



Southern and Eastern Africa Consortium  
for Monitoring Educational Quality

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

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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 Mauritius was diagnosed in 1987. In 2009 around 8800 Mauritians were living with HIV, and around 100 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 Mauritius rose from around 250 in 2001 to around 750 in 2009 (UNAIDS, 2010: 186).

### 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.

Many National Ministries of Education have 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 HIV prevalence rate in Mauritius has been very low compared with many African countries, and levels of public awareness about this pandemic have therefore also been rather low. However, in recent years the Mauritius Ministry of Education has taken action to ensure that schools are provided with the staff training and teaching materials required to deliver effective HIV and AIDS prevention education programmes.

### 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 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 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 had 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 develop a valid SACMEQ HIV-AIDS Knowledge Test that would be suitable for administration to Standard 6 pupils and their teachers.

**It is important to note that for the SACMEQ III Project the average age of a Standard 6 pupil in Mauritius DURING 2007 was 11.4 years – which was 2 years below the SACMEQ overall average, and 3 years below Tanzania and Mozambique.**

## The SACMEQ HIV-AIDS Knowledge Test (HAKT)

The SACMEQ HIV-AIDS Knowledge Test (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 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/terminology; transmission mechanisms; avoidance behaviours; diagnosis/ treatment; and myths/misconceptions.

The HAKT was administered in late 2007 to 61,396 Standard 6 pupils and 8,026 teachers in 2,779 schools across the 15 SACMEQ countries. In Mauritius the HAKT was administered to 3,524 Standard 6 pupils and 408 teachers in 152 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 data collection for Mauritius covered 7 "regions" which were defined as follows:

- Region 1: Zone 1 (Port Louis/North)
- Region 2: Zone 2 (Beau Bassin/East)
- Region 3: Zone 3 (Curepipe/South)
- Region 4: Zone 4 (Vacoas/West)
- Region 5: Rodrigues
- Region 6: Black River
- Region 7: Private Schools

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

- (a) "**HAKT Scores**" – these were Rasch-scaled scores on the HAKT that were transformed to a SACMEQ overall Standard 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 assessed by the HAKT).

**Table 1** contains summarized information about these two scores for Standard 6 pupils and teachers in Mauritius' 7 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 fifteenth row of figures in **Table 1** indicated that: (a) the average HAKT Scores for pupils and teachers in Mauritius' Curepipe/South Region were 462 and 678, respectively, and (b) the percentages of pupils and teachers in Curepipe/South Region that reached the minimal level of knowledge on the HAKT were 19% and 100%, respectively.

**Table 2** contains the average HAKT Scores for groups of Mauritius' Standard 6 pupils defined by four demographic variables: Socioeconomic Status, Location, Gender, and Age. For example, the first row of figures in **Table 2** indicated that pupils from high socioeconomic status families had a higher average HAKT Score (474.1) than pupils from low socioeconomic status families (436.3), and that the difference between these averages (37.8) exceeded two standard errors of sampling (14.6).

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 Standard 6 pupils 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) Standard 6 pupil averages ranged from a low of 453 in Mauritius to a high of 576 in Tanzania, and (b) the Mauritius pupil average of 453 was well below the SACMEQ average of 500.

The average HAKT Minimal Knowledge Scores for Standard 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 results presented for countries in the second column of **Table 1** showed that the percentages of pupils with minimal knowledge ranged from a very low figure of 17% in Mauritius to 70% in Tanzania. That is, the percentages of pupils reaching the minimal knowledge level in Mauritius 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 Mauritius because in 2007 a majority of Standard 6 pupils (83%) 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 Standard 6 pupils in most countries lacking minimal knowledge.**

### (b) Mauritius' Education Regions

The figures for Mauritius' education regions presented in the first column of **Table 1** were all far below the SACMEQ average of 500. In fact the average HAKT Scores for all of Mauritius' education regions were below all other SACMEQ countries.

The average HAKT Scores for regions illustrated substantial between-region variation in Standard 6 pupil knowledge about HIV and AIDS. The highest average of 462 for the Curepipe/South Region was almost 50 score points above the average of 413 for the Black River Region.

The average HAKT Minimal Knowledge Scores for Mauritius' education regions in the second column of **Table 1** also highlighted substantial between-region

variations in Standard 6 pupil knowledge about HIV and AIDS.

For example, the percentage of pupils in the Curepipe/South Region (19%) that reached SACMEQ's minimal knowledge benchmark was almost four times higher than was observed for the Black River Region (5%).

## 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 Mauritius' education regions.

The figures showed that the average HAKT Score for teachers exceeded 700 for most SACMEQ countries. For SACMEQ overall it reached 746 – almost 250 points above the SACMEQ Standard 6 pupil average of 500. In Mauritius, the average HAKT Score for teachers was 698 – which was also almost 250 score points above the Mauritius Standard 6 pupil average.

