

Policy Brief

Number 1 (August 2011)



Southern and Eastern Africa Consortium
for Monitoring Educational Quality

Trends in Achievement Levels of Grade 6 Learners in Lesotho

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Introduction

This policy brief provides information about levels and trends in the reading and mathematics achievements of Standard 6 pupils in Lesotho. The results are drawn from two large-scale, cross-national research studies of the quality of education conducted by the fifteen school systems involved in the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ).

In 1995, the Lesotho Ministry of Education and Training decided to participate in SACMEQ I Project. However, due to financial constraints Lesotho could not participate in the study. The situation changed in 2000, when the country was able to fully participate in the SACMEQ II Project.

The results arising from the second study gave Lesotho an opportunity to monitor the quality of education prior to the introduction of the Free Primary Education (FPE) Policy. Some important messages emerged from this study. For example, SACMEQ II findings indicated that the performance of Lesotho's Standard 6 pupils was lower than the pupil performance from other participating countries. At the same time, large disparities were observed in pupils learning outcomes among schools and districts.

These results warranted the Ministry and its development partners to design projects and policy reforms to remedy this situation. As a result, the Education Sector Development Project (ESDP) II Phase II was created and implemented by the Ministry of Education and Training in collaboration with the World Bank. This important project was conducted from 1999 to 2003 and its main objectives were to assist the Government of Lesotho in its efforts to increase access, equity and quality of primary and secondary education.

Specifically, the ESDP II-Phase II supported the following major activities such as: a) Training of existing Secondary School Boards, Primary Advisory

Committees and Management Committees; b) Construction of 413 primary classrooms including 63 remote and inaccessible areas; c) Construction of School-Supply Unit Warehouse and refurbishment of Lesotho College of Education student hostels; d) Launching of the Distance Teacher Education Programme (DTEP) which enrolled a total of 750 student teachers; and e) Provision of primary school core textbooks needed to cover the additional enrolment due to the introduction of FPE and for replenishment of the existing stock.

In addition, a new Education Sector Strategic Plan (ESSP 2005-2015) was developed with the objective of setting the milestones for further improvement of educational quality. The improvement of the quality of basic education was considered as one of the top priorities of this national initiative. This is the reason why SACMEQ played an important role in informing educational planners and policy makers about the levels of the quality of education delivered in the primary schools in Lesotho.

It was in the context of the above mentioned policy and investment programming that Lesotho embarked upon the SACMEQ III project which commenced in 2006. The Ministry of Education and Training was very interested in examining: a) whether Lesotho's Standard 6 pupils were beginning to achieve more acceptable levels in reading and mathematics (as specified by SACMEQ standards and by the national curriculum) and b) whether the general trend in the reading and mathematics achievement of Lesotho's Standard 6 pupils indicated some kind of improvement between 2000 and 2007.

SACMEQ's Literacy and Numeracy Indicators

When the SACMEQ Consortium was launched in 1995, SACMEQ's Governing Board (the SACMEQ Assembly of Ministers) emphasized that the planning of improvements in the quality of education required

better indicators of the “literacy” and “numeracy” skills that were being acquired by learners as they moved through the basic cycles of primary education. These indicators were considered important because they allowed senior decision-makers to assess the performance of school systems, and to provide information that could be used for strategies aimed at improving the quality of education.

The SACMEQ Ministers interpreted the concept of “literacy” as meaning reading comprehension skills that were transmitted through school language and reading instruction programmes. They interpreted “numeracy” as meaning the numerical and mathematical reasoning skills that formed the core of school mathematics programmes. The SACMEQ Ministers wanted their school systems to be judged by the extent to which learners acquired the knowledge and skills that they were expected to acquire – as specified in official school curricula, textbooks, and teachers’ guides.

The SACMEQ Ministers decided that the design of tests for the assessment of pupil achievement in reading and mathematics in the SACMEQ research programme should focus on:

- (a) **Standard 6** - because (i) they wanted to monitor the "output" of their primary education systems before large numbers of the learner cohort began to leave school, and (ii) they considered that assessments held at lower grade levels would result in distorted results due to the "turbulence" in learning environments that occurred in many schools during the changeover (at around Standard 3 to 4) from the delivery of instruction in local to the official or national languages; and
- (b) **The National Language of Instruction** - because they were concerned that the acquisition of reading and mathematics skills in the national language of instruction was necessary for a successful transition to secondary schooling.

