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The vital role of good school management in improving primary school outcomes

It is popular to assume that poorer primary school learners struggle to perform due to their socio-economic status and the resultant lack of access to good school resources and teachers.

Still, children in South African primary schools underperform compared to their counterparts in other Southern- and East African countries, in spite of benefiting from better access to resources, more qualified teachers and lower pupil-to-teacher ratios. Are there other factors at play, which preclude South African primary schools from making the best use of their resources?

A recent paper looks at the performance of primary school learners in standardised literacy and numeracy tests. It concludes that although socio-economic status and access to good resources both play a role in educational outcomes, an improvement in either of those areas is meaningless if schools aren't managed efficiently. This underlines the case for prioritising policies aimed at improving managerial practices in primary schools.

These findings are based on recent analyses completed by Dr Stephen Taylor, using data from the National School Effectiveness Study (NSES) undertaken by the Joint Education Trust (JET). This large-scale panel data study tested numeracy and literacy skills across 266 South African schools over a three-year period (2007-2009). A single set of 8383 learners was tested as they progressed through grade 3, grade 4 and grade 5. Dr Taylor's original analysis can be found at <http://www.ekon.sun.ac.za/wpapers/2011>

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POLICY ISSUES

The 2009 Medium-term Strategic Framework (MTSF) identifies increased investment in social infrastructure, including schools, as a top priority. The objective is a 20% improvement in key education indicators by 2014.

The MTSF places a particular emphasis on improving the quality of school resources. This includes investment in infrastructure and learning materials, developing the teaching profession to improve the quality of teachers, and creating safe and supportive school environments. In addition, it is recognised that the policy should help create conditions for effective school management, the aim being to make teachers accountable and to improve their performance in the classroom.

THE RESEARCH QUESTIONS

A lot has been written about the impact of socio-economic status (SES) on learner performance. Poor children are more likely to be constrained by a lack of access to good facilities, teachers and learning resources, and this certainly affects their potential outcomes. But previous studies have found that access to resources and socio-economic status do not fully explain variances in performance.

Some have argued that access to resources is far less important than the ability of schools to make proper use of them. Poor South African children perform worse than their counterparts in other African countries, in spite of benefiting from better access to textbooks, having more qualified teachers and lower pupil-teacher ratios. It appears that there is indeed a missing "school efficiency" dimension requiring further analysis.

It has historically been difficult to show exactly what role school management plays, due to a lack of sufficient data, although it's been estimated that up to a third of disparities in poor learners' performance may be attributed to it.

The NSES survey collected detailed information regarding school practices and teacher management. This enabled a more rigorous analysis, showing that developing more effective school management is a vital policy priority that should not be ignored.

KEY FINDINGS

The study sets out to identify the usual suspects when it comes to school performance, including historical inequalities and socio-economic status. Having accounted for the effect of these variables, the analysis looks at the role of managerial efficiency in schools.

1. Literacy and numeracy results

The same literacy and numeracy tests were administered at the end of each year, the aim being to track learners' progress. Overall, the average test score for literacy at the end of grade 3 (2007) was just over 25%. This improved to 39% at the end of grade 5, representing an increase of just under 14 percentage points over the two academic years. For numeracy, the grade 3 average was 29%, increasing by about 18 percentage points to 47% at the end of grade 5.

2. Underperformance of historically black schools

Taylor compared literacy test scores in historically black (DET) schools with historically white (HOA) schools.

The average test score for HOA schools is significantly higher than the average DET score. This indicates that the poor overall test result was caused largely by underperformance in historically black schools.

Importantly, the average score for DET schools at the end of grade 5 is still significantly lower than the average achieved by learners in HOA schools at the end of grade 3. This shows that by the fifth grade there is already an astonishing backlog for students in historically black schools, amounting to more than 2 years' worth of learning.

3. The role of socio-economic status

The NSES data show that there is indeed a relationship between socio-economic status and educational achievement. It is already evident in the early primary school years, and it remains stable as learners progress through the different school grades.

Figure 1: Average literacy scores and learners' socio-economic status (SES)

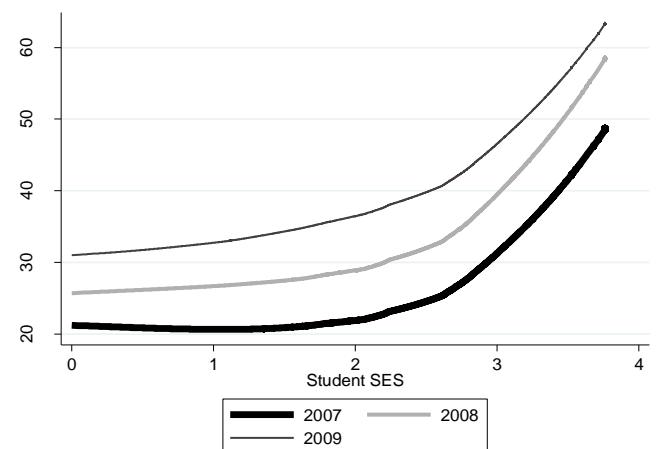


Figure 1 shows that the poorest of children achieve the worst results on average. Overall, there is an improvement in results as learners progress through the grades, but the distribution of results remains largely unchanged, suggesting that being poor brings with it a disadvantage that stubbornly remains.

