



Pupils from East London Secondary School playing *Every Drop Counts*, while Tara Schwulst observes (Photo: Anne Schwulst)

Every Drop Counts

a water game to remember



Debbie Besseling
Idube Media
debbie@idubemedia.co.za

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Tara Schwulst, at the time a pupil from Stirling Primary School in the Eastern Cape, has received a number of awards for an interactive educational water game that she developed in 2012, named *Every Drop Counts*.

Tara's board game is not just about having fun, but teaches players of the game important facts about water – our most precious resource.

CONSERVING WATER IS the responsibility of all South Africans. *Every Drop Counts* is a game that assists pupils to learn and remember important water facts and vital water saving techniques. Tara explains: "The aim of my project was to design a unique water game that could be used as a teaching aid in creating awareness about water use efficiency and water resource management."

THE CONCEPT

Tara says that she came up with the idea to create the game when she learnt of some of the concerning facts about water that she had researched, such as the number of children in Africa that do not go to school because of the long distances they have to walk to fetch water for their families. She extended her research to find out what other water games were currently available and discovered that there were not many educational games that specifically focused on educating the youth of South Africa about important water information.

THE IMPORTANCE OF THE CORRECT RESEARCH

Tara's initial research involved undertaking a survey to find out how effective

her educational water game was as a teaching aid. Four different schools and grades were selected to participate in the survey. The schools included: College Street Primary School (Grade 7 learners), East London Secondary School (Grade 10 learners), Sterling Primary School (Grade 5 learners) and Gonubie High School (Grade 11 learners), with 25 learners from each school.

The initial step was to find out what knowledge the learners had about water facts and water saving tips. Tara compiled a questionnaire consisting of twenty questions, which comprised three main sections. These were: Interesting Water Facts, Saving Water at Home and Saving Water in the Garden. Pupils from the participating schools were asked to complete the *Water Wise Questionnaire One*. Thereafter they played the water game *Every Drop Counts*. After all the pupils had played the game, they were re-tested with the same questionnaire to find out what they had learnt.

One month later, the same participating pupils were asked to complete another set of questions, *Water Wise Questionnaire Two*, also based on the game *Every Drop Counts*, to see how much knowledge they had retained.



College Street Primary School pupils completing their questionnaire (Photo: Anne Schwulst)

RESEARCH RESULTS

Based on the accumulated research from the 100 pupils from four schools, the average score of *Water Wise Questionnaire One*, the first questionnaire completed before the game was played, was only 30%. However, the average score increased to 76% after the pupils had played the educational water game. These results showed that there was an overall improvement of 46%.

A month later, when pupils were re-tested, the average score was 70%. Tara says, "This score indicated that the majority of pupils retained the information that they had learnt through playing the *Every Drop Counts* game."

Commenting on how the pupils reacted when playing *Every Drop Counts*, Tara says: "The pupils overall enjoyed playing the water game. They said they learnt important information, which included facts such as that less than 1% of the world's water is usable as drinkable water, that more than 1.3 billion people do not have access to clean drinking water, and that, because the water cycle is continuous, we could be drinking the same water that dinosaurs drank millions of years ago."

At the outset, many scholars were concerned when they realised they did not know the answers to some of the questions in the first questionnaire. However, while playing the game, they learnt a lot and found out many of the answers.

Pupils playing the educational water game *Every Drop Counts* (Photo: Anne Schwulst)



Overall, the game made learners aware of the serious situation with regard to South Africa's water, whilst learning vital water saving tips.

AWARDS

In November 2012, SAICE's Water Engineering Division presented Tara with a Gold Medal in the Special Category of Water Engineering for her project *Every Drop Counts*, which she had exhibited at the 2012 Expo for Young Scientists. Tara

says that she is proud to have received this acknowledgement and is honoured to have received this award from the South African Institution of Civil Engineering. "It was a wonderful opportunity to present my water project *Every Drop Counts* to the SAICE President, Dr Martin van Veelen, SAICE CEO, Manglin Pillay, the Committee Members of SAICE's Water Engineering Division, as well as teachers and parents who were present. It was an experience that I will never forget."

In addition, at the Eskom Expo for Young Scientists Regional Finals 2012, Tara received a Gold Medal and a field trip to job-shadow a scientist from the East London Museum. Tara was also the winner of the first prize in a Water Game com-

petition held by the Department of Water Affairs, where she was awarded a prize of a R1 000 and a trip to the National Youth Summit held in Johannesburg in June 2012.

The Department of Water Affairs' theme for National Water Week 2013

(18–24 March) was 'Water is life – Respect it, Conserve it, Enjoy it'. Tara Schwulst, a remarkable young water ambassador has contributed by creating an awareness to protect one of South Africa's most valuable resources. ■



Tara Schwulst gives an overview of her water board game *Every Drop Counts*



Tara Schwulst receives a gold medal from SAICE President 2012, Dr Martin van Veelen, for her project *Every Drop Counts*

Source:

http://www.saice.org.za/downloads/monthly_publications/2013/2013-Civil-Engineering-June/#/0