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Sediba lecturer receives doctorate

A lecturer at the Sediba Project and former Sediba student, Mr Abraham Motlhabane, received his doctorate during the spring Graduation Ceremony held at the Potchefstroom Campus of the North-West University on 16 September 2005.

Abraham Motlhabane was born on 11 December 1973 in Rustenburg. He completed his matric at Rakoko High School in 1991 and trained as a teacher at Mankwe College of Education where he completed the University Diploma in Education (Secondary) (UDES) cum laude in 1994. He was employed as a teacher at Malefo High School from 1995 to 1999 and was subsequently promoted to the position of Head of Department (Maths and Physical Science) at Kgalatlowe High School in 2000. He studied part-time at the former PU for CHE where he obtained the HED cum laude (1998), B.Ed Science Education (2000), M.Ed Science Education cum laude (2002) and then enrolled for the Phd in Physics Education (2003) which he completed in May 2005. He is currently seconded by the North-West Department of Education to the North-West University (Potchefstroom Campus). He is lecturing Physics in the Sediba project of the School for Science, Mathematics and Technology Education at the North-West University (Potchefstroom Campus). He is married to Mmatshepo and they have a son.

In his thesis, Educators’ approaches to practical work in Physics, Abraham investigated the difficulties experienced by Physics educators in approaching practical work. Video-taped lessons based on the practical on Ohms’ law were analysed. The results of the study indicated that the educators still use traditional chalk-and-talk approaches to practical work with little attention paid to the teaching and learning of inquiry and problem-solving skills. Video-clips of educators’ lessons were put together in a CD ROM for critical analysis and discussion in conferences, seminars and teacher training institutions. These video-clips are already being used in a B.Ed hons science module at the North-West University (Potchefstroom Campus). The results of the study were presented at an international and a local conference, and will also be published in an academic journal.

The management and staff of the SSMTE would like to congratulate Abraham with this achievement.

Dan Kgwadi, appointed honourary professor in the SSMTE

Dr Dan Kgwadi, Rector of the Mafikeng Campus of the North-West University, was appointed Extraordinary Professor in the School of Science, Mathematics and Technology Education on the Potchefstroom Campus of the NWU in 2005. (Continues on page 2.)
His responsibilities as Extraordinary Professor at the SSMTE centres mainly around research collaboration with SSMTE staff and involvement in post graduate training. The management and staff of the SSMTE would like to extend a warm word of welcome to Prof Kgwadi and wish him well with his duties in the School.

**Prof Smit attends Physics Education Conference in India**

From 21 -26 August 2005 Prof Jan Smit attended an International Conference on Physics Education in New Delhi, India where he presented a paper. The conference was officially opened by the President of India, Dr A. P.J. Abdul Kalam, himself a renowned physicist. Dr Kalam handed to each participant at the conference a book entitled "One hundred reasons to be a scientist". What further makes the book special was that it was compiled by the Abdus Salam Centre for theoretical Physics, Trieste, Italy. This centre was founded 40 years ago by the Indian Nobel Laureate Abdus Salam. The following anecdote from this book describes an incident in the life of William Thomson, later known as Lord Kelvin. He started studying mathematics at the University of Glasgow in Scotland at the age of 10 years and moved to Cambridge at age 15 where Isaac Newton did original work in calculus and physics. The story relates to his studies at Cambridge.

In his early life Lord Kelvin was known by his family name Thomson. This story refers to Thomson and another young man Parkinson both of whom were competing for the top rank in their Cambridge examination of the Mathematical Tripos. In the end Parkinson topped the list and Thomson stood second with the rest of the pack far behind. There was one particularly difficult question which only the two had answered correctly. What struck the examiner most was the similarity of their answers so much so that he suspected malpractice. Did one boy copy the other’s answer? He called Parkinson for an interview. “Tell me, how did you manage to solve such a difficult question?” he asked Parkinson. “Sir, I occasionally read research journals. I had come across a paper wherein the author had solved this problem. So I knew the solution beforehand.” He gave the reference to the paper. The examiner who himself had taken the problem from that very same paper was impressed. He complimented the boy for going beyond the syllabus and reading new articles. Dismissing him with a pat on the back he called Thomson and asked him somewhat aggressively: “I would like to know how you solved this problem. Parkinson who solved it saw the solution in a research paper. Don’t tell me that you also saw it there.” “No Sir!” replied the future Lord Kelvin. “I wrote that paper.”
Best students honoured

Two Sediba students received awards during the prestigious Annual Merit Award Ceremony organised by the Faculty of Natural Sciences at Potchefstroom University. The gala event was hosted by Professor Gerhard du Toit (Dean of the Faculty of Natural Sciences) and took place on Friday 24 February 2006.