The SACMEQ reading and mathematics tests were developed from a careful analysis of the official school curricula, school syllabi, and textbooks used in both Lesotho and other 14 SACMEQ school systems. These tests made it possible to employ Modern Item Response Theory methods to undertake item analyses and test-scoring procedures. The test scores were transformed so that pupils from both the SACMEQ II and III Projects were placed on a single scale with the SACMEQ II scores anchored to a mean of 500 and a standard deviation of 100.

The SACMEQ reading and mathematics tests were scored in two different ways for different reporting purposes:

- (a) **Scaled Scores** – which were useful for reporting the average performance of learners at national and regional levels for both SACMEQ Projects. These scores were scaled so that meaningful comparisons could be made across countries for each project, and across projects for each country. The average scaled scores for Lesotho and its districts have been reported in **Table 1** for the SACMEQ II Project (2000) and the SACMEQ III Project (2007).
- (b) **Competency (or Skill) Levels** – which were useful for presenting a descriptive account of (i) the skills that pupils had acquired at eight levels of competence measured by the scaled scores, and (ii) the skills that must be acquired for pupils to move from one level of competence to a higher level. The competency levels for reading and mathematics have been described in **Table 2(a)** and **Table 2(b)**, respectively. These tables show the percentages of Lesotho’s pupils at each competency level for the SACMEQ II Project (2000) and the SACMEQ III Project (2007).

Results for Average Scaled Scores

The average reading and mathematics scores of Standard 6 pupils across the 10 districts of Lesotho were derived from SACMEQ reading and mathematics tests that were administered in Lesotho to 3,155 Standard 6 pupils from 177 schools for the SACMEQ II Project in 2000, and 4,240 Standard 6 pupils in 182 primary schools for the SACMEQ III Project in 2007.

In order to examine **levels of achievement**, the average scores were colour-coded to show their levels relative to the SACMEQ II Project overall mean of 500. Green figures indicated ten points or more above the SACMEQ average, red figures indicated ten points or more below the SACMEQ average, and black figures indicated within ten points of the SACMEQ average.

In order to show **trends in achievement**, colour-coded arrowheads were used to show changes in average scores between 2000 and 2007. A green arrowhead denoted an increase of ten points or more, a red arrowhead denoted a decrease of ten points or more, and a grey arrowhead denoted change of less than 10 points above or below the SACMEQ mean of 500.

(a) Achievement Levels

It can be seen from **Table 1** that for Lesotho as a whole, the mean score for reading increased by 17 points, from 451 points in 2000 to 468 points in 2007. For mathematics, there was an increase of 30 points in the national mean score, that is, from 447 points in 2000 to 477 points in 2007. However, the Lesotho national mean score remained below the SACMEQ average (500) in both subjects and both studies. If this positive trend is maintained or improved it is probable that Leribe and Maseru districts become the first districts in Lesotho to reach the SACMEQ average. At the same time it should be noted that in the case of mathematics pupils from Leribe nearly reached the SACMEQ average with 493 score points.

(b) Achievement Trends

From the green arrowheads in **Table 1**, it can be seen that on average Lesotho Standard 6 pupils' scores increased in both reading and mathematics. However, it is important to note that only in Butha-Buthe a decrease in the pupil reading performance was registered. Similarly, negligible changes in pupils' reading and mathematics performance could be observed in Mokhotlong.

In other words, nearly all the regions indicated a noticeable improvement in the pupils' performance for both subjects.

Results for Competence Levels

Another way in which the SACMEQ results can be presented is by calculating the percentages of Standard 6 pupils who had reached each level of competence on a hierarchical scale of competence levels as explained below.

The reading and mathematics test items were first arranged in order of difficulty, and then examined item-by-item to describe the specific skills required in order to provide correct responses. Items were then placed in groups so that the items in each group had similar difficulty values and shared a common theme with respect to the underpinning competencies required to provide correct responses.

