



Southern and Eastern Africa Consortium  
for Monitoring Educational Quality

## Pupil and Teacher Knowledge about HIV and AIDS in Seychelles

[www.sacmeq.org](http://www.sacmeq.org)

### Introduction

The HIV and AIDS pandemic represents 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.

In Seychelles there has been a substantial increase in the number of AIDS cases reported since 1987 (Seychelles, 2010). The prevalence of high-risk behaviours amongst young adults has triggered off an alarming increase in the rates of HIV infection (from 0.30% in 2005 to 0.71% in 2009) in the population between the ages of 15-49 years. Moreover, from January to March 2011, out of 33 new cases, eight were children under the age of 15 (Ministry of Health, April 2011).

### The Education Sector Response

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 Seychelles Ministry of Education has responded to this message 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 by decision-makers to plan and improve 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 pupil 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 their 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 (the “United Nations General Assembly (UNGASS) Knowledge Indicator for Young People”) was known to lack validity because it was based on a short list of five test questions that were considered to be 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 Primary 6 pupils and their teachers.

**It is important to note here that Primary 6 pupils in Seychelles are quite young compared with Primary 6 pupils in the other SACMEQ countries. To illustrate, the average age of Primary 6 pupils in Seychelles is 11.5 years – which is 2 years below the SACMEQ overall average, and around 3 years below the Tanzania and Mozambique averages.**

## The SACMEQ HIV-AIDS Knowledge Test

The SACMEQ HIV-AIDS Knowledge Test (the HAKT) was designed to provide a valid assessment of pupil 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 focussed on an assessment of “the basic knowledge about HIV and AIDS that is required for protecting and promoting health”.**

These topics covered 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 Primary 6 pupils and 8,026 teachers in 2,779 schools across the 15 SACMEQ countries. In Seychelles the HAKT was administered to the whole of the Primary 6 population of 1,480 pupils and their 116 teachers in 24 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 pupils and their teachers on a common scale of knowledge about HIV and AIDS.

The performance of pupils 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 SACMEQ overall Primary 6 pupil average of 500 and standard deviation of 100.

**(b) “HAKT Minimal Knowledge Scores”** – these were dichotomous scores that indicated whether pupils 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 that was assessed by the HAKT).

**Table 1** contains summarized information about these two scores for Primary 6 pupils and teachers in the 6 Seychelles education regions 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 sixth row of figures in **Table 1** indicated that in the Islands Region of the Seychelles: (a) the average HAKT scores for pupils and teachers were 506 and 792 respectively, and (b) the percentages of pupils and teachers that reached the minimal level of knowledge on the HAKT were 33% and 100%, respectively.

**Table 2** contains the average HAKT Scores for groups of Seychelles Primary 6 pupils defined by four demographic variables: Socioeconomic Status, Geographic Location, Gender, and Age.

For example, the first row of figures in **Table 2** indicated that pupils in the Seychelles from high socioeconomic status families had a higher average HAKT Score (505.3) than pupils from low socioeconomic status families (477.2), and that the difference between these averages (28.1) exceeded two standard errors of sampling (8.2).

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

## Pupil Knowledge Levels

### (a) SACMEQ Countries

The average HAKT Scores for Primary 6 pupils provided a means of making **relative comparisons** of knowledge levels among SACMEQ countries. The results presented in the first column of **Table 1** showed that: (a) Primary 6 pupil averages ranged from a low of 453 in Mauritius to a high of 576 in Tanzania, and (b) the Seychelles Primary 6 pupil average of 488 was 12 points below the SACMEQ average of 500.

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

The figures presented for countries in the second column of **Table 1** showed that: (a) the percentages of pupils with minimal knowledge ranged from 17% in Mauritius to 70% in Tanzania, and (b) the percentage of Primary 6 pupils in Seychelles that reached the minimum knowledge level was a very low value of 25%. That is, the percentage of pupils reaching the minimal knowledge level in Seychelles and all other SACMEQ countries was far below the expected level of 100%.

**The results described above indicated that major alarm bells should be ringing in Seychelles because in 2007 three quarters of Primary 6 pupils (75%) 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 Primary 6 pupils in most countries lacking minimal knowledge.**

### (b) Seychelles Education Regions

The figures for Seychelles education regions presented in the first column of figures in **Table 1** and **Figure 1** showed fairly large regional variations in Primary 6 pupil knowledge about HIV and AIDS. Primary 6 pupils in the Islands Region registered the highest average HAKT Score of 506, while Primary 6 pupils in the Western Region averaged only 463 – a difference of 43 score points.

The average HAKT Minimal Knowledge Scores for Seychelles education regions in the second column of figures in **Table 1** also highlighted substantial regional variations in Primary 6 pupil knowledge about HIV

and AIDS. The percentages of Primary 6 pupils in the Islands and Southern Regions (33% and 34%, respectively) that reached SACMEQ's minimal HIV and AIDS knowledge benchmark was almost twice the percentage in Western Region (18%).

