improvement in the overall education system and indicated that the new government was succeeding in their efforts to provide quality education that addressed the needs of all South Africans.

But the increase in the matric pass rate also drew other comments. To some, it signalled that the examination papers were becoming "easier". To others, the increased pass rate

was merely a result of: holding back Grade 11 learners who weren't adequately prepared; requiring learners to take more subjects at the Standard Grade; lower cut-off scores that are used to make pass or fail decisions; and of greater leniency in the marking procedures.

What then is the practical significance of the pass rate? What does it tell us about our education system? What do our learners know? What can they do? How can learner performance be increased?

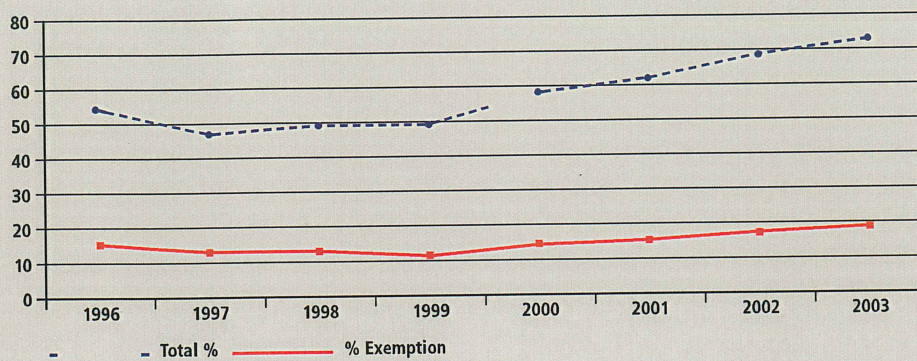
The current format of the matric examination dates back to 1996, when the 18 apartheid-based education departments were merged into a single national education ministry. This meant the opening of all schools to all races, a new curriculum and new policies.

The nine provincial departments were given full responsibility for the matric examination, with the national Department of Education setting the "norms and standards" and Umalusi (formerly known as the South African Certification Council) maintaining quality control. This meant that learners in the nine provinces all wrote nine different examinations for each of the subject areas offered.

In 2001, the first set of common national papers was administered in Mathematics, English Second Language, Physics, Accounting, and Biology, with History added in 2003. Learners in the nine provinces have



Figure1: National trend in matric pass rates and exemptions: 1996 to 2003



while learners F to J take questions q1 to q10.

This means that, for example, if we need 200 questions to cover the entire matric mathematics curriculum, we can administer as few as 20 different sets of questions to 10 different learners and still obtain reliable, valid and relevant information on how learners performed in the different sections of the curriculum. (In practice, the number of learners would, of course, be very much greater than 10, more in the order of 1000s.)

The Learner Achievement Monitoring Project (LAMP) is a classical example of this method. For this project, the HSRC developed 315 questions, requiring a total administration time of 1 080 minutes, to assess learner performance on the entire Grade 9 Mathematics, Science and English curricula.

Because it is impractical to administer all 315 questions to any single learner, these questions were organised into several booklets and then administered to different sets of learners.

It is crucial to note here that, firstly, different sets of learners take different questions, and secondly, that each individual learner takes some questions that are common to other learners – thus providing some common basis for comparison.

This means that, in a reasonable time and without jeopardising the reliability and validity of the test questions, one can obtain scores that are comparable for all learners. This can be done even if different sets of questions were taken at different times (e.g. across 3 to 4 years).

The disadvantages are that analysis of the papers can only be done using specialised software and that large samples are required to obtain valid and reliable results. However, all these challenges can be addressed given the availability of relevant resources as well as the experience and expertise at the HSRC.

Of course, the implementation of any such system should be done with extreme caution

to ensure that no learner is adversely affected. Any revision of the current system should be thoroughly studied and tested before large-scale implementation is done. This requires a process through which this very result is guaranteed.

The introduction of a South African Matric Monitoring and Intervention (SAMMI) system provides such a process. The idea is to integrate the matrix sampling design into each examination paper without affecting the performance of the learners. I propose that each paper will now contain an additional 20 to 30 questions, requiring approximately 40 minutes' additional testing time.

The learners should not be able to tell the difference between their "usual" questions and the "SAMMI" questions used for monitoring. The marking process should also be extended to accommodate the SAMMI system.

For the system to be successful it is crucial that the monitoring questions should not be disclosed and the current practice of releasing all examination questions after the examination will need to be revised. The effect of changing the structure, form and content of the examination paper on learner performance still needs additional investigation before any final decisions are taken. I therefore propose that several pilot studies be conducted in two or three provinces during the matric trial examinations.

SAMMI offers several practical advantages. It could include diagnostic items to identify common errors, which can be used in the development of relevant intervention strategies. Also, if a large enough pool of items exists in a subject area, a percentage of the items can be used to compile support material for the teachers to use in assessing their learners during preparation for the matric exams.

Most importantly, this approach provides the ideal opportunity to monitor trends in the matric pass rate. In particular, this model provides relevant information about what our learners know, what they can do, which areas of the curriculum they are struggling with, and whether the standard of the matric examination papers is dropping. •

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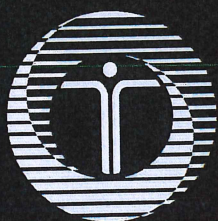
Figure 2: Example of a matrix sampling design

Item No/Learner	q1	q2	q3	q4	q5	q6	q7	q8	q9	q10	q11	q12	q13	q14	q15
A	x	x	x	x	x						x	x	x	x	x
B	x	x	x	x	x						x	x	x	x	x
C	x	x	x	x	x						x	x	x	x	x
D	x	x	x	x	x						x	x	x	x	x
E	x	x	x	x	x						x	x	x	x	x
F	x	x	x	x	x	x	x	x	x	x					
G	x	x	x	x	x	x	x	x	x	x					
H	x	x	x	x	x	x	x	x	x	x					
I	x	x	x	x	x	x	x	x	x	x					
J	x	x	x	x	x	x	x	x	x	x					
K						x	x	x	x	x	x	x	x	x	x
L						x	x	x	x	x	x	x	x	x	x
M						x	x	x	x	x	x	x	x	x	x
N						x	x	x	x	x	x	x	x	x	x
O						x	x	x	x	x	x	x	x	x	x



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