HSRC Human Sciences Research Council

policy brief

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February 2015

Improving learner achievement in South Africa: A policy proposition for a growth mindset approach to enhance learner support at basic education level

Executive summary

Knowledge of conventional factors influencing learner achievement mainly focuses on tangible factors, such as school resources, teachers' qualifications and experience, class size and language of instruction. Non-conventional factors, such as aspirations, expectations and motivation, are also found to be crucial in driving learner achievement, but have received minimal attention in South Africa's educational policy and practice. In this policy brief, we provide research evidence indicating the need to include these non-conventional factors in policy decisions to improve learning outcomes. We specifically advocate the integration of the 'growth mind-set approach' into current education policy, in order to yield better returns on our educational investment. We suggest that this integration be carried out through professional development programmes at national, provincial and district levels, so that in the near future, current teachers and those entering the teaching profession will have the capability to employ this approach in their teaching practices.

Existing evidence of a motivational model for achievement

Since the 1980s, education-focused research on aspirations, expectations and motivation has expanded significantly. There is now abundant literature supporting the importance of motivation on learner achievement (Fouts 2003; Lee & Shute 2010; Marzano 2003). Unfortunately, these research studies are routinely conducted outside the context of developing countries. The literature referring to 'developing countries' or 'the third world' usually remains limited to a discussion of conventional tangible, observable and

measurable factors, such as school infrastructure and teacher qualifications.

There is general agreement that the literature on school effectiveness on learner achievement focuses on factors at different levels that influence learner achievement. These include home, teacher/classroom, and school factors. Aspirations, expectations and motivation can be channelled through all these levels and exert a cumulative impact. This includes parents' aspirations, teachers' and schools' expectations, and pressure to achieve. Among the factors at home, generally examined under the umbrella of socioeconomic status (SES) factors, home atmosphere has been found to correlate most strongly with achievement (33%, compared with other home factors such as parental education level, 3%; occupation, 4%; and income, 10%) (Marzano 2003). In particular, parental expectations/aspirations are found to be more strongly correlated than other aspects of parental involvement, including, for example, communication and homework supervision (Fouts 2003; Lee & Shute 2010; Marzano 2003).

Teachers' expectations are intertwined with school expectations and pressure to achieve. In their literature review, Lee and Shute (2010) report a significant correlation between academic emphasis (the extent to which a school commits itself to improving achievement) and achievement, and list academic emphasis as the most influential school climate factor (other factors examined include resource allocation, principal influence, teacher morale, engaged teachers, and closeness among faculty). Lee and Shute (2010) also found academic emphasis to contribute to about 50% of between-school variance. Marzano's (2003) synthesis of research findings from studies over the past 40 years has found that peer influence (peer support, peer achievement) stands out as another influential factor within the school environment, accounting for an average of 15% of the variance in achievement.

In recent years, the publication of *Mindset: The New Psychology of Success* (Dweck 2006) has further fuelled discussion on the significance of motivational models on learning, differentiating between fixed and growth mindsets.

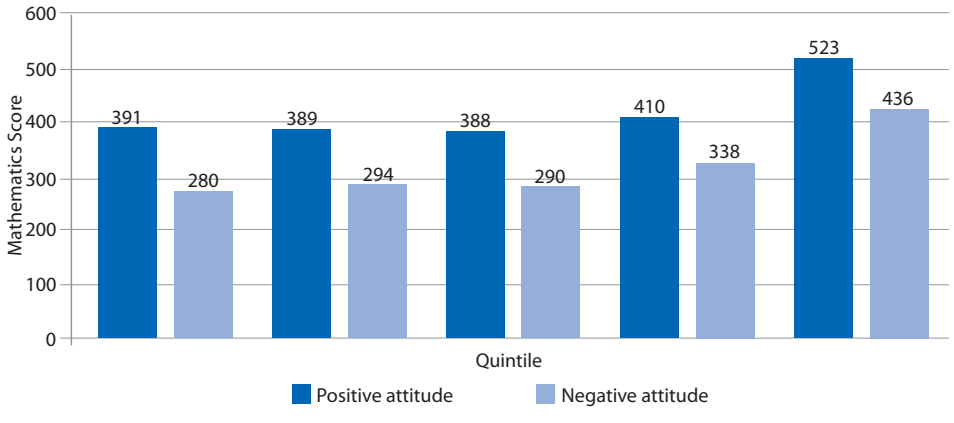
> In a fixed mindset students believe their basic abilities, their intelligence, their talents, are just fixed traits. They have a certain amount and that's that, and then their goal becomes to look smart all the time and never look dumb. In a growth mindset students understand that their talents and abilities can be developed through effort, good teaching and persistence. They don't necessarily think everyone's the same or anyone can be Einstein, but they believe everyone can get smarter if they work at it (Morehead 2012).