## Teacher Knowledge Levels

In the third and fourth columns of figures in **Table 1** the average HAKT Scores and the average HAKT Minimal Knowledge Scores have been presented for teachers in the SACMEQ countries and Seychelles education regions. The figures showed that the average HAKT Score for SACMEQ overall reached 746 – almost 250 points above the pupil average of 500.

In Seychelles, the national average HAKT Score for teachers was a very high value of 789, and at the regional level the average HAKT Score was in the very high range of around 760 to 830. In addition, the percentages of teachers that reached SACMEQ's minimal knowledge benchmark of mastering at least one half of the official school curriculum was around 100% for all SACMEQ countries, and all Seychelles education regions.

**This major contrast between the very high knowledge levels of teachers and the very low knowledge levels of their Primary 6 pupils came as a surprise to the SACMEQ Research Teams. They had assumed that teachers with high levels of basic knowledge about HIV and AIDS should be able to transmit this important information to their pupils. This assumption was obviously faulty and certainly requires further research in order to provide an explanation for the substantial “knowledge gap” between pupils 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 Seychelles Primary 6 pupils. Four variables were used to generate groups of pupils for making comparisons of average HAKT Scores. The differences in group averages exceeded two standard errors of sampling for all four variables. Higher average HAKT Scores were obtained by pupils from wealthier homes, pupils in urban locations, female pupils, and older pupils. However, the magnitude of the differences between groups was most notable for the Socioeconomic Status (28.1 score points) and Location (34.0 score points) variables.

## Four Research-Based Conclusions

### 1. Low Knowledge Levels

Knowledge levels about HIV and AIDS among 75% of the Seychelles' Primary 6 pupils in 2007 were below SACMEQ's "minimal" benchmark (which was defined as mastery of at least half of the official school curriculum).

The Ministry of Education should ask the Centre for Curriculum to work with the University of the Seychelles to: (a) review the Personal and Social Education (PSE) curriculum in order to ensure that the teaching of some aspects of HIV and AIDS occurs as early as possible in the primary school programme, and (b) develop more effective instructional programmes that deliver improved pupil knowledge about HIV and AIDS. (Note that this work on teaching and learning materials will need to acknowledge that Seychelles Primary 6 pupils are on average about two years younger than pupils in other SACMEQ countries.)

### 2. Large Regional Differences in Knowledge

There were substantial differences in Primary 6 pupil knowledge levels about HIV and AIDS among education regions in Seychelles.

The Ministry of Education should: (a) investigate the reasons for these differences, and (b) find out why knowledge levels were so low in Western and Central regions.

### 3. A Pupil-Teacher "Knowledge Gap"

There was a large HIV and AIDS "knowledge gap" between the Seychelles' Primary 6 pupils and their teachers.

The Centre for Curriculum should organize a series of discussion meetings for school principals and teachers in order to make them more aware of the research results arising from the SACMEQ III Project, and to explore solutions to the issue of the large gap between teacher and pupil knowledge.

### 4. Demographic Differences in Knowledge

There were significant differences in knowledge about HIV and AIDS between groups of Seychelles' Primary 6 pupils defined by Socioeconomic Status, Location, Gender, and Age.

The Centre for Curriculum should take a lead role in monitoring these differences over time so as to ensure more equitable knowledge outcomes.

## A Concluding Comment

All children need to have the basic knowledge about HIV and AIDS that is required to protect and promote health. It is clear from the SACMEQ III Project research results that in 2007 the knowledge levels of Primary 6 pupils in Seychelles were among the lowest in the SACMEQ countries.

This is indeed alarming because Primary 6 pupils are moving towards 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 Ministry of 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 levels of primary school.

### References

Seychelles (2010). HIV-AIDS UNGASS Progress Report. Victoria: Government of Seychelles.

UNAIDS (2010). Global Report. New York: Joint UN Programme on HIV-AIDS.

Ministry of Health (April, 2011). HIV Dynamics. Victoria: Government of Seychelles.

