

## Aqualibrium – Celebrating SA's young water achievers

A team of scholars from a school in the East Rand of Johannesburg are the proud winners of Aqualibrium, the South African Institution of Civil Engineering (SAICE)-Water Research Commission (WRC) Schools Water Competition 2013. Debbie Besseling took the opportunity to speak to the pupils and their teacher about their significant achievement.



SAICE Outreach Officer, Marie Ashpole, with Ekinisweni Secondary School teacher, Deborah Ramachela.

All photographs courtesy SAICE

The 2013 Aqualibrium champions, Tyson Chuma (18), Rudzani Mnisi (18) and Thulani Ndlovu (17) attend Ekinisweni Secondary School in Ivory Park, Midrand. They won the competition with just 60 penalty points – a truly exceptional score.

The Aqualibrium competition was launched ten years ago as SAICE and Rand Water celebrated a hundred years of existence. The competition was devised by Prof Kobus van Zyl and students from the then University of Johannesburg.

Using a grid and a set of plastic pipes and buckets, the competition practically illustrates how water distribution systems bring safe and clean drinking water to the people of South Africa. Learners are given insight into the practical application of the processes and the intricacies involved in the design of water distribution networks as well as the actual water delivery to households.

According to SAICE Outreach Officer, Marie Ashpole, who has been involved in the event since its inception: "The teams are tasked to design a model water distribution network to distribute three litres of

water equally between three points on the grid using two different diameter pipes and connection pieces. They are then judged on how well they execute the task – working on a penalty points system. They have a period of about an hour in which to design, build and operate their network."

Regional competitions were held across the country whereafter the finalists gathered at the SciBono Discovery Centre in Johannesburg to compete for the title of ultimate winner. While the team from Ekinisweni took first place, the second place went to the team from Diamantveld Hoërskool from Kimberley, followed by joint third-place winners, Hoërskool DF Malan from Cape Town and Mfesane Senior Secondary School from Port Elizabeth. The three winning teams shared the prize money totalling just over R17 000.

Main sponsor of the competition, the WRC, is committed to the success of young learners who are dedicated in the fields of mathematics and science. SAICE and the WRC have taken the responsibility of spreading the news that more capacity is required to ensure that water is used wisely, that infrastructure is maintained and that new infrastructure is created to provide potable water to those without water. The competition is used as a platform to

introduce the water sector as a potential career choice to young people.

Commenting on behalf of the WRC, Lani van Vuuren says that this competition further strengthens government's initiatives aimed at encouraging learners to take Mathematics and Science at school and to follow a career as a science or civil engineering professional. Only in this way can we assure that the quality of life of all South Africans will be better in future!

### THE TEACHER BEHIND THE WINNING TEAM

Teacher Deborah Ramachela, accompanied the winning team to the finals. She could hardly contain her excitement at their win. She shared some insight into the capabilities of her pupils, describing them as very dedicated learners with good morals, values, tolerance, as well as being disciplined in terms of their studies.

Tyson is rather shy, hardworking, committed, focused, respectful, disciplined, dedicated, participative and extroverted. Rudzani is studying mathematics, physical sciences and life sciences. She is hard-working, dedicated, committed, participative, full of respect, focused and disciplined. Thulani is studying mathematics, physical sciences and life sciences. He is shy, hard-working, dedicated, participative, committed, focused, respectful and a self-disciplined learner.



According to the team, participating in (and winning) the competition was a great experience. They attribute their success to their positive attitude, their hard work and their support of each other. They advise future competitors to do some basic research on how to design water distribution systems, and to think logically and stay focused.

Commenting on her role and involvement in the competition, Ramachela says she was involved in guiding and facilitating the programme at school, and provided support and motivation to her learners so that they could strive to achieve the best results.


According to Ramachela, the qualities that in her opinion are essential requirements for pupils entering the competition include being committed, available and dedicated to their school work. "Then everything is possible and achievable, because this is all about thinking logically and being able to do the necessary planning," she says.

Ramachela is an educator in the Commercial Department at Equisweni Secondary School. She teaches Accounting and Economics and is head of the Grade 9 group. She has a B.Ed and is studying

towards a B.Ed Hons second year at the University of Johannesburg.

"I have been a teacher for more than 13 years. What I like most about teaching is that I have been able to change many learners' lives, and I feel as if this is my calling. I dedicate my time to the learners so that they can be exposed to the reality of life, with the help of the department and my family," she says proudly.

On discussing the challenges faced as a teacher at Equisweni Secondary School, Ramachela comments that the environment that the learners are constantly facing is challenging, because many of them come from very disadvantaged families. A number of pupils are from single parent families, but this doesn't stop them from achieving. The importance of dedicated teachers cannot be reiterated enough. Encouraging and motivating learners to participate in extra mural activities is a fundamental aspect of the overall learning process.

Often the teachers and students work under difficult circumstances, Ramachela comments that one must have dedication, commitment, as well as love and passion for what you are doing in order to achieve success. 



**Above:** Winners of the SAICE-WRC Aqualibrium competition, Rudzani Mnisi, Thulani Ndlovu and Tyson Chuma from Equisweni Secondary School (kneeling) with their teacher, Deborah Ramachela and her daughter, SAICE CEO, Manglin Pillay, SAICE President, Peter Kleynhans, and Lani van Vuuren from the WRC.

**Below:** The learners from Equisweni Secondary School at work during the finals of the SAICE-WRC Aqualibrium competition. From left: Rudzani Mnisi, Thulani Ndlovu and Tyson Chuma.