However, in South Africa, the literature on school effectiveness on learner achievement has largely ignored this dimension. Among the few studies that have included a number of tangible and intangible variables, Winnaar and Frempong (2013), using South African data from the 2011 Trends in International Mathematics and Science Study (TIMSS), demonstrate that Grade 9 learners who are most successful in mathematics tend to like and value mathematics and are confident in learning mathematics (see Figure 1). The figure shows that this impact is significant, irrespective of a school's poverty quintile, but the effect is particularly prominent in schools in the poorest neighbourhoods (Quintile 1 schools). Within these schools, learners with positive attitudes tend to score, on average, 110 points (over a standard deviation which is set at 100 internationally) higher than those with a negative attitude.

The motivational model and the growth mindset: Classroom application

The motivational model was pioneered by Dweck. In 2007, she and two colleagues conducted an experiment with 91 Grade 7 learners in New York City from a relatively low-achieving student population, of which 79% were eligible for a free lunch programme (Blackwell et al. 2007). The percentage of students eligible for free lunches is used as an indicator of socioeconomic status. Blackwell et al. taught the experimental group the skills of growth mindset and the control group generic

Figure 1: Learners' attitudes towards mathematics



Source: Winnaar & Frempong (2013)

study skills. In particular, the students in the experimental group were taught that 'everything is hard before it is easy' and that there is no such thing as being dumb. The message given was that as long as one is willing to work hard, one will finally master something. With eight periods of 25-minute growth mindset training (once a week), the majority of students from the experimental group managed to reverse the downward trend that marked the majority of the students in the control group. Both groups had an average mathematics grade of C+ at the start of the year; in the control group this declined over the course of the year to an average of C–, while the experimental group managed to halt this downward trend.

Another notable example of the application of growth mindset is the 'School of Hope' reform of Jefferson County High School, initiated by its principal, Molly Howard, in 1995. Jefferson County High is a school in Tennessee (US) at which 80% of the students are eligible for free and reduced-price lunches. One of the most distinctive changes Howard made was the grading system: she replaced grade D or F with NY (Not Yet). If a learner had worked hard but had still not achieved an acceptable grade, the teacher simply marked NY and encouraged the learner to work harder and to do better. With the expectation that no student is doomed to failure and every student is capable of doing acceptable work, the school's pass rate rose from more than 10% below the state average to more than 10% above the average in three years. The new grade system effectively stopped the students' acceptance of failure (Lile 2008).

Other researchers have examined and experimented with this idea as well. They found that one seemingly paradoxical key component to the success of growth mindset training is to create the expectation of failure. This is central to growth mindset training: reframing failure as a natural part of the change process ultimately brings out optimism. Failing is a part of learning and persisting in the face of failure will eventually bring about success: 'We will struggle, we will fail, we will be knocked down — but throughout, we'll get better, and we'll succeed in the end' (Heath & Heath 2010: 169). According to *The Talent Code* (Coyle 2009), mistakes are actually one essential component of 'deep practice', fundamental to developing any talent.

