



Southern and Eastern Africa Consortium
for Monitoring Educational Quality

Learner and Teacher Knowledge about HIV and AIDS in South Africa

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Introduction

The HIV and AIDS pandemic presents a major challenge for the social and economic development of nations located in Sub-Saharan Africa. The Joint United Nations Programme on HIV and AIDS (UNAIDS, 2010: 180) has estimated that in this region there are more than 20 million people living with HIV, and that around 10 percent of these people are below the age of 15 years.

In 2009 governments and international donors together provided US\$ 15.9 billion for the global AIDS response (UNAIDS, 2010: 146). At this point of time there is no known cure for AIDS, and a vaccine for HIV still appears to be in a development phase.

The first case of HIV infection in South Africa was diagnosed in 1982. South Africa now has the world's largest number of people infected with HIV. In 2009 around 5.6 million South Africans were living with HIV, and around 300,000 of them were children under the age of 15 years (UNAIDS, 2010: 180).

AIDS is widely accepted as being one of the main causes of a dramatic increase in the number of orphans. The estimated number of orphans aged 0-17 years due to AIDS in South Africa rose from 580,000 in 2001 to 1.9 million in 2009 (UNAIDS, 2010: 186).

The UNAIDS organization has reported that the HIV prevalence rate in South Africa for adults aged 15-49 years in 2009 was 17.8%. This represents a small increase from 17.1% since 2001. However, it must be remembered that this change in rates may have been influenced by changes in the methodology for estimating HIV infection rates that occurred during 2007 (UNAIDS, 2007: 3).

The United Nations has recognized that the education sector has a critical role to play in terms of the delivery of effective HIV and AIDS prevention education programmes.

The Education Sector Response

The South African Department of Basic Education has responded to challenges in this area by implementing education initiatives that aim to ensure that all young people possess the basic knowledge that is required to make informed decisions about behaviours related to HIV and AIDS that will protect and promote health.

The primary school level has been identified as a crucial access point for HIV and AIDS prevention education programmes because most children attend these schools, and because of the importance of improving the knowledge of children about HIV and AIDS before they become sexually active and/or involved in high-risk behaviours.

The SACMEQ Research Programme

The Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) is a network of 15 Ministries of Education: Botswana, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania (Mainland), Tanzania (Zanzibar), Uganda, Zambia, and Zimbabwe.

SACMEQ's main mission is to undertake integrated research and training activities that: (a) provide educational planners with the technical skills required to monitor and evaluate the quality of their own education systems, and (b) generate information that can be used to plan the quality of education.

The SACMEQ Consortium has undertaken three large-scale cross-national studies of the quality of education in Southern and Eastern Africa: the SACMEQ I Project (1995-1999), the SACMEQ II Project (2000-2004), and the SACMEQ III project (2007-2011).

The SACMEQ III Project included an additional data collection concerned with a detailed assessment of learner and teacher knowledge about HIV and AIDS.

A New HIV and AIDS Knowledge Indicator

In 2006 SACMEQ's Governing Body (the SACMEQ Assembly of Ministers of Education) expressed concern about the need for a well-designed indicator that could be used to guide informed debate about the effectiveness of HIV and AIDS prevention education programmes. The one indicator that has been widely used to judge these programmes (known as the "United Nations General Assembly (UNGASS) HIV-AIDS Knowledge Indicator for Young People") was considered to lack validity because it was based on a short list of five test questions that were problematic in terms of wording complexity, content coverage, and reliability.

The SACMEQ Ministers asked the SACMEQ III Project Research Teams to address information needs in this area by developing a valid SACMEQ HIV-AIDS Knowledge Test that would be suitable for administration to Grade 6 learners (who have average ages of 13.5 years across the SACMEQ countries and 12.9 years in South Africa) and their teachers.

The SACMEQ HIV-AIDS Knowledge Test (HAKT)

The SACMEQ HIV-AIDS Knowledge Test (HAKT) was designed to provide a valid assessment of learner and teacher knowledge about HIV and AIDS with respect to the topics specified in official school curriculum frameworks, textbooks, and teaching materials used by the SACMEQ countries.

The 86 HAKT test items covered 43 curriculum topics, and they were focused on an assessment of "the basic knowledge about HIV and AIDS that is required for protecting and promoting health". These topics were grouped into five main areas: definitions and terminology; transmission mechanisms; avoidance behaviours; diagnosis and treatment; and myths and misconceptions.

The HAKT was administered in late 2007 to 61,396 Grade 6 learners and 8,026 teachers in 2,779 schools across the 15 SACMEQ countries. In South Africa the HAKT was administered to 9,071 Grade 6 learners and 1,163 Grade 6 teachers in 392 schools.

The advanced psychometric analyses applied to these data indicated that the HAKT had a high level of reliability, and that it was suitable for placing learners

and their teachers on a common scale of knowledge about HIV and AIDS.

