Where will tomorrow's software engineers come from?

The struggle to increase the number of graduating software engineers has been an ongoing challenge throughout the last two decades. The Joburg Centre for Software Engineering's (JCSE) director and head of software engineering at Wits University, Professor Barry Dwolatzky said that while there are improvements, South Africa's matric maths and science results remain poor. He said this continues to have a lasting impact on the software sector and is not only a local issue.

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"Since the early 2000s there has been an international decline in the number of young people registering for Information Communication Technology (ICT)-related disciplines. The poor state of maths and science in SA's schools precludes many students from making the choice to study ICT-related subjects. There is also insufficient career counselling as parents and teachers in township schools and rural areas know little or nothing about careers in ICT. The nett result is that students who may have the interest and aptitude are never presented with ICT as a choice," explained Prof. Dwolatzky.

In addition, poor subject knowledge leads to inadequate teaching based on repetition as opposed to building a love and deep understanding of their subjects. "Schools need to focus on improving teacher knowledge and provide more exposure to exciting careers in the sector, such as game design and app development, both of which require good maths and science marks in order to study at a university."

The government needs to take action

Dwolatzky said that the government needs to take action if South Africa is to be in a leading position within the next decade. "There are a few simple steps that will immediately make a difference: better management of schools, an upgrade of teachers' skills, considering involving experienced retired maths and science experts to support teaching, an improvement of career guidance within the schools, and exposure of students - and teachers - to inspirational role models.

Furthermore, universities can also support schools by running programmes aimed at educating students and encouraging further studies within the ICT sector: "The JCSE runs the ImpaCT Programme, which includes academic, social and psychological enrichment and helps learners to access bursaries to enter into tertiary education in ICT-related degrees. A key aim is also to promote positive role modelling. The learners are exposed to dynamic individuals in the industry who

come from similar backgrounds and passionate Wits University students who tutor them.

For more information on the Impact Programme contact the JCSE on +27 (0)11 717 6390.