### Authors

Andre Leste  
([aleste@gov.sc](mailto:aleste@gov.sc))

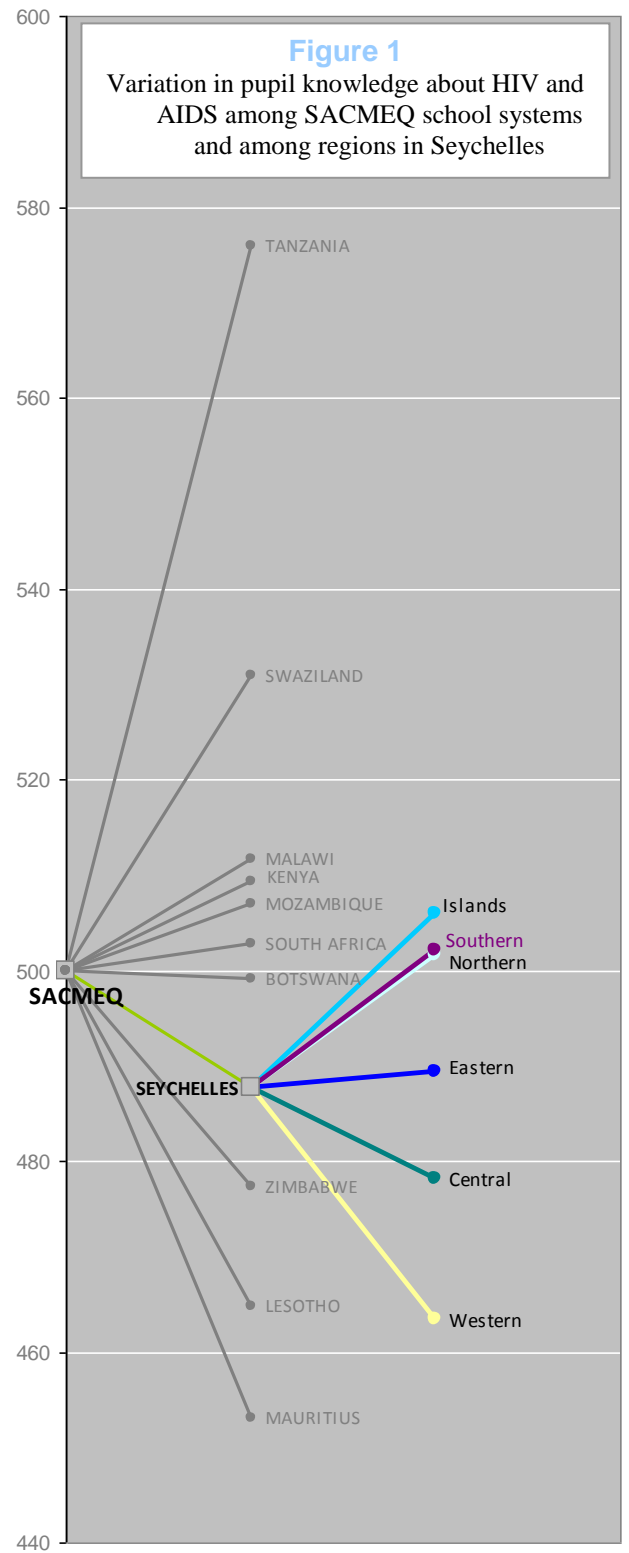
Egbert Benstrong  
([ebenstrong@gov.sc](mailto:ebenstrong@gov.sc))

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

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

	PUPILS		TEACHERS	
	HAKT Score	Reached Minimal Level (%)	HAKT Score	Reached Minimal Level (%)
TANZANIA	576	70	724	99
SWAZILAND	531	52	759	100
MALAWI	512	43	714	99
KENYA	509	39	793	100
MOZAMBIQUE	507	40	741	99
Seychelles: Islands	506	33	792	100
SOUTH AFRICA	503	35	781	100
Seychelles: Southern	502	34	834	100
NAMIBIA	502	36	764	99
Seychelles: Northern	502	28	762	100
ZANZIBAR	501	38	657	94
BOTSWANA	499	32	782	100
Seychelles: Eastern	489	28	770	100
UGANDA	489	33	708	98
ZAMBIA	488	35	744	98
<b>SEYCHELLES</b>	<b>488</b>	<b>25</b>	<b>789</b>	<b>99</b>
Seychelles: Central	478	20	802	96
ZIMBABWE	477	30	785	99
LESOTHO	465	19	751	98
Seychelles: Western	463	18	763	100
MAURITIUS	453	17	698	98
<b>SACMEQ</b>	<b>500</b>	<b>36</b>	<b>746</b>	<b>99</b>

**Figure 1**  
Variation in pupil knowledge about HIV and  
AIDS among SACMEQ school systems  
and among regions in Seychelles



**Table 2**  
Average HAKT Scores for Seychelles Pupils  
across Four Demographic Variables

DEMOGRAPHIC VARIABLE	1st Group	2nd Group	Diff (SE)
<b>Socioeconomic Status</b> (Low/High)	477.2	505.3	28.1 (4.1)**
<b>Location</b> (Isolated-Rural-Town/City)	486.6	520.6	34.0 (11.4)**
<b>Gender</b> (Males/Females)	478.2	497.7	19.5 (4.0)**
<b>Age</b> (Younger/Older)	482.6	492.9	10.3 (4.0)**

Diff = Difference