There is evidence in the international literature that poorer children enter school with a cognitive disadvantage purely because they do not have access to the kind of resources and stimulation that befalls well-off children. This underlines the importance of improving access to pre-schooling for children in general, and for poorer kids in particular¹.

But it is important to note that these socio-economic disparities do not fully explain differences in test scores, nor does it confirm that poor learners struggle to perform inherently because they are poor. It may be the case that poor learners are simply more likely to attend badly run schools, which in turn affects their academic potential. The study sets out to analyse the extent to which school managerial efficiency impact learners' performance.

4. The impact of management efficiency

The NSES captured a rich collection of school and teacher data. Learners' workbooks were reviewed and the results captured, making it possible to gauge the extent of curriculum coverage completed within each class in each year and providing a useful proxy for teachers' efficiency.

Table 1: Percentage of students in schools where more than 25 maths topics were covered (2008)

Ex-department	Percentage > 25 topics	Number of students
DET (Black)	26%	6306
HOR (Coloured)	25%	849
HOD (Indian)	38%	86
HOA (White)	75%	591
Total	29%	7832

Table 2: Mean number of literacy exercises found in learner workbooks (2009)

Ex-department	Average number of exercises	Number of students
DET (Black)	33.43	6478
HOR (Coloured)	62.40	837
HOD (Indian)	72.44	102
HOA (White)	75.21	580
Total	39.58	7997

75% of HOA learners were in schools where more than 25 different maths topics were covered, but just 26% of DET learners were in schools where the same was achieved. Looking at the literacy/language books of the learners, there was evidence of an average of just over 33 exercises amongst historically black schools, compared to an average of 75 completed by those in historically white schools.

To some extent, teachers in historically black schools may have to deal with significant prior learning deficits amongst their students and might therefore be justified in covering new topics at a somewhat slower pace. However, the observed level of curriculum coverage and implementation of literacy and numeracy exercises is so low in many of these schools that it is probably fair to conclude that insufficient curriculum coverage is an important indicator of inefficiency within a large section of our school system. Although we've already identified the relative under-performance on the part of DET pupils, such descriptive analysis cannot tell us whether the under-performance is caused by particular aspects of inefficiency such as curriculum coverage.

¹ For more information on this topic see *Stellenbosch Policy Brief No. 02/2010*: <http://www.ekon.sun.ac.za/policybriefs/2010/022010>

To investigate this further, Taylor completed statistical analysis aimed at identifying the relative contributions of various factors affecting learners' performance.

There is weak evidence that pupil-teacher ratios, class sizes, teacher knowledge and access to textbooks and information technology improve educational outcomes.

In contrast teacher and management "efficiency" variables such as the existence of curriculum planning for a full year, a functional timetable, good-quality inventories for learning and teaching support materials (LTS), low teacher absenteeism, up-to-date assessment records and indeed various measures of curriculum coverage were all found to have a significant positive effect on learner performance.

DATA ISSUES

Although the data analyses presented above were based on all three years' test results, the statistical regression analysis regarding teacher efficiency only covered the 2007 and 2008 data that were available at the time. This should be kept in mind for comparative purposes.

The information regarding coverage of curriculum and various types of numeracy and literacy exercises was collected through a review of learner workbooks. One learner workbook per teacher was reviewed: Teachers were asked to present the "best" learner's book. This was to get rid of any bias that may have resulted if teachers were asked for *any* learner workbooks.

POLICY IMPLICATIONS

- **Prioritising managerial efficiency**

The impact of resources on student achievement is crucially mediated by how well they are managed. This explains why additional resources often do not lead to improved student outcomes in many of the less well-functioning schools. In contrast, efficient schools are able to make the most of whatever resources they are given. Although the MTSF already identifies the improvement of managerial efficiency as a policy objective, this evidence supports it being given the highest priority.

- **Encouraging better curriculum coverage**

The evidence suggests that effective schools offer thorough coverage of the curriculum. So there is scope for policies aimed at teachers' professional development, firstly to ensure that they are technically able to teach all of the required elements, and secondly to provide them with the necessary time management- and prioritisation skills so that they can deliver within the set academic timeframe.

Policy should also ensure that LTS such as textbooks and workbooks are explicitly designed to facilitate the extensive coverage of curriculum and exercises, making this easier for both teachers and students to implement.

- **Rewarding effective managers**

The indicators of good management identified in this research should not be interpreted as more than exactly that: *indicators* that point to the characteristics typically exhibited by good managers, rather than levers to be manipulated by policy to achieve improved student outcomes. Command and control measures aimed at forcing teachers to follow best practices may well empty such practices of their value through introducing the perverse incentive to window-dress those practices at the expense of focusing on the central task of teaching.

A better and indeed more ambitious route for policy would be to explore ways to attract, train and support better principals, and to replace those at the head of dysfunctional schools.

FURTHER QUESTIONS

Comments and questions can be directed to the author of the paper at stephen@sun.ac.za