The two Sediba students who were honoured are Mrs Alice Maphutsi and Mr William Rapoo. Mrs Maphutsi received a merit certificate for the best performance in mathematics for the period 2004-2005, while Mr Rapoo received a certificate for the best performance in science for the same period. Both also received a cash prize from the sponsors of the Sediba Project. The Sediba staff and management wish to congratulate these two teachers on their achievement.

Ikateleeng Project helps matrics

The Ikateleeng Project aims to help grade 12 learners to obtain university exemption. This year the results were particularly promising as many learners passed with honours or earned distinctions. The programme comprises supplementary classes on Saturdays. Some of the teachers involved in the programme are Sediba alumni.

The pass rate of learners from the Potchefstroom area who participated in the programme increased from 85.3% to 95.5%, while the pass rate of Ikateleeng learners from the Vaal Triangle rose from 74.2% to 88.3%. In the rural area of Taung, the pass rate increased by 4% to 88.6%. In the Mafikeng area, the pass rate was 77.8%. All of these pass rates far exceed the provincial and the national results.

Mr Martiens Masiea, the “father” of Ikateleeng, is particularly proud of this. Every year, he measures his success against the pass rates of the national and the provincial education departments, and results such as these prove that the programme is indeed successful. To him, the greatest surprise of the 2005 matric results was the record number of distinctions of Ikateleeng learners. In total, 127 distinctions were achieved 56 in Mathematics, 9 in Physics and Chemistry, 12 in Biology and 15 in Accountancy. Five learners scored A’s in Afrikaans. Furthermore, eight matrics passed their final exams with honours as opposed to only one last year. 334 of the matrics from the group of almost 700 obtained
Staff of the Student Lab Project is currently busy with workshops in North-West province. The new National Curriculum Statement for Physical Science (Chemistry) grade 10 will be implemented in all the workshops. 25 Subject advisers from 25 regions at 79 workshops with 502 teachers attending are involved in the project. The project has five teams that go out from the North-West University to five main regions: Vryburg, Lichtenburg, Brits, Rustenburg and Potchefstroom.

Student Lab workshops held in North-West Province

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Well done, Sediba students!

Sediba students performed very well last year. The overall pass rate for final year students was 81.8%.

Mathematics students

Potchefstroom Campus: 43/51 (84.3%) of second year students who wrote the final examination at the end of 2005 received their ACE during the March graduation ceremony in 2006. One student, Mrs Alice Maphutsi, passed the course with honours.

Science students

Potchefstroom Campus: 38/49 (77.5%) of second year students who wrote the final examination at the end of 2005 received the Advanced Certificate in Education (ACE) during the March graduation ceremony in 2006. Vaal Triangle Campus: 18/21 (85.7%) of students who wrote the final examination at the end of 2005 received the ACE during the March graduation ceremony in 2006.

The staff and management of the Sediba Programme wish to congratulate all students who received diplomas.

university exemption, while another 293 passed. Ikateleng is one of the NWU’s most successful community projects. Learners from previously disadvantaged schools who passed grade 11 with an average above 60% are identified with the help of schoolmasters and, following psychometric tests, the best candidates are then offered an opportunity to become involved with the project (with centres in Potchefstroom, Mafikeng, Vanderbijlpark and Taung). The supplementary teaching is offered on sixteen consecutive Saturdays. Learners have a choice between subjects in natural sciences (Mathematics, Physics and Chemistry and Biology) and economic sciences (Accountancy, Economics and Business Economics). Apart from English, a life skills programme is also offered, which includes study methods, problem solving and career orientation. Last year, no less than 74 former Ikateleng learners obtained degrees (41) or diplomas (11) at the Potchefstroom and Vaal Triangle Campuses. Another 22 learners obtained honours degrees.

Sediba is a project of the School of Science, Mathematics and Technology Education of North-West University in conjunction with:

NASCHEM (DENEL), BILLITON DEVELOPMENT TRUST, NORTH WEST DEPARTMENT OF EDUCATION, UPSTREAM TRAINING TRUST, SASOL VAAL EDUCATION, OLD MUTUAL, SPOORNET, ESKOM, AFRICAN CABLES, SAB, FIRST RAND, SAFRIPOL, KARBOCHEM and DORBYL ENGINEERING.

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