The performance of learners and teachers on the HAKT was assessed by applying two complementary scoring procedures:

(a) "**HAKT Scores**" – these were Rasch-scaled scores on the HAKT that were transformed to a Grade 6 learner average of 500 and standard deviation of 100.

(b) "**HAKT Minimal Knowledge Scores**" – these were dichotomous scores that indicated whether learners or teachers reached (score=1) or did not reach (score=0) SACMEQ's "minimal" HIV and AIDS knowledge benchmark (defined as mastery of half of the official curriculum assessed by the HAKT).

Table 1 contains summarized information about these two scores for Grade 6 learners and teachers in South Africa's nine education provinces and the SACMEQ countries. Two sets of figures have been presented in the table for these groups of respondents: (a) the Average HAKT Scores, and (b) the Average HAKT Minimal Knowledge Scores (these proportions were expressed as percentages in the table).

For example, the second row of figures in **Table 1** indicated that: (a) the average HAKT Scores for learners and teachers in South Africa's Gauteng Province were 552 and 779, respectively, and (b) the percentages of learners and teachers in Gauteng Province that reached the minimal level of knowledge on the HAKT were 53% and 100%, respectively.

Table 2 contains the average HAKT Scores for groups of South Africa's Grade 6 learners defined by four demographic variables: Socioeconomic Status, Location, Gender, and Age.

For example, the first row of figures in **Table 2** indicated that learners from high socioeconomic status families had a higher average HAKT Score (545.7) than learners from low socioeconomic status families (466.7), and that the difference between these two averages (79.0) exceeded two standard errors of sampling (11.8).

Note that SACMEQ Projects use learners as the units of analysis. Therefore, teacher statistics such as means refer to teacher characteristics associated with the average learner.

Learner Knowledge Levels

(a) SACMEQ Countries

The average HAKT Scores for Grade 6 learners provided a means of making **relative comparisons** of knowledge levels among SACMEQ countries.

The results presented for countries in the first column of **Table 1** showed that: (a) Grade 6 learner averages ranged from a low of 453 in Mauritius to a high of 576 in Tanzania, and (b) the South Africa learner average of 503 was just above the SACMEQ overall average of 500.

These **average HAKT Scores** for SACMEQ countries were dangerously deceptive. For example, they suggested that South African Grade 6 learner knowledge levels about HIV and AIDS were “satisfactory” because the average for South Africa was slightly higher than the SACMEQ overall average. However, an examination of **average HAKT Minimal Knowledge Scores** suggested the need for a different conclusion!

The average HAKT Minimal Knowledge Scores for Grade 6 learners provided a means of making **normative comparisons** of knowledge levels among SACMEQ countries. (*NOTE: It was expected that 100% of learners in all SACMEQ countries should reach the minimal knowledge level.*)

The results presented for countries in the second column of **Table 1** showed that: (a) the percentages of learners with minimal knowledge ranged from 17% in Mauritius to 70% in Tanzania, and (b) the percentage of South Africa’s learners that reached the minimum knowledge level was a low value of 35%. That is, the percentages of Grade 6 learners reaching the minimal knowledge level in South Africa and all other SACMEQ countries were far below the expected level of 100%.

The results described above indicated that major alarm bells should be ringing in South Africa because in 2007 about two thirds of the Grade 6 learners (65%) lacked the minimal knowledge about HIV and AIDS that is required for protecting and promoting their health. In all other SACMEQ countries the situation was also very serious - with a majority of Grade 6 learners in most countries lacking minimal knowledge.

(b) South Africa’s Education Provinces

The figures for South Africa’s education provinces presented in the first column of **Table 1** showed large

provincial variations in average Grade 6 learner knowledge about HIV and AIDS.

The relatively high average HAKT Score of 552 for Gauteng Province placed it just below the highest scoring SACMEQ country (Tanzania). In contrast, the average HAKT Score for Limpopo Province (452) placed it below the lowest scoring SACMEQ country (Mauritius). The difference between these two extreme provinces was a very large 100 score points.

The average HAKT Minimal Knowledge Scores for South Africa’s education provinces in the second column of **Table 1** also illustrated provincial variations in Grade 6 learner knowledge about HIV and AIDS. The percentage of learners in Gauteng Province (53%) that reached SACMEQ’s minimal knowledge benchmark was more than three times larger than the percentage observed for Limpopo Province (15%).

Teacher Knowledge Levels

In the third and fourth columns of figures in **Table 1** the average HAKT Scores and average HAKT Minimal Knowledge Scores have been presented for teachers in the SACMEQ countries and South Africa’s education provinces. The figures showed that the average HAKT Score for teachers exceeded 700 for most SACMEQ countries, and for SACMEQ overall it reached 746 – almost 250 score points above the Grade 6 learner average of 500.

In South Africa, the average HAKT Score for teachers was 781 at the national level, and was in the range of around 750 to 810 for all education provinces. The percentages of teachers that reached SACMEQ’s minimal knowledge benchmark of mastering at least one half of the official school curriculum were around 100% for all SACMEQ countries and all South Africa education provinces.

