

NEWS RELEASE

From numbers to narratives: UP students transform statistics class into innovative storybook



Ground-breaking book by UP Statistics Department presents statistics-based fables in storybook form

PRETORIA - The University of Pretoria (UP) is leading the charge in taking traditional teaching and learning methods to new heights, through an innovative book of statistics-based fictional fables written by undergraduate statistics students.

Fiction and Fable: Tales of Time-Series was spearheaded by Prof Johan Ferreira of the UP Department of Statistics in the Faculty of Natural and Agricultural Sciences, and edited by Prof Ferreira and his colleague Dr Seite Makgai.

What started as an attempt to keep third-year statistics students engaged during the pandemic has resulted in a short story anthology capturing ideas and concepts taught in a time series analysis class through creative writing.

The book has an added layer of creativity through artwork by renowned illustrator Michelle Pinto.

The students' contributions, explored through fictional narratives, promote storytelling as an effective teaching and learning tool within analytical sciences. In addition to stimulating peer learning, the anthology offers an alternative and less stressful approach to teaching and learning.

Prof Ferreira said the book was borne out of an idea to keep students interested and focused, and has become an unintended but positive outcome of the COVID-19 pandemic: "It was a challenging time just after the pandemic. Everybody was glued to their screens, and my sense was that students were exhausted from maintaining interest and focus across a wide range of continuing academic expectations," he said.

A conversation with his botanist partner, who told him a story made up of plant characters, was his lightbulb moment. "That created the spark to think: what if I can get my students to do the same? In this way, it might spark a different train of thought when it comes to statistical thinking. To be honest, I think many, if not most, academics were feeling the same way."

Prof Ferreira then presented his concept to a third-year mainstream statistics module group comprising 300 students.

And since the storytelling exercise was optional, he was elated that he received over 30 submissions.

"Reception of the concept is two-fold: the concept as perceived by students who contributed stories, and also reception by students who are in enrolled in the course now and reading the stories as an additional learning or creative resource," he added.

At the launch of the book at UP's Hatfield Campus recently, Prof Delia North, former Dean of Science at the University of KwaZulu-Natal and a stalwart in statistics education in South Africa, said: "This book comes at the precise moment in time when academic statisticians are challenged to think of new and novel ways to advocate for their discipline. I have no knowledge of any other similar statistics storybook being written – the editors should really be considered true visionaries in the field of statistics education."

Publication of the book was never the initial goal, Prof Ferreira said. "It was the product of the organic development of the overarching project which is now yielding incredible intellectual fruits."

But once the potential was realised, it was all systems go.

"It took a few months to edit the submitted works, after which the entire submission entered a peer-review phase; therefore, the volume has been completely peer-reviewed by experts in both the statistical pedagogy field as well as within creative writing. After this, it took a few months for illustrations to be done, because each illustration is unique to the story it accompanies," Prof Ferreira said.

And there was a clear plan for what the book hoped to achieve.

"It is essential to continuously reassess and reinvent different learning strategies and experiences for an evolving student body. Our main aim was to improve and supplement student learning with a newly developed teaching resource. In addition, to inspire students to take ownership of their learning in a creative way and to see how their own educational experience could be supported through informal and project-based peer learning."

So positive have the responses to the book been, that there have been calls for translations into other South African languages.

"Imagine having such a storybook available in Sepedi – a first for statistics, and at a level of value for primary, secondary, and tertiary students."

Prof Ferreira added there were no plans to release a new iteration of the book.

“We want to implement it as a teaching resource and evaluate its impact. Fortunately, the book is available free online and is aimed at any curious minds about statistics, whether it’s current tertiary students – at UP or any other university – or school learners. There might be some concepts in the stories which are module-based, but we believe in the same way one ‘imagines’ a unicorn in other stories, one can ‘imagine’ an autoregressive process as a character without impeding the enjoyment and alternative writing style of short stories such as these.”

Fiction and Fable: Tales of Time-Series is available for free download [here](#). Visit the [ESI Press website](#) for more information.

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Media enquiries can be directed to Mr Sashlin Girraj - Public Relations & Events Manager

Email: sashlin.girraj@up.ac.za | Cell: +27(0)72 447 3784

ABOUT THE UNIVERSITY OF PRETORIA

The University of Pretoria (UP) is one of the largest contact and residential universities in South Africa, with its administration offices located on its Hatfield Campus in Pretoria. This 115-year-old institution is also one of the largest producers of research in South Africa.

Spread over seven campuses, it has nine faculties and a business school, the Gordon Institute of Business Science (GIBS). It is the only university in the country with a Faculty of Veterinary Science, which is ranked the best in Africa. UP has 120 academic departments and 92 centres and institutes, accommodating more than 56 000 students and offering about 1 100 study programmes. It has the most academic staff with PhDs (70%), NRF-rated researchers (613).

The [2024 Times Higher Education subject rankings](#) placed UP first in South Africa in the fields of Law, Veterinary Science, Accounting and Finance; Agriculture and Forestry and Electrical and Electronic Engineering. Quacquarelli Symonds (QS) ranked the University among the top five in Africa, as part of their [2024 World University Rankings \(WUR\)](#). UP was the only South African university featured in the [2023 World University Rankings for Innovation \(WURI\)](#), falling within in the 101-200 range of innovative universities.

For more information, please go to www.up.ac.za