

PRESS RELEASE

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PENPLAY WHARTELS EDTECH INNOVATION CHANGES HOW MATHS IS TAUGHT

Various studies and statistics show that South African learners struggle with maths and have poor maths results. This has led to experts believing that maths is in crisis as it is a gateway subject for higher education and career options which are vital for any country's economic development and growth.

The Technology Innovation Agency (TIA), an entity of the Department of Science and Innovation (DSI) launched PENPLAY's Whartels *Let's Really Play Maths* franchise on Thursday 29 March. The Whartels EdTech was funded and supported by TIA. The launch included a demonstration of the Whartels™ learning technology.

The technology was developed by Dr Petro Erasmus with support from the TIA SEED Fund through the North West University – Innovation and Technology office. Based on her research, Dr Petro Erasmus created Maths Whartels to improve students' maths achievement. It includes techniques used in play therapy, such as board games, as well as an app, to optimise learning and understanding.

The WHARTELS™ content, board games, and puppets engage children to improve cognitive learning skills in creativity, literacy, numeracy, and emotional intelligence. By using the newest technology, the programme aims to facilitate self-directed learning by changing the learner's mathematical mindset by including principles used in play therapy to optimise learning and understanding.

“In maths we believe everybody has a maths story and not all maths stories have a happy ending. My research started with Grade 3-5 children in peri-urban and rural schools to see what could be done differently to change maths stories. We found that language was not the problem, while it was a factor, there was more to it. In my PhD, we then started looking at the predictors of maths achievement and we found that study orientation, maths anxiety, emotional intelligence, resilience and coping strategies were crucial factors,” said Dr Petro Erasmus, creator of the PENPlay Whartels Programme.

To develop the programme, we relied on the power of play. We are adding on virtual and augmented reality and apps that people can download. The dream is to be able to expand the program so that we can train and empower communities who have no access to therapists, skilled teachers, or facilities to run their own Whartels centres. While doing this, they can keep the kids off the streets and help develop the innovation skills so that South Africa can create the solutions the world needs,” she concludes.

The EdTech element of the Whartels programme will have a vital data generation back-end that will track the progress of each child who uses the program. This data can then be tracked and collected by parents, principals the Department of Education and any role player with an interest in the progression of maths development.

Dr Janine Chantson, Chief Director Technology Transfer and Innovation Support at North West University congratulated Dr Erasmus. “Dr Erasmus has been able to develop intellectual property in the form of copyright and trademark. As an innovator, Dr Erasmus has done very well in finding co-development partners, test cases in her practice and in the schools she works with. It has been a pleasure to watch the idea grow into an innovation that will grow into a sustainable business while making an impact to South Africa and the world.

“TIA is very proud of the work that Dr Erasmus has done. This is a solution that will help us deal with a number of challenges our country faces. One of the things our science, technology and innovation system requires is graduates in maths and science who, in future, can develop various solutions that will address our societal challenges. Today is not just about celebrating this innovation but to celebrate a solution to one of our country’s deepest challenges, the performance of our students in maths and science. This innovation is in the broader context of a challenge that everybody in government and society is worried about, says Mr Patrick Krappie, Acting CEO of TIA.

“Solutions that make a great impact do not always need vast amounts of money to develop but they require human ingenuity to take the little we have to produce impactful solutions. The funding that Dr Erasmus received from TIA was small, but what she has produced with that funding is amazing. We would like to also acknowledge the partners who have supported Dr Erasmus in the journey of developing this solution, including the North West University, MINDMUZIK, Loughborough University. This is a South African innovation that has found application in markets in the developed world,” he concluded.

The programme is currently available in Setswana and English, with the aim for it to be available in all the South African official languages.

Ends.

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About TIA

The Technology Innovation Agency (TIA) is a public entity in South Africa that serves as the key institutional intervention to bridge the innovation chasm (gap) between research and development from higher education institutions, science councils, public entities, and private sector, and commercialisation (beneficiation). TIA was established in 2010 and has a national reach with offices in KwaZulu Natal, Western Cape and Gauteng. The main thrust of the mandate of TIA is funding and supporting innovative technologies that show potential to be commercialised. The organisation also has programmes that provide non-financial support to innovators and SMMEs. Lastly, TIA is a catalyst and enabler of innovation through various partnership initiatives locally, in the African continent and globally.

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