

Resilient learners in schools serving poor communities

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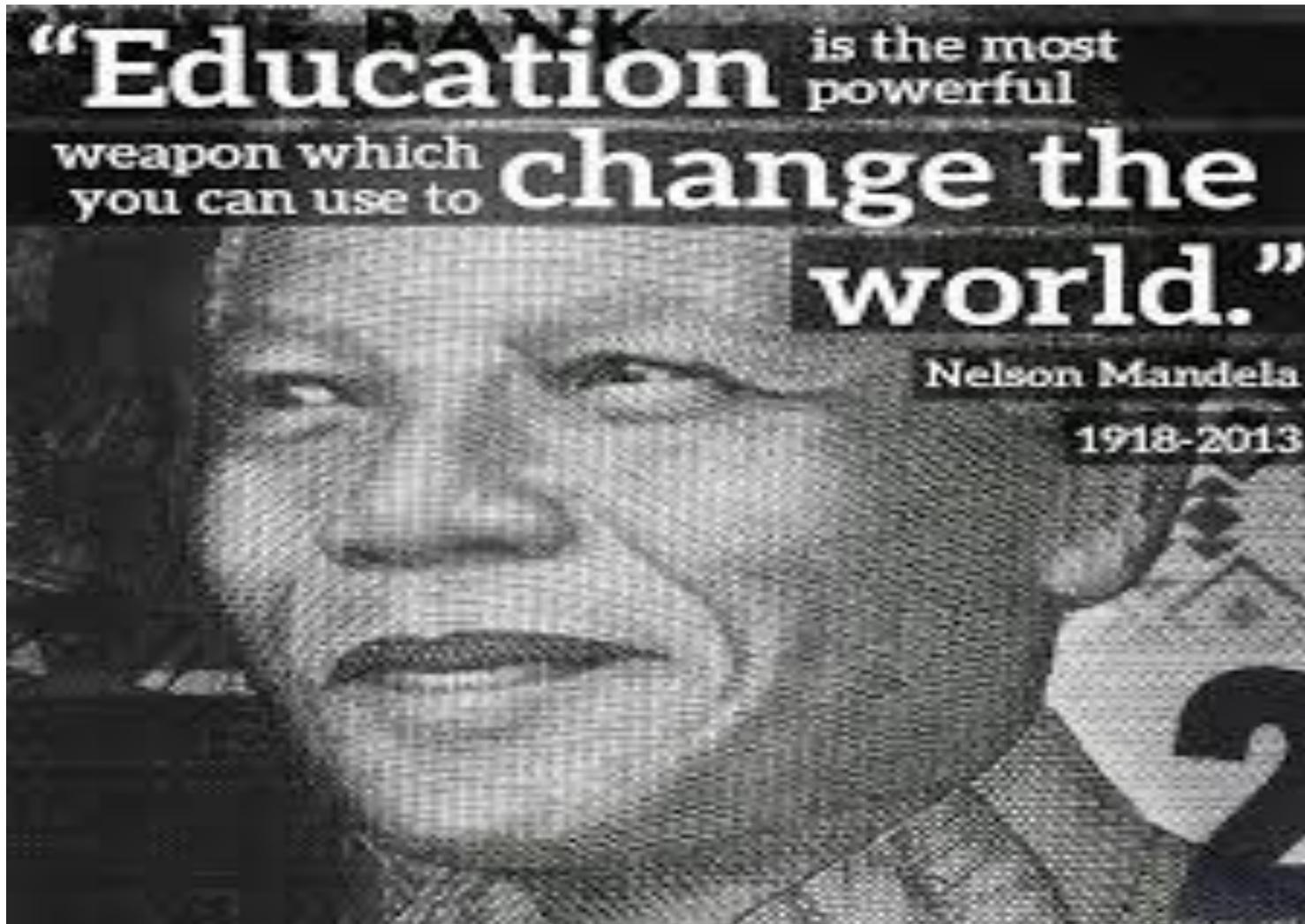


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Background

- Education for All—MDG led to access to education for most children in the developing world.
- Quality of education for most children below expectation
- In most education systems, schools are highly segregated by poverty (most children from poor families attend schools with limited resources)
- In South Africa, quintile and no fees school system design to address this problem

Quality Education Dream



Resilience

- ❖ Most children from poor households attend schools located in poor communities with limited resources (double jeopardy—Frempong & Willms, 2002).
- ❖ Exemplary schools-successful schools serving poor communities (work in South Africa—NRF funding)
- ❖ Resilience-learners achieving success despite their socioeconomic vulnerabilities
- ❖ schools serving poor communities likely succeed if they have the capabilities to create a learning environments that protect learners from their risk factors (vulnerabilities) and allow them to concentrate on their learning (Bernard, 2004, Nicol, 2014).