This "skills audit" for the reading and mathematics tests resulted in the identification of eight hierarchical levels of competence for each test (Level 1 being the lowest, and Level 8 being the highest).

The results of the skills audit have been presented in **Tables 2(a), and 2(b)**. A description or summary name was linked with each of the levels – in order to summarize the competencies associated with each group of test items. The first three competence levels in reading and mathematics employed the same prefixes (Pre, Emergent, and Basic) in order to reflect the mechanical nature of the most elementary competencies. From the fourth level upwards, the prefixes of the summary names were different for reading and mathematics, and were designed to reflect deeper levels of understanding of subject specific competencies.

The eight competence levels provided a more concrete analysis of what standard 6 pupils could actually do. They also suggested instructional strategies relevant to learners who were learning at each level of competence.

For reading, it can be seen that there were decreases in the percentages of standard 6 pupils who were performing at Levels one to three, as indicated by the minus (-) symbols in front of the figures in the final column of **Table 2(a)**. This meant that the percentages of standard 6 pupils who were performing at higher levels (Levels 4 to 8) of reading competence were increasing, which is an indication that more pupils are attaining the desired reading competence skills in reading. However, still more than half (52%) of the Standard 6 pupils in Lesotho could not reach Level 4 (reading for meaning). Similarly, there were no Standard 6 pupils performing at Level 8. This could be interpreted as a sign showing that further improvement is needed in order to provide pupils with the necessary support so that they can reach higher levels of reading competence.

For mathematics, in **Table 2(b)** it could be seen that the percentage of Standard 6 pupils who were performing at Levels one and two decreased by -5 and -19 percent, and the percentage of Standard 6 pupils performing at Levels three to six increased by +12, +8, and +2 respectively between 2000 and 2007.

However, it could also be observed that Standard 6 pupils were not able to acquire concrete and abstract problem solving skills (Levels 7 and 8) as illustrated by the zero percentages presented in table 2b. Therefore, it is important to continue supporting the trend of improvement in order for more pupils to be able to reach higher levels of mathematics competence in the future.

Summary of Results

The results discussed in this Policy Brief have shown that there was an overall increase in the performance of Standard 6 pupils in Lesotho in both reading and mathematics between 2000 and 2007. The same trend was observed in most of the districts in Lesotho except for Butha-Buthe and Mokhotlong. In addition, the results showed that in both 2000 and 2007 there were very wide differences in pupil achievement across districts in Lesotho.

The general increase in pupil achievement levels in Lesotho between 2000 and 2007 can probably be attributed to a combination of several factors, such as the return of massive investments in basic education and policy reforms such as the implementation of Education Sector Development Project phase II (ESDP II-Phase II) in 1999 to 2003, as well as the introduction of Free Primary Education in 2000.

However there is still a long way to go as Standard 6 pupils in Lesotho performed below the SACMEQ average of 500 both in 2000 and again in 2007.

Research-Based Conclusions

The following conclusions have been based on the results discussed in this Policy Brief concerning: (a) achievement levels for Standard 6 pupils as measured by scaled test scores, and (b) achievement trends of Standard 6 pupils as measured by their location in one of the 8 competency levels.

1. Levels of Achievement: In 2007 the average reading performance of Standard 6 pupils in Lesotho was below the SACMEQ mean score of 500. However, an improvement in pupil reading and mathematics performance was registered at both national and regional levels.

Education authorities should continue supporting this improvement. Concerted efforts should be made in order to deliberately shift the attention from access issues towards quality issues in basic education.

2. Trends in Achievement: Between 2000 and 2007 most districts in Lesotho experienced an increase in the average reading and mathematics performance of Standard 6 pupils. The only exceptions were the Standard 6 pupils from Butha- Buthe and Mokhotlong districts.

The Ministry of Education and Training should investigate why Standard 6 pupils in these districts registered such a low performance.

A Concluding Comment

The task of improving the quality of education for a whole system of education must be seen as a long-term challenge. There are very few examples in the world where “quick fix” responses have resulted in system-wide positive improvements in the quality of education delivered across a nation. Therefore, the Ministry of Education and Training should involve all stakeholders in efforts aimed at improving the quality of education as it implements its turn-around strategy and paradigm shift from access to quality basic education for all. Otherwise the gains Lesotho has made in terms of access might be lost due to a lack of quality education.