In addition the percentages of teachers that reached SACMEQ's minimal knowledge benchmark of mastering at least one half of the official school curriculum were at, or close to, 100% for all SACMEQ countries and all Mauritius' education regions.

These major contrasts between the high knowledge levels of teachers and the very low knowledge levels of their Standard 6 pupils came as a surprise to the Mauritius SACMEQ Research Team. 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.

However, it must be recognized here that in late 2007 (at the time of the SACMEQ III Project data collection) Mauritius had not fully included HIV and AIDS prevention education initiatives in primary school programmes. In the SACMEQ III Project 71% of Standard 6 pupils in Mauritius reported that they had “never attended any classes/lessons on HIV and AIDS during the current school year”.

It will be interesting to undertake another SACMEQ national survey on this matter in several years when the wider introduction of HIV and AIDS prevention education programmes has had an opportunity to impact upon pupil knowledge levels.

## 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 Mauritius' Standard 6 pupils. Four variables were used to generate groups of pupils for making comparisons of average HAKT Scores. The differences in group averages were greater than two standard errors (\*\*) for the Socioeconomic Status variable, and almost greater than two standard errors for the Gender variable - with pupils from wealthier family backgrounds and female pupils having higher levels of knowledge about HIV and AIDS.

## Four Research-Based Conclusions

### 1. Low Pupil Knowledge Levels

**Knowledge levels about HIV and AIDS among more than four fifths (83%) of Mauritius' Standard 6 pupils in 2007 were below SACMEQ's "minimal" knowledge benchmark (which was defined as mastery of at least half of the official school curriculum). The Ministry of Education should (a) reinforce and improve HIV and AIDS prevention education programmes, and (b) monitor and evaluate the effectiveness of these programmes at regular intervals.**

### 2. Large Regional Differences in Knowledge

**There were substantial differences in Standard 6 pupil knowledge levels about HIV and AIDS among education regions in Mauritius. The Ministry of Education should: (a) investigate the reasons for these differences, and (b) find out why knowledge levels were so low in Black River**

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

**There was a large HIV and AIDS "knowledge gap" between Mauritius' Standard 6 pupils and their teachers. The Ministry of Education should investigate why well-informed teachers were not able to transmit this important knowledge to most of their pupils.**

### 4. Demographic Differences in Knowledge

**There were differences in knowledge levels about HIV and AIDS among groups of Mauritius' Standard 6 pupils defined by Socioeconomic Status and Gender. The Ministry of Education should: (a) expand and intensify the delivery of HIV and AIDS prevention education programmes in poorer communities, and (b) investigate why girls appear to know more about HIV and AIDS than do boys.**

## A Concluding Comment

It is clear from the SACMEQ III Project research results presented above that in 2007 more than four fifths of the Standard 6 pupils in Mauritius did not possess sufficient knowledge about HIV and AIDS.

This was indeed alarming because Standard 6 pupils (with an average age 11.4 years) are moving towards a stage of mental and physical development where they may soon become sexually active, and/or may choose to become involved in high-risk behaviours.

In recent years the Ministry of Education has made an excellent start on addressing this major challenge by taking action to facilitate the development and implementation of new HIV and AIDS prevention education programmes. These initiatives need to be strengthened and broadened so that all graduates from primary schools have the basic knowledge about HIV and AIDS that is required to protect and promote their health.

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**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
SOUTH AFRICA	503	35	781	100
NAMIBIA	502	36	764	99
ZANZIBAR	501	38	657	94
BOTSWANA	499	32	782	100
UGANDA	489	33	708	98
ZAMBIA	488	35	744	98
SEYCHELLES	488	25	789	99
ZIMBABWE	477	30	785	99
LESOTHO	465	19	751	98
Mauritius: Curepipe	462	19	678	100
Mauritius: Vacoas	461	18	699	99
Mauritius: Private	459	21	726	98
<b>MAURITIUS</b>	<b>453</b>	<b>17</b>	<b>698</b>	<b>98</b>
Mauritius: Beau Bassin	451	17	683	98
Mauritius: Port Louis	449	17	689	97
Mauritius: Rodrigues	446	14	704	93
Mauritius: Black River	413	5	757	100
<b>SACMEQ</b>	<b>500</b>	<b>36</b>	<b>746</b>	<b>99</b>

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

DEMOGRAPHIC VARIABLE	1st Group	2nd Group	Diff (SE)
<b>Socioeconomic Status</b> (Low/High)	436.3	474.1	37.8 (7.3)**
<b>Location</b> (Isolated-Rural-Town/City)	452.6	454.0	1.4 (9.0)
<b>Gender</b> (Males/Females)	446.4	460.0	13.6 (7.0)
<b>Age</b> (Younger/Older)	456.3	448.8	-7.5 (6.9)

Diff = Difference

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