Resilience and school effect

- School effect research in the past four decade—50% of between school variance attributed to school improvement culture (Lee & Schute, 2010)
- School culture—values, beliefs and practices
- Nicoll (2014) successful schooling for the poor requires transformation reforms based on resilience and growth mindset
- This approach places emphasis on reform that protects learners from their vulnerabilities
- And help them to build skills such as confidence, making connections, setting goals, increasing well-being and understanding motivation (Murray et al, 2000)

Defining resilient learners from TIMSS

- Aggregated learners responses to possession of resources such as TV, car, toilet et al at home
- Standardize the score (mean of zero and standard deviation of one)
- Grouped them into five poverty quintiles with learners with least assets in quintile one and the one in most assets in quintile five
- The poorest learners (quintiles 1 and 2) in no-fees schools (quintiles 1, 2, and 3) who scored above the South African average of 357 were classified as resilient
- About 11% of the learners (see Table 1 page 359)

Descriptive profile of resilient learners (see Table 2 page 360 in paper)

- ✓ Age profile similar to high performing public and private school (expected age 14-15yrs)
- ✓ Do not speak the language of test home
- ✓ Likely to be a girl from KZN
- ✓ Positive attitude towards mathematics and school in general
- ✓ Value the learning mathematics and aspire to have job that involve mathematics