Conclusion

This motivational model is not a panacea for addressing the complexities of the challenges facing the South African education landscape. Aspirations, expectations and motivation will have to go hand in hand with tangible factors, such as teacher quality, to make any concrete difference. However, the recorded strength of these factors, as well as the cases mentioned above, suggests the need to pay much greater attention to this dimension. As South Africa continues to battle with its poor quality of education and the dire need for capable graduates to help propel its economy forward, the question remains: can we afford not to investigate and invest in this potential tool? More importantly, could South Africa's high investment in education (5% of GDP) and lack of discernible return possibly be the result of an overemphasis on tangible resources and inadequate attention to intangible factors, such as motivation and growth mindset?

Reviewing South Africa's current education policies, it is evident that they aim to improve learning outcomes through measures such as improvements in school resources and in the effectiveness of teachers and principals in carrying out their basic responsibilities in schools. However, the current South African policy document on improving education — Action Plan to 2014: Towards the Realisation of Schooling in 2025 (DBE 2011) – does not include a section on motivation. The questions raised above therefore call for an urgent investigation into the current approach on strategies and policy decisions. Based on research we have outlined in this policy brief, we propose a growth mindset approach to complement resource-based policies, in order to further enhance and support learning. The growth mindset concept offers a concrete pedagogical approach to help learners develop confidence and a culture of success. This is particularly relevant and applicable in the context of a learner-centred approach and a constructive framework of learning, where learning how to retain resilience and motivation in the face of failure is one of the greatest gifts teachers can give to their students. Therefore, a policy directive to explore how this idea could work in South African schools is paramount. We encourage the Department of Basic Education to take the lead in further exploring this approach, as this skill is found to be best learned and practised in the earlier stages of cognitive development.

Recommendations

We recommend the following steps to foster greater attention from policy-makers to propel the process.

1. Include a questionnaire in the South African Annual National Assessment to explore teachers' pedagogical practices intended to motivate learners.
2. Target professional development training for teachers through participatory workshops; encourage teachers to reflect on their motivational practices and the effects of rewarding hard work and progress.
3. Apply this approach in selected schools, particularly those with poor tangible resources and a sizable proportion of students who are

struggling or who have not yet met educational requirements.

4. Debate the potential merit of replacing D or F with NY (Not Yet) in the grading system.
5. Revise current education policies on school improvement to include a substantial section on motivation/mindset.
6. Initiate further studies (especially action research) to interrogate and develop an understanding of how the growth mindset approach could work in South Africa's schooling system.
7. Develop courses, as part of teacher education programmes, to help prospective teachers formulate growth mindset pedagogical strategies.

References

Blackwell L, Trzesniewski K & Dweck C (2007) Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development* 78(1): 246–263

Coyle D (2009) *The talent code*. London: Random House

DBE (Department of Basic Education) (2011) *Action plan to 2014: Towards the realisation of schooling in 2025*. Pretoria: DBE

Dweck CS (2006) *Mindset: The new psychology of success*. New York: Random House

Fouts JT (2003) *A decade of reform: A summary of research findings on classroom, school, and district effectiveness in Washington State*. Research Report, Seattle Pacific University, Washington School Research Center

Heath C & Heath D (2010) *Switch: How to change things when change is hard*. New York: Broadway Books

Lee J & Shute VJ (2010) Personal and socio-contextual factors in K–12 academic performance: An integrative perspective on learner learning. *Educational Psychologist* 45(3): 185–202

Lile SJ (2008) Molly Howard's School of Hope. *Principal Leadership* January 2008. Accessed February 2015, http://www.nassp.org/Portals/0/content/56710.pdf

Marzano RJ (2003) What works in schools: Translating research into action. Alexandria, VA: ASCD

Morehead J (2012) *Stanford University's Carol Dweck on the growth mindset and education*. Accessed February 2015, http://onedublin.org/2012/06/19/stanford-universitys-carol-dweck-on-the-growth-mindset-and-education/

Winnaar L & Frempong G (2013) *Understanding the effect of schools on South African learners: What we know from 2011 TIMSS data*. Paper presented at the 2013 HSRC Social Sciences Conference

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