

# Vijay Reddy:

## 20 years of pushing boundaries



In high school, Vijay Reddy faced a trigonometry problem that she struggled to solve. She remembers spending hours building models out of ice-cream sticks until she cracked the problem. With parents and a grandfather who were deeply committed to education, she already saw problems as challenges to be overcome, a perspective that has driven her throughout her career. Spanning her 20-year career at the HSRC, Reddy spoke to **Andrea Teagle** about her contributions to studies in education, skills planning and the public relationship with science.

Early in her career, Vijay Reddy joined a non-governmental organisation committed to improving mathematics and science education in South Africa. With several years of experience as a school teacher, a recent master's degree in science education, and a belief in the ability of mathematics to create opportunities for individuals, she began to work with teachers in different parts of the country.

"It was an enlightening experience because I got to travel to remote areas and see the different contexts of South Africa in the 1980s," she recalls. At the time, apartheid laws enforced inferior education for black children, and Reddy and her colleagues had to devise ways to undertake their teacher training discreetly.

"I was interested in teaching and learning science," Reddy recalls, "but then realised that if you have big classes, poor infrastructure, no resources, and hungry children, they're not going to be able to learn. Seeing the whole picture was an education for me. It's not just about the science – to understand how to teach and learn science you must also understand the political economy around education."

### A tale of two education systems

After working in the NGO sector, Reddy became a college and university lecturer. She joined the HSRC in 2002. Since then, she has held the positions of research director, executive director and distinguished research specialist. Arriving at the HSRC from a university environment, Reddy was intrigued by the work happening at the research-policy nexus. It was a time when the country was trying to formulate policies that responded to the twin imperatives of participating in the global agenda and responding to local development challenges, Reddy says. She recalls vibrant discussions with colleagues from other research disciplines, early attempts to respond to social challenges through a holistic, multidisciplinary lens.



Commitment to education has been a through-thread of Vijay Reddy's varied career. "Working in the education field, I felt my accountability to the school child I met in rural areas navigating multiple deprivations," she says. "The ultimate goal for that child was to move out of intergenerational poverty and map a different life trajectory."

**Photo:** HSRC

In 2003, Reddy led the Trends in International Mathematics and Science Study (TIMSS) in South Africa. As the only study to provide robust trend achievement estimates, TIMSS is an important indicator of the health of South Africa's education system.

In its early years of participation, the country was constantly bottom of the log.

But this was not the only story to tell. "As a researcher, you've got to look deep," Reddy emphasises. "How do you tell the many stories that emerge? What's the analytical lens through which to look at the data?"

In their analysis of TIMSS 2003, Reddy and her team at the HSRC revealed that South Africa's academic performance cannot only be conveyed by a single national score, but rather requires an appropriate demographic breakdown. They considered factors such as home and school socio-economic status, the apartheid racial classifications of schools and gender.

In 2004, they reported that the educational outcomes of learners reflect South Africa's extensive societal and school disparities. The substantial variance in mathematics scores highlighted two education systems persistently operating at different levels of effectiveness and perpetuating existing inequalities.

"This characterisation continues to this day," says Reddy.

### **Equity and excellence in education**

Since 2003, South Africa's school performance has gradually improved, with TIMSS recording increases in the average mathematics and science scores between 2003 and 2019. However, Reddy acknowledges that there is still much work to be done to achieve a level of education that can respond to the needs of our society and the economy.

Reddy emphasises that striving for excellence in education should also be a priority in South Africa. Understandably, South Africa has traditionally focused on equity. But, she says, equity and excellence are two sides of the same coin. "We've seen that if you don't focus on both, the system will not show the desired improvements. It's the same with the labour market – we need to focus on both the employed and the unemployed workers."

### **Skills planning mechanism for South Africa**

In 2014, Reddy and her colleagues supported the government to build a skills planning mechanism to tackle the mismatch between skills demand and supply in South Africa.

The aim of the Labour Market Intelligence Partnership (LMIP) was to provide labour analyses that could align the country's economic and industrial priorities with education and training outputs. The LMIP was unique in the nature of the collaboration between the government and the research community, as well as in scale and scope. "It was a learning experience for both on how to navigate the research-policy nexus," Reddy recalls.

Reddy led the LMIP project by accident rather than design. But, she had the right people on her team: six experts leading each of the research themes. And, unexpectedly, she found that her background in organic chemistry helped her to see the problem of how to build a skills planning mechanism in a new light.

"Traditionally, we focused on skills development. Skills planning required first considering the nature and trajectory of the economy and then identifying the skills that were required. In the context of South Africa, it was essential to consider the skill needs of both the employed and unemployed," Reddy says.

### **A science-literate and science-aware society**

While Reddy is committed to improving the school mathematics and science knowledge, she is also invested in democratising science information to all sectors of the population. In the last 15 years, she has engaged in the global research agenda of understanding the knowledge, views and attitudes of the public towards science and technology.

The passing of the [White Paper on Science, Technology, and Innovation](#) signalled South Africa's commitment to fostering a science-literate and science-aware society. This goal gained even greater significance in the wake of the COVID-19 pandemic.

Since 2020, Reddy has led the HSRC in collaboration with the Department of Science and Innovation to develop a survey that measures public attitudes towards science and technology. Having successfully completed data collection, the team is now working on the first-ever South African Public Relationship with Science Study, an important step to realising the vision of a science-literate society.

This is also the year that, after 20 years of groundbreaking research contributions, Reddy steps down from her full-time position at the HSRC. She hopes that she has contributed meaningfully to the skills and education landscape by enhancing research skills (especially in quantitative data), institutionalising HSRC research in government policy, and emphasising the importance of continuously seeking new insights and striving for excellence in research.

Further reading: [TIMSS in South Africa: Making Global Research Locally Meaningful](#)

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With a doctoral degree in organic chemistry and extensive experience in social science research, Vijay Reddy has always been drawn to transdisciplinary thinking – trying to understand social issues in a holistic way. “When people ask, ‘Are you a quantitative or qualitative researcher?’ I think it’s a non-question. My response is always that doesn’t matter. What is it you want to know? Your question matters.”

**Photo:** HSRC