The test performances of this year's first-year university students in mathematics and physics have triggered widespread concern in the higher education sector.

Last week universities told *Higher Learning* that although it was too early to make a final judgment on the performance of these students, initial indications are that their achievements in mathematics and physics are not on par with those of first-year students in previous years. This is putting more strain on the academic support systems for first years.

Although universities refused to divulge the results of semester tests, media reports have started to reveal some details about first-year marks. At the University of Pretoria, for instance, only 17% of first-year chemistry students passed their first semester test compared with 47% last year. This means only 169 of the 905 students enrolled for the subject passed.

A host of factors is blamed for what appears to be an emerging trend. These include the ongoing crisis in the schooling system (ill-prepared learners), the new National Senior Certificate (NSC), which has been under fire for the standards of its maths and science papers, and a massive increase in the number of first-year students, which has placed huge strain on the quality of teaching at universities.

In January the *Mail & Guardian* reported that about 22 000 more matric candidates achieved university entrance in 2008 than in the previous year and that many cannot be absorbed into an overtaxed tertiary education system. The 26% rise in matric exemptions -- from 85 000 in 2007 to 107 000 last year -- occurred despite the drop in the overall pass rate for the NSC from 65% to 62.5%. This also occurred against the national trend of a 50% student dropout rate before the completion of an undergraduate degree.

Theuns Eloff, chairperson of the vice-chancellors' association Higher Education South Africa, said the higher education system has had difficulty coping with the bigger student intake this year. Eloff said the department of education earmarked R3.2-billion for spending on infrastructure and graduate outputs, but this would bear fruit only from 2010 onwards.

North West University (NWU) spokesperson Louis Jacobs accepted that this year's first-year students' maths and physics results were not impressive thus far. But he said the university is monitoring this trend closely and various measures will be put in place to resolve this apparent below-par performance.

Said Jacobs: "The NWU is giving more attention to the transition phase between secondary and tertiary mathematics education. During 2008 certain proactive measures were put in place, once the changes in the department of education curriculum were viewed."

Based on the information received from the Nelson Mandela Metropolitan University's physics department, the situation with first-year students' performance in the first term is not promising. The university said despite efforts and interventions to improve results, first-year students' performance does not bode well for this term and the exams in June.
Half of the students failed the [first] test and 58% of them failed the second test. The department expects, at best, a throughput rate of only 50%,” the university said.

The University of the Witwatersrand’s deputy vice-chancellor, Professor Yunus Ballim, said according to early indications the university should be concerned about first-year students’ maths and physical science results.

But he said first-year students appeared to be differently competent when compared with similar students in previous years.

“Anecdotal evidence suggests that this cohort takes to reading tasks more easily and more readily and that they seem to engage more competently in group-work tasks and self-study,” said Ballim.

Meanwhile, a ministerial review of the maths exams, led by private consultant Aarnout Brombacher, revealed that: “There weren’t enough straightforward questions and there weren’t enough difficult questions. This made passing harder but getting an A or B symbol possibly easier.”

The review was based on examining a study by the Association of Maths Educators of SA (Western Cape) and matric exam quality assurance body, Umalusi.

Brombacher said the panel believed that those who got 50% or more in the 2008 core maths exam would historically have passed higher grade at 40%. But this is not a scientific study.