Authors

Haleokoe Jopo
Haleokoe.Jopo@gov.ls
/ericjopo0607@yahoo.com

Motseng Maema
Motseng.Maema@gov.ls
/motsengmaema2002@yahoo.co.uk

Matseko Ramokoena
ramokoena18@yahoo.com

A copy of this Policy Brief can be downloaded from the SACMEQ Website: www.sacmeq.org

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SACMEQ wishes to acknowledge the financial assistance provided by the Ministry of Foreign Affairs of the Government of the Netherlands in support of SACMEQ's research and training programmes.

Table 1: Levels and Trends in Pupil Achievement across Districts in Lesotho

	Pupil reading score			Pupil mathematics score	
	2000	2007		2000	2007
Berea	438	452 ▲		435	460 ▲
Butha-Buthe	484	446 ▼		461	474 ▲
Leribe	447	483 ▲		437	493 ▲
Mafeteng	443	457 ▲		447	471 ▲
Mokhotlong	466	457 ►		467	462 ►
Mohale Hoek	443	466 ▲		443	476 ▲
Maseru	463	485 ▲		461	488 ▲
Qacha Nek	441	464 ▲		440	471 ▲
Quting	450	466 ▲		448	476 ▲
Thaba-Tseka	443	465 ▲		440	459 ▲
LESOTHO	451	468 ▲		447	477 ▲
SACMEQ	500	512 ▲		500	510 ►

Values in **Green** = 10 points or more above SACMEQ II mean of 500

Values in **Black** = less than 10 points above or below SACMEQ II mean of 500

Values in **Red** = 10 points or more below SACMEQ II mean of 500

Notes about trend:

▲ Increased by 10 points or more

► Minimal change (less than ±10)

▼ Decreased by 10 points or more

Table 2(a): Percentages of Learners Reaching Various Levels of Competence in Reading

Reading Skill Levels			2000	2007	Change
Level	Description	Skill/Competence			
1	Pre-reading	Matches words and pictures involving concrete concepts and everyday objects.	6	4	-2
2	Emergent Reading	Matches words and pictures involving prepositions and abstract concepts.	24	17	-7
3	Basic Reading	Interprets meaning (by matching words and phrases, completing sentences).	34	31	-3
4	Reading for Meaning	Reads to link and interpret information located in various parts of the text.	24	25	+1
5	Interpretive Reading	Interprets information from various parts of the text in association with external information.	9	12	+3
6	Inferential Reading	Reads to combine information from various parts of the text so as to infer the writer's purpose.	2	6	+4
7	Analytical Reading	Locates information in longer texts (narrative, document or expository) in order to combine information from various parts of the text so as to infer the writer's personal beliefs (value systems, prejudices and biases).	1	4	+3
8	Critical Reading	Reads from various parts of the text so as to infer and evaluate what the writer has assumed about both the topic and the characteristics of the reader	0	0	0

Table 2(b): Percentages of Learners Reaching Various Levels of Competence in Mathematics

Mathematics Skill Levels			2000	2007	Change
Level	Description	Skill/Competency			
1	Pre-Numeracy	Applies single step addition and subtraction.	9	4	-5
2	Emergent Numeracy	Applies a two-step addition and subtraction involving carrying.	57	38	-19
3	Basic Numeracy	Translates verbal information into arithmetic operations.	27	39	+12
4	Beginning Numeracy	Translates verbal or graphic information into simple arithmetic problems.	6	14	+8
5	Competent Numeracy	Translates verbal, graphic, or tabular information into an arithmetic form in order to solve a given problem.	1	3	+2
6	Mathematically Skilled	Solves multiple-operation problems (using the correct order) involving fractions, ratios, and decimals.	0	2	+2
7	Concrete Problem Solving	Extracts and converts information from tables, charts and other symbolic presentations in order to identify, and then solve multi-step problems	0	0	0
8	Abstract Problem Solving	Identifies the nature of an unstated mathematical problem embedded within verbal or graphic information and then translate this into symbolic, algebraic or equation form in order to solve a problem.	0	0	0