The major contrast between the high knowledge levels of teachers and the low knowledge levels of their Grade 6 learners came as a surprise to South Africa’s SACMEQ Research Team. They had assumed that teachers with high levels of knowledge about HIV and AIDS should be able to transmit this important information to their learners.

This assumption was obviously faulty and certainly requires further research in order to provide an explanation for the substantial “knowledge gap” between learners and teachers.

Demographic Differences in Knowledge

In **Table 2** some research results have been presented in order to examine demographic differences in the HIV and AIDS knowledge of South Africa's Grade 6 learners. Four variables were used to generate groups of learners for making comparisons of average HAKT Scores. Differences in group averages were greater than two standard errors (**) for all four variables - with learners from wealthier homes, learners from urban locations, female learners, and younger learners demonstrating greater knowledge about HIV and AIDS.

Four Research-Based Conclusions

1. Low Knowledge Levels

Knowledge levels about HIV and AIDS among around two thirds (65%) of South Africa's Grade 6 learners in 2007 were below SACMEQ's "minimal" knowledge benchmark (which was defined as mastery of at least half of the official school curriculum). The Department of Basic Education should acknowledge that HIV and AIDS prevention education programmes need to be monitored and evaluated in order to ensure that they are working effectively.

2. Large Provincial Differences in Knowledge

There were substantial differences in average Grade 6 learner HIV and AIDS knowledge levels among education provinces in South Africa. The Department of Basic Education should investigate: (a) the reasons for these differences, and (b) why knowledge levels were so low in Limpopo Province.

3. A Learner-Teacher "Knowledge Gap"

There was a large HIV and AIDS "knowledge gap" between South Africa's Grade 6 learners and their teachers. The Department of Basic Education should investigate why well-informed teachers were not able to transmit this knowledge to their learners.

4. Demographic Differences in Knowledge

There were significant differences in knowledge about HIV and AIDS between groups of South Africa Grade 6 learners defined by Socioeconomic Status, Location, Gender, and Age. The Department of Basic Education should expand and intensify the delivery of HIV and AIDS prevention education programmes in poor and rural communities. The Ministry should also mount a research study to find out why females and younger learners appear to have significantly higher levels of knowledge.

A Concluding Comment

It is clear from the SACMEQ III Project research results that the time has come to take stock of the impact of current HIV and AIDS prevention education programmes for young people in South Africa. The SACMEQ results showed that during 2007 two-thirds of Grade 6 learners did not have the minimal level of knowledge about HIV and AIDS that was required to preserve and promote their health.

This was indeed alarming because Grade 6 learners in South Africa (with an average age of 12.9 years) are entering a stage of mental and physical development where they may become sexually active, and/or may choose to become involved in high-risk behaviours.

The Department of Basic Education should therefore take immediate action to: (a) address the research-based conclusions presented above, and (b) facilitate the development and implementation of more effective HIV and AIDS prevention education programmes that focus on the upper grades of primary school.

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Table 1
Learner and Teacher Scores on the
SACMEQ HIV-AIDS Knowledge Test (HAKT)

	LEARNERS		TEACHERS	
	HAKT Score	Reached Minimal Level (%)	HAKT Score	Reached Minimal Level (%)
TANZANIA	576	70	724	99
South Africa: Gauteng	552	53	779	100
South Africa: Western Cape	544	53	772	100
SWAZILAND	531	52	759	100
South Africa: North West	515	38	799	100
MALAWI	512	43	714	99
South Africa: Kwazulu-Natal	511	38	809	100
KENYA	509	39	793	100
MOZAMBIQUE	507	40	741	99
SOUTH AFRICA	503	35	781	100
NAMIBIA	502	36	764	99
ZANZIBAR	501	38	657	94
BOTSWANA	499	32	782	100
South Africa: Mpumalanga	493	30	785	100
UGANDA	489	33	708	98
South Africa: Northern Cape	489	28	759	98
ZAMBIA	488	35	744	98
SEYCHELLES	488	25	789	99
South Africa: Free State	487	27	778	100
ZIMBABWE	477	30	785	99
South Africa: Eastern Cape	468	23	765	100
LESOTHO	465	19	751	98
MAURITIUS	453	17	698	98
South Africa: Limpopo	452	15	748	100
SACMEQ	500	36	746	99

Table 2
Average HAKT Scores for South Africa Learners
across Four Demographic Variables

DEMOGRAPHIC VARIABLE	1st Group	2nd Group	Diff (SE)
Socioeconomic Status (Low/High)	466.7	545.7	79.0 (5.9)**
Location (Isolated-Rural-Town/City)	482.0	547.4	65.4 (8.0)**
Gender (Males/Females)	493.4	511.9	18.5 (5.8)**
Age (Younger/Older)	522.4	470.9	-51.6 (5.8)**

Diff = Difference

Figure 1
Variation in learner knowledge about HIV
and AIDS among SACMEQ school
systems and provinces in South Africa

