Gill Marcus: Why education is important to the South African Reserve Bank

Address by Ms Gill Marcus, Governor of the South African Reserve Bank, at the Partners in Performance 2012 Celebration Lunch at the Maths Centre, Braamfontein, 12 October 2012.

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Good morning to the Board of Trustees, the partners, donors, members and friends of the Maths Centre for Professional Teachers.

It gives me great pleasure to be here today. This is an institution whose work I have long admired, ever since I came to know its Executive Director, Ms. Sharanjeet Shan during my tenure at the Gordon Institute of Business Science.

In my opinion, both Sharanjeet and her team are wonderful examples of what can be achieved when a small group of committed people sets out to make a difference in the world.

From its humble beginnings in 1985, when it was only a very small outreach project run from Auckland Park school under the directorship of Mrs. Patchitt, the Centre has done extraordinary work to grow to the impressive organisation that it is today; one that is making a clear and important difference to the teaching, learning and understanding of Maths, Science, Technology and even entrepreneurship in the country.

Without question, all of us are stakeholders in the outcomes of the South African education system. While the Maths Centre and other NGOs may work more directly in it and on it on a daily basis, as South Africans we see the reports and headlines. We know the statistics and we know the reality. We all know how critical it is to make every effort to steadily fix the education system, and to ensure that NGOs such as the Maths Centre, whose work is outstanding, act in a manner that renders such support.

Why is education important to the South African Reserve Bank? This is not only for all the reasons we are familiar with, but because, as Michael Spence, the recipient of the 2001 Nobel Memorial Prize in Economic Sciences, has noted, “in a world in which knowledge and connectivity are increasingly the basis for value creation, failures in the education system are the surest form of exclusion there is.”

It is also because the Bank, in fulfilling its mandate of price stability, touches the lives of every South African, directly or indirectly, and the greater the financial literacy in a society is, the better the understanding of the economy and the more effective is the inclusion in how society functions.

So bear with me as I revisit some of South Africa’s educational facts and figures with statistics drawn from the National Planning Commission’s work. As the NPC points out, education is one of the Millennium Development Goals. It is also a prominent feature of South Africa’s Constitution. As such, our education system, one which encompasses just over 14 million learners, has received significant attention from government:

- Grade R has been made mandatory for children turning five, resulting in a significant increase in the participation rate of these children. 80.9% were enrolled in 2007 compared to 22.5% in 1996.
- Compulsory education for children aged 7 – 15 has been introduced.
- Almost 6 million learners are fed nationally through the National School Nutrition programme.
- The poorest 40% of our schools are exempt from school fees and have a no fee policy.

- An equalisation of per capita government expenditure between races has been achieved.

But despite this attention, as we all know, and as the NPC Commissioners put it clearly, "the system is grossly underperforming." They go on to say that "several comparative studies show that South Africa's educational outcomes are poorer than many poorer countries. Apart from a small minority of black children who attend former white schools and a small minority of schools performing well in largely black areas, the quality of education received by African learners remains poor. Literacy and numeracy tests are low by African and global standards, despite the fact that government spends about 6% of GDP on education and South Africa's teachers are among the highest paid in the world (in purchasing-power parity terms)".

At the risk of stating the obvious, the causes and symptoms of this systemic underperformance are complex. Sometimes they seem intractable. But it is almost impossible to overstate the consequences since there is a clear relationship between the education that an individual receives and their prospects in life.

Of course, there will always be exceptional individuals who transcend this generally true cause-and-effect relationship; those who, despite their lack of education, make notable successes of their life. Equally, the converse is true; there are many people who, despite all the educational opportunities in the world, never realise their potential.

But for most of us, the relationship between education and success is a reinforcing one, one which starts with our socio-economic prospects at birth. It is these prospects which set the first potential parameters of our lives. They have a significant impact on our cognitive ability in early childhood and on the degree to which the foundations of learning, including our capacity to be numerate and literate, will be successfully laid.

In turn, these early childhood foundations have a direct bearing on our educational performance in our early school years. These early school years then go on to influence our Matric educational achievement. And despite all the limitations of a Matric qualification, it was for most of us the key determinant of our ultimate educational achievement. It still is.

Finally, more than any other factor, it is the quality of our educational achievement that ultimately affects our labour market performance, not least because it is a large determinant of whether we will be able to enter the job market at all.

And from there, the cycle continues because our ability to enter the labour market – or not – then goes on determine the socio-economic situation of our own children.

This inter-dependency between many causal factors is something that we ignore at our peril. This critical early phase is also one that we too often overlook in our relentless focus on pass rates and one pass rate at that, namely Matric exam results. This focus, while important, occurs far too late in the learning cycle of a child.

