



Southern and Eastern Africa Consortium  
for Monitoring Educational Quality

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

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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 Malawi was diagnosed in 1985. In 2009 around 920,000 Malawians were living with HIV and around 120,000 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 Malawi rose from 430,000 in 2001 to 650,000 in 2009 (UNAIDS, 2010: 186).

The UNAIDS organization has reported that the HIV prevalence rate in Malawi for adults aged 15-49 years in 2009 was 11.0% (UNAIDS, 2010: 181). This represented a slight improvement on estimated rates from earlier years. This trend has been partly attributed to reductions in high-risk behaviour – but may also 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 Malawi Ministry of Education, Science, and Technology 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 HIV and AIDS that will protect and promote their 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 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 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 only 5 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 Standard 6 pupils (who have average ages of 13.5 years across the SACMEQ countries and 14.1 years in Malawi) 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 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 and terminology; transmission mechanisms; avoidance behaviours; diagnosis and treatment; and myths and 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 Malawi the HAKT was administered to 2,781 Standard 6 pupils and 264 Standard 6 teachers in 139 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 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 that was assessed by the HAKT).

**Table 1** contains summarized information about these two scores for Standard 6 pupils and teachers in Malawi education divisions and 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 first row of figures in **Table 1** indicated that: (a) the average HAKT Scores for pupils and teachers in Malawi's South East Division were 595 and 721, respectively, and (b) the percentages of pupils and teachers in South East Division that reached the minimal level of knowledge on the HAKT were 80% and 100%, respectively.

**Table 2** contains the average HAKT Scores for groups of Malawi's Standard 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 from high socioeconomic status families had a slightly higher average HAKT Score (513.5) than pupils from low socioeconomic status families (510.0), but that the difference between averages (3.5) did not exceed two standard errors of sampling (19.6).

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 Malawi pupil average of 512 placed Malawi above the SACMEQ average and third in line behind Tanzania and Swaziland.

**These average HAKT Scores for SACMEQ countries were dangerously deceptive. For example, they suggested that Grade 6 pupil knowledge levels about HIV and AIDS in Malawi were “satisfactory” because the average score for Malawi was higher than the average for all but two SACMEQ countries. However, an examination of average HAKT Minimal Knowledge Scores suggested the need for a different conclusion!**

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: (a) the percentages of pupils with minimal knowledge ranged from 17% in Mauritius to 70% in Tanzania, and (b) the percentage of Malawi’s pupils that reached the minimum knowledge level was a low value of 43%. That is, the percentage of pupils reaching the minimal knowledge level in Malawi 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 Malawi because in 2007 a majority (57%) of Standard 6 pupils lacked the minimal knowledge about HIV and AIDS that is required for protecting and promoting 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) Malawi’s Education Divisions

The figures for Malawi’s education divisions presented in the first column of **Table 1** showed very large variations in Standard 6 pupil knowledge about HIV

and AIDS. The very high average HAKT Score of 595 for South East Division placed it far above the highest scoring SACMEQ country (Tanzania). In contrast, the average HAKT Score for Northern Division (451) placed it below the lowest scoring SACMEQ country (Mauritius).

The average HAKT Minimal Knowledge Scores for Malawi’s education divisions in the second column of **Table 1** also highlighted substantial variations in Standard 6 pupil knowledge about HIV and AIDS. The percentage of pupils in South East Division (80%) that reached SACMEQ’s minimal knowledge benchmark was more than four times higher than South West (16%) and Northern (18%) Divisions.

## 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 Malawi’s education divisions. The figures showed that the average HAKT Score for teachers exceeded 700 for most SACMEQ countries and for SACMEQ overall it was 746 – almost 250 score points above the pupil average of 500.

In Malawi, the average HAKT Score for teachers was 714 at the national level, and exceeded 700 for all but one education division. 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 around 100% for all SACMEQ countries and most of Malawi’s education divisions.

The major contrast between the high knowledge levels of teachers and the very low knowledge levels of their Standard 6 pupils came as a complete surprise to Malawi’s 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.

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.

One area of enquiry that deserves attention is to investigate whether it is the case that teachers have adequate subject matter knowledge – but lack training in the pedagogy of “how to teach” topics that require discussions about human sexuality.

## 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 Malawi's Standard 6 pupils. Four variables were used to generate groups of pupils for making comparisons of average HAKT Scores. Differences in group averages were greater than two standard errors (\*\*) for Gender groups – with boys demonstrating higher knowledge about HIV and AIDS. No significant differences were observed for pupil groups defined by Socioeconomic Status, Location, and Age

## Four Research-Based Conclusions

### 1. Low Pupil Knowledge Levels

Knowledge levels about HIV and AIDS among 57% of Malawi's Standard 6 pupils during 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, Science, and Technology 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. Differences in Knowledge Among Divisions

There were large differences in Standard 6 pupil knowledge levels about HIV and AIDS among education divisions in Malawi. The Ministry of Education, Science, and Technology should: (a) investigate the reasons for these differences, and (b) find out why knowledge levels were so low in South West and Northern Divisions.

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

There was a large HIV and AIDS "knowledge gap" between Malawi's Standard 6 pupils and their teachers. The Ministry of Education, Science, and Technology 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 significant differences in knowledge about HIV and AIDS between groups of Malawi Standard 6 pupils defined by Gender. The Ministry of Education, Science, and Technology should mount a research study to find out why girls appear to have significantly lower levels of knowledge about HIV and AIDS than boys.

## A Concluding Comment

All children need to have the basic knowledge about HIV and AIDS that is required to protect and promote their health. However, it is clear from the SACMEQ III Project research results that a majority of Standard 6 pupils in Malawi during 2007 did not have this minimal level of knowledge.

This was indeed alarming because Standard 6 pupils in Malawi (average age 14.1 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 Ministry of Education, Science, and Technology 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.

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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 (%)
Malawi: South East	595	80	721	100
TANZANIA	576	70	724	99
Malawi: Central West	538	55	707	96
Malawi: Shire Highlands	538	59	724	100
SWAZILAND	531	52	759	100
<b>MALAWI</b>	<b>512</b>	<b>43</b>	<b>714</b>	<b>99</b>
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
Malawi: Central East	498	34	724	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
Malawi: South West	455	16	681	100
MAURITIUS	453	17	698	98
Malawi: Northern	451	18	727	100
<b>SACMEQ</b>	<b>500</b>	<b>36</b>	<b>746</b>	<b>99</b>

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

DEMOGRAPHIC VARIABLE	1st Group	2nd Group	Diff (SE)
<b>Socioeconomic Status</b> (Low/High)	510.0	513.5	3.5 (9.8)
<b>Location</b> (Isolated-Rural/Town-City)	514.8	501.7	-13.2 (11.7)
<b>Gender</b> (Males/Females)	523.3	499.7	-23.6 (9.2)**
<b>Age</b> (Younger/Older)	509.4	514.1	4.7 (9.4)

Diff = Difference

**Figure 1**  
Variation in pupil knowledge about HIV and  
AIDS among SACMEQ school systems  
and among divisions in Malawi