Further analysis

- Multilevel

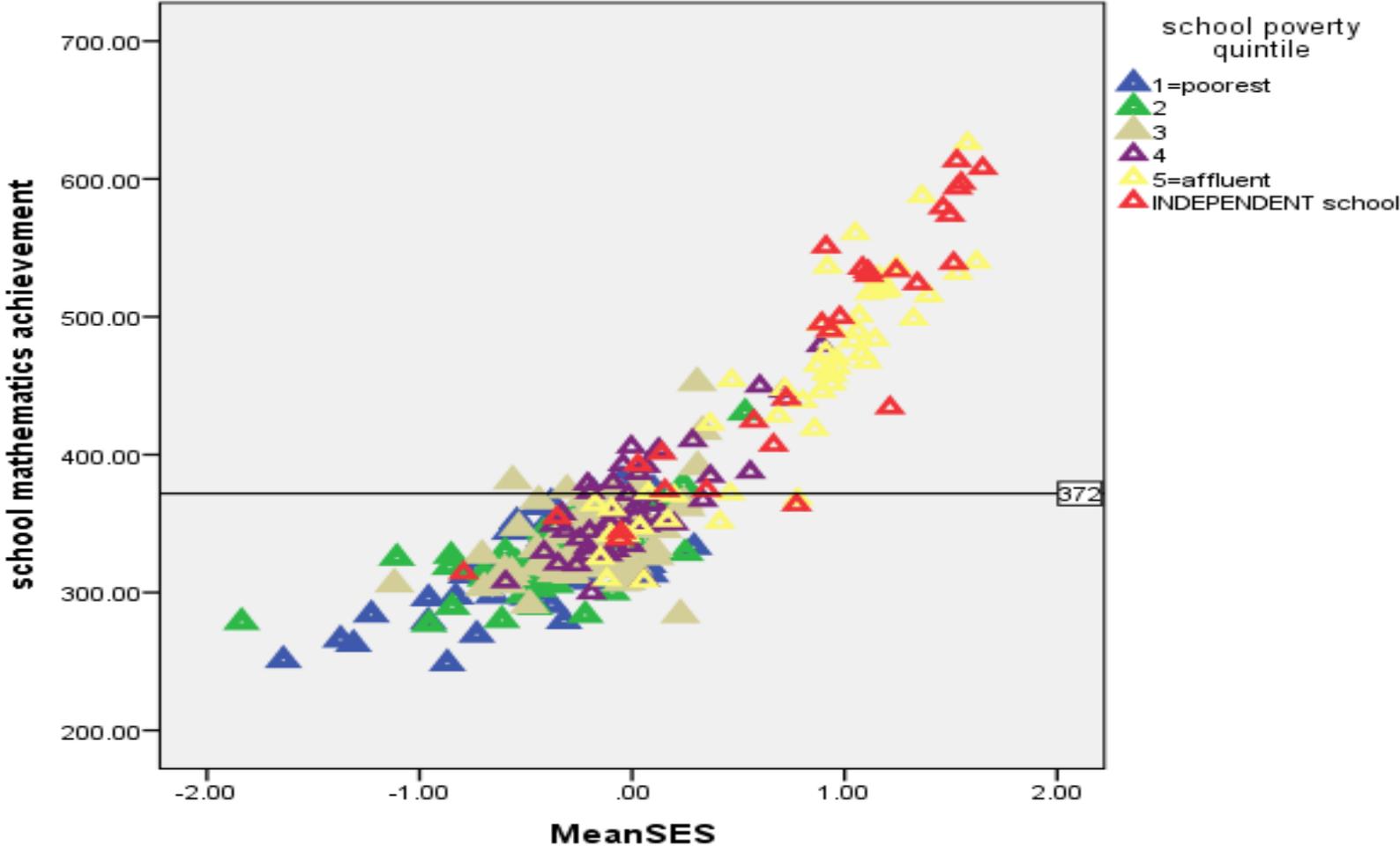
Multilevel model

- Multilevel model—the preferred analysis of school effect.
- Partition of total variation of school achievement into within and between variance
- School effect= proportion of variance between schools of similar students backgrounds
- South Africa public schools segregated by school poverty quintile (Quintile_1-schools in poorest communities, Quintile_5—schools in the affluent communities)
- Multilevel analysis by school poverty quintile allow us to identify exemplary schools serving poor communities

School achievement differences by school poverty quintile

School	Achievement	Variance		% of variation between schools	
		Within	Between		
Public school poverty quintile (Q)	Q1=poorest	323.7	2304.4	1130.7	32.9
	Q2	326.9	2497.6	654.4	20.8
	Q3	340.4	2229.0	856.5	27.8
	Q4	364.0	2407.5	1482.1	38.1
	Q5=affluent	451.7	2867.5	5775.2	66.8
Independent	474.2	2495.3	8646.3	77.6	

Profile of School mathematics achievement by school poverty quintile



Correlation between learners' mathematics achievement and schooling characteristics

Variable	School Poverty Quintile					Independent
	Q1	Q2	Q3	Q4	Q5	
STUDENTS BULLIED AT SCHOOL	0.18	0.17	0.18	0.26	0.19	0.32
STUDENTS LIKE LEARNING MATHS	0.40	0.40	0.32	0.21	0.08	-0.03
STUDENTS VALUE LEARNING MATHS -	0.26	0.25	0.19	0.10	0.06	-0.04
STUDENTS CONFIDENT IN LEARNING MATHS -	0.28	0.27	0.28	0.24	0.34	0.38
STUDENTS ENGAGED IN MATHEMATICS LESSONS -	0.23	0.24	0.17	0.09	-0.03	-0.08
TEACHERS REPORT PROBLEMS WITH WORKING CONDITIONS -	-0.13	0.07	0.02	0.38	0.56	0.43
SAFE AND ORDERLY SCHOOL -	-0.14	-0.05	0.02	0.15	0.51	0.14
TEACHERS CAREER SATISFACTION -	-0.11	0.05	0.00	0.02	0.12	0.51
INSTRUCTION AFFECTED BY MATHEMATICS RESOURCE SHORTAGES -	-0.12	-0.11	-0.07	0.08	0.55	0.51

Key Findings

- There are a few schools serving poor communities in South Africa making significant difference on learners' mathematics achievement
- These schools achieve success largely through the development of the non-cognitive skills of their learners
- The need for the South Africa education policy to direct attention to schooling practices that help learners develop these skills.