Without question, Matric results are the obvious and critical ones to measure and assess ourselves against. It is simply unacceptable that we have such poor matric results in such an unacceptably high number of South African public schools. It is wholly without justification that our statistics show that of our university graduates, only 22% of 60 000 students graduated within the specified number of years. With the result that, to use Heather Dugmore's words, our universities "become playgrounds for those who completed a sub-standard matric (instead of) places of higher education established to nurture top academic skills"

But, as Professor Ruksana Osman, Head of the Wits School of Education pointed out so correctly:

"To look at the end result, Matric, and declare the public education system is failing without attending to the issues in early learning gives us a distorted picture of the schooling system as a whole." She makes it clear that she is arguing "for looking at the teaching and learning

input from the earliest stage of schooling and not just the final output of schooling – the matric examination results."

This same point has been made by many others and I could not agree more. We need to be looking at the whole cycle and many indicators of success or signs of failure. We need to be broadening our definition of success to extend beyond just university degrees as an indicator and enabler of skills.

Of the experts who have made this point are Mary Metcalfe, Mark Orkin and Jennie Glennie. In a newspaper article earlier this year, succinctly titled "Our pass rate focus is too narrow", they outlined three critical additional indicators of success for education.

The first is retention. In other words, are learners staying in school for a reasonable amount of time? This is not to say that all learners must, or will, finish 12 years of schooling. While this is unquestionably the ideal, the reality will always fall short. But how far does the reality fall short and for how many learners? Any situation where significant numbers of learners are leaving the schools system at a point before which they have a fundamental and critical mass of skill, cannot consider itself successful.

The second is quality. Again, this is a self-evident and common sense indicator; one that speaks of meaningful teaching and learning and reasonable proportions of good and excellent marks within a framework of high standards. Access to education is of minimal benefit if the quality of that education is at best only marginally better than no education at all.

The third additional indicator of success, over and above Matric pass rates, is equity. When education provides social mobility across issues such as gender, race, income and / or geography, it can be judged to be successful. When a lack of equity entrenches, rather than transcends, social patterns, the opposite is clearly true.

Within this cycle of interdependence, and the debates around what successful education really looks like, quality Maths skills are critical – both as ends in and of themselves as well as means to various ends. In the same article I referred to earlier, Mary Metcalfe and her co-authors called Maths results "the litmus test of system quality for the needs of a modern economy."

And once again, the results of our litmus test are deeply troubling. While it is true that South Africa's Maths pass rates have remained unchanged over the past few years, given that the number of candidates writing Matric Maths has declined, i.e. the denominator has decreased, basic Maths tells us that the numerator must have decreased too for this ratio to have remained constant. And this is precisely the case.

The number of maths passes at the 40%-plus level were down from 85 000 to 67 000 for the period 2009 to 2011. Consequently, we have 18 000 fewer matriculants able to enter university programmes requiring this level. This decrease is compounded by marked differences between the provinces.

While the pass rates of 27% in Limpopo and 20% in the Eastern Cape are deeply concerning, there is scant consolation to be had from looking at the best performing areas; only 54% of learners in the Western Cape achieved Maths passes at the 40% plus level compared to 45% in Gauteng.

In defence of Limpopo and the Eastern Cape, however, it should be noted that 47% and 58% of matric candidates, respectively, at least attempted maths. In the Western Cape and Gauteng, however, it was only 35% and 38%.

So, as with many things in life, the first and seemingly obvious problem we are presented with is not always the right problem and / or the only problem.

Maths results are a litmus test not only because of the usefulness of maths skills in and of themselves but because such skills help develop a number of integrated thinking skills that

are needed, today more than ever, to navigate a complex and changing world. Of course, maths is not the only thing that develops such integrated and integrative skills but it certainly helps lay a foundation.

The first of these is creative thinking skills. While it may not seem so to many learners attempting to tackle an impenetrable calculus or algebra exam question, Maths really does help develop creative thinking skills, i.e. the ability to make connections between concepts and ideas that seem unconnected and unrelated.

It was Steve Jobs, the founder of Apple, who said it best: “Creativity is just connecting things. When you ask creative people how they did something, they feel a little guilty because they didn’t really do it, they just saw something. It seemed obvious to them after a while. That’s because they were able to connect experiences they’ve had and synthesize new things.”

Secondly, maths develops those problem-solving skills that allow people to recognise not only that a problem exists but also to be clear on what the right problem is, and, from there, to devise appropriate means of resolving it. This is a skill that is much more difficult than it sounds. Not least because there is a marked difference between the complex problems of real life and the exercises we get presented with in text books.

Thirdly, maths helps develop decision-making skills, i.e. the capacity and competence to weigh up options and trade-offs between alternatives and, in the face of them, to make the best decision you can, at the time that you have to, with the information that you have.

Finally, it helps develop the visualisation skills that allow us to imagine how things work – or could work – by looking at drawings, sketches or schematics.

These integrative and holistic thinking skills are the ones that, at precisely the time we need them the most, are in chronically short supply. Not least because, in a world irrevocably changed by technology, we all too often fall into the trap of confusing instant access to almost infinite information with knowledge itself.

Clearly, information and knowledge are very different. Just as real education is very different from much of the education that gets offered up. Real education is not the rote learning of facts that many of us were subjected to. Instead, it is the development of all our latent abilities. Similarly, real education concerns itself less with teaching us ***what*** to think and more with teaching us ***how*** to think.

With these kinds of pressures facing all of us, the Reserve Bank is as subject as any other institution to the pressure to find positive ways to contribute and meaningfully enhance the capacity of our country.

As part of our assessing our impact on stakeholders, the Bank recently concluded an extensive corporate reputation study. It was the first of its kind that we had undertaken and helped us to understand how we are perceived by our stakeholders, what the key drivers of our overall reputation are and what critical improvement areas and areas of strength we should address or leverage to further build our reputation. With the baseline now in place, we will be able to measure our progress as we proceed.

The results of the survey were overwhelmingly positive, with the Bank considered highly respected and credible. It was clear that our stakeholders trust and respect us. However, their feedback also made the important point that the excellence that they see in us also imposes additional obligations on us. Specifically, stakeholders want and need us to engage even further with those parts of our society that are facing the most challenges, specifically education and the development of our youth.

This feedback was very much in line with what the leadership of the Bank wanted to achieve. We had recognised the need to be more engaging with society and our stakeholders, and as part of a number of initiatives had taken a long, hard look at our Corporate Social Investment (CSI) policy.

Of course CSI is only a small component of a company's overall Corporate Social Responsibility. In the description offered by the World Economic Forum, Corporate Social Responsibility is "the entire contribution that a company makes to society through its core business activities, its social investment and philanthropy programmes and its engagement in public policy."

In the context of the current financial crisis, fundamental questions are being asked of central banks around the world. These questions go to the heart of our Corporate Social Responsibility. What is the role that central banks should have played in averting the crisis? What is the role we should play going forward? What is our contribution to society and to public policy? What should it be?

As with education, these are complex, and in some quarters, contested issues. But as these debates continue, one of our responses at the SARB has been to institute a new Corporate Social Investment strategy based on four principles.

First of these principles was that the Bank's CSI policy and activities should be ***informed***. In other words, our funding and partnership decisions should be grounded in research, benchmarking and an understanding of the legislative and other imperatives that underpin the South African CSI environment, one in which billions are spent every year. Education and skills development are universally accepted to be one of the key challenges facing South Africa. It is therefore a critical area for support and investment, not only when it comes to filling the Bank's needs for skilled and trained employees but also for meeting the many challenges South Africa faces.

Secondly, they should be ***meaningful***. We want to ensure that whatever activities the Bank engages in are undertaken in such way that there is a real investment of effort and commitment from our side. This will not only maximise benefit for the Bank but also for partner organisations and, by extension, for society as a whole. Given the Bank's unique role in the country, as well as its strong base as an institution of knowledge and research, it has a unique opportunity to add considerable value to many organisations, especially those working in education.

Critically too, our activities should be ***partner orientated***. We were adamant that the Bank should not seek to "reinvent the wheel". Instead, it should focus on finding examples of best practice organisations and initiatives and partner with them. As and where the Bank does initiate something on its own, this would be the exception rather than the rule and only where a unique opportunity, one which by definition only we can fill, presents itself.

Finally, we agreed that our CSI efforts should be ***aligned***. In other words, we needed to be clear that the Bank's CSI policy should be congruent with the Bank's role as the central bank of the country, its strategy and its values. Our consequent focus on education is not only aligned with the Bank's culture but also with its strategy, one which sees the Bank increasingly positioning itself as a knowledge institution with domestic and international stakeholders.

Within our educational focus, there are a number of initiatives that we are very proud of as the Bank. These include our partnerships with three of the country's universities – Rhodes, WITS and Pretoria.

The partnerships with the Centre for Economic Journalism at Rhodes and WITS Journalism were motivated by the recognition that the Bank should seek to actively play a role in improving the level of economics journalism in the country. Monetary policy is a complex subject and it became of increasing concern a few years ago that the reasoning behind our decisions was not always sufficiently understood by the journalists who communicated them to the broader public.