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Concluding remarks

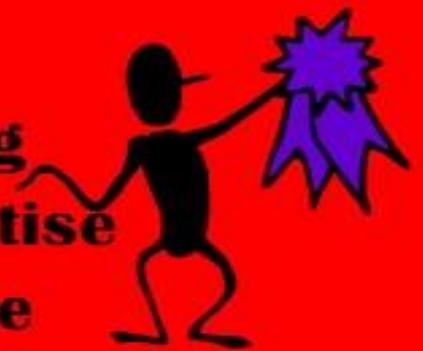
- The current South Africa policy to improve schooling outcomes for the poor seems to emphasise the lack of resources in schools serving these learners.
- The general assumption is that improved access to resources to school serving the poor would lead to successful schooling outcomes of these learners.
- The need for a policy alternative from the resilience perspective to pay attention to professional development initiatives that provide capabilities for schools to develop a caring and enabling environment for students to develop confidence in learning.

THE END---THANKS

RESILIENT



- I can stick at something
- I can set targets and practise
- I have a positive attitude
- I find interest in what I am doing



I AM A RESILIENT LEARNER

References

- ✓ Benard, B. (2004). *Resiliency: What we have learned*. San Francisco: WestEd
- ✓ Nicoll, W.G. (2014) Developing Transformative Schools: A Resilience-Focused Paradigm for Education. *The International Journal of Emotional Education*. Vol. 6(1), pp 47-65.
- ✓ Dweck, C.S. (2006). *Mindset: the new psychology of success*. New York: Ballentine Books
- ✓ Yu, K. & Frempong, G. & Winnaar, L (2015) Improving learner achievement in South Africa: A policy proposition for a growth mindset approach to enhance learner support at basic education. (HSRC Policy Brief, February).

Cognitive skills derived variables

- STUDENTS LIKE LEARNING MATHEMATICS – STUDENTS LIKE LEARNING MATHEMATICS scale was based on students' degree of agreement with six statements, such as “I enjoy learning mathematics” and “I learn many interesting things in mathematics.”
- STUDENTS VALUE LEARNING MATHEMATICS – The Students Value Mathematics scale asked the eighth grade students about six different aspects of valuing mathematics, including “I think learning mathematics will help me in my daily life” and “I need to do well in mathematics to get the job I want.”
- STUDENTS CONFIDENT IN LEARNING MATHEMATICS - The Students Confident in Mathematics scale includes seven statements, such as “Mathematics is harder for me than for many of my classmates” (reverse coded) and “My teachers tells me I am good at mathematics.” Internationally, just one-third of the fourth grade students expressed confidence in their mathematics ability, but their mathematics achievement was higher than for the Somewhat Confident students
- STUDENTS ENGAGED IN MATHEMATICS LESSONS – Students Engaged in Mathematics Lessons scale asked how much students agreed with five statements, such as “I know what my teacher expects me to do” and “I am interested in what my teacher says.”

Other Variables

- **STUDENTS BULLIED AT SCHOOL - STUDENTS BULLIED AT SCHOOL** scale was based on how often students experienced six bullying behaviours, such as “Someone spread lies about me” and “I was made to do things I didn’t want to do by other students.”
- **TEACHERS REPORT PROBLEMS WITH WORKING CONDITIONS** – Teachers were asked to rate the working conditions in their current school in terms of five potential problem areas. Pupils were scored according to their teachers’ responses concerning the five potential problem areas on the Teacher Working Conditions scale: buildings, workspace, teaching hours, classroom space and materials.
- **TEACHERS CAREER SATISFACTION** – scale categorized students based on their teachers’ degree of agreement with six statements, such as “I do important work as a teacher” and “I plan to continue as a teacher for as long as I can.”
- **INSTRUCTION AFFECTED BY MATHEMATICS RESOURCE SHORTAGES** – TIMSS 2011 created the Mathematics Resource Shortages scale based on principals’ responses concerning inadequacies in general school resources (materials, supplies, heating/cooling/ lighting, buildings, space, and staff) as well as resources specifically targeted to support mathematics instruction (specialized teachers, computers, computer software, calculators, library materials, and audio-visual resources).
- **SCHOOL EMPHASIS ON ACADEMIC SUCCESS - PRINCIPAL REPORTS** - scale was created based on teachers’ responses to the five statements described including principals and teachers’ expectations of student achievement.
- **SCHOOL DISCIPLINE AND SAFETY** - principals provided their perceptions about the degree to which a series of ten discipline, disorderly, and bullying behaviours were problems in their schools