Our work with the Chair of Monetary Policy Economics at the University of Pretoria also aims to deepen the understanding of, and research into, the subject and to develop capacity in the field in South Africa and the continent.

Our relationship with the South African Institute of Chartered Accountants is also one that we think is an important one given that we are working together to find, and nurture, talented up-and-coming learners.

At the same time, the generous bursaries that we give to talented students literally provide the potential to change the course of such student's lives.

But the project that we are particularly excited by this year is the pilot MPC Challenge which was initiated at the end of 2010. The Challenge was run in conjunction with the Gauteng Department of Education and modelled on initiatives run by other central banks around the world, including the Bank of England and the Reserve Bank of New Zealand.

The aim of the challenge was threefold. Firstly, to increase understanding in South African schools of the role played by monetary policy and of economics. Secondly, to build relationships between the Reserve Bank, schools and learners and, thirdly, to get learners and schools excited about the subject of economics.

Eighty three schools from across the province were chosen to participate in the inaugural challenge. The initial selection of schools was done having reviewed all Gauteng schools' 2011 Matric Economics results. Only schools that received at least a 90% pass rate were invited into the inaugural challenge and invited schools represented all income quintiles and districts.

The 56 schools that finally entered needed to select a team of between four and five Matric Economics learners. These teams were given data from the Bank's Research Department to interrogate over the course of a few weeks in May and June. At the conclusion of the analysis period, each team then submitted a 1000 word essay to the Bank. Team essays followed the same format as the Bank's Monetary Policy Statement, i.e. analysed local and global conditions and concluded with a decision as to what the country's repo rate should be.

Reserve Bank economists went through the initial essays and choose 5 finalist teams, who were then invited back to present to members of the Bank's Monetary Policy Committee (MPC). The months of hard work by both Bank staff and learners and schools culminated on the 7th of August at a function at the Bank where Krugersdorp High School's team were announced as the winners of the inaugural challenge. Both the team and the schools received cash prizes, the winning teacher a laptop and the team also became eligible for Reserve Bank bursaries.

If you don't remember the 7th of August, let me jog your memory by saying that it was the day that it snowed in Gauteng. Members of the Bank's MPC Challenge team are still convinced that this is less to do with meteorological conditions and more to do with the fact that the walls of the Bank's Conference Centre auditorium were resounding to the sound of The Black-Eyed Peas' "I gotta feeling" as part of the winners announcement and celebrations. For those of you who know central banks, this is about as common as snow on the Highveld.

The team's final prize was to come to the Bank on the 20th of September with their teacher and school principal, as my guests, to be present at the live MPC decision announcement to the media. They then joined members of the MPC at a small function hosted in their honour afterwards.

The challenge really offered a wonderful opportunity to Matric Economics learners and their teachers to make a very abstract subject come alive; to step into the shoes of the Bank's Monetary Policy Committee and become central bankers for a few weeks and to be exposed to opportunities that might never have occurred to them otherwise.

In this regard, Matthew Lester, a member of the winning team from Krugersdorp High School, made an indelible impression on me and all the judges of the MPC Challenge at the function after the MPC statement. In response to the question "What are you going to do after school?" he quite calmly and confidently informed us that he was going to study economics. While we were all nodding our approval, Matthew followed this up by pointing at

Brian Kahn, my special advisor, and announcing that, once he finished his studies he was "going to join the Bank and then take ***his*** job."

The feedback from the Gauteng Department of Education, learners, teachers and the Bank's members of staff who were involved was overwhelmingly positive; so much so that it was clear that we needed to continue with the Challenge and to take it further. How to do this most successfully is being considered at the moment and we look forward to announcing further details as soon as all necessary requirements are finalised.

In conclusion, the words of one of the Gauteng Department of Education subject advisers we worked with on the MPC Challenge bear repeating and remembering by all of us. As she said it, "it's not about how much we pour into learners but how much we plant". A more feminine version perhaps of the Greek historian Plutarch's wise admonition that "the mind is not a vessel to be filled but a fire to be lit."

Whichever way you say it though, the need to inspire and act was as true 2000 years ago in ancient Rome as it is in the world of the 21st century. It is as true for the Maths Centre as it is for the Reserve Bank. And it is as true when we work outside our respective organisations with our stakeholders as it is when we work within the boundaries of our organisation with each other.

So, as we all navigate extremely challenging times – ones that show no sign of ending soon – may we all work together to contribute to fixing the education system, to plant seeds of hope and opportunity and to light fires of commitment and ability. Only then will we truly be able to deliver on the potential that South Africa holds.

Thank you.

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