

# **A Generalizable Model for Educational Policy Research in Developing Countries**

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## **Abstract**

The Southern Africa Consortium for Monitoring Educational Quality (SACMEQ) is a network of fifteen Ministries of Education that undertake educational policy research focused on providing information that will lead to improved decisions concerning planning the quality of education. This article describes SACMEQ'S philosophical foundations, objectives, structural mechanisms, and some of SACMEQ'S research results

SACMEQ'S initial educational policy research project, SACMEQ-1, collected data in seven Southern Africa countries from over 20,000 pupils and some 2,000 teachers in 1,000 schools (Kariuki, Guantai, & Nzomo, in press; Kulpoo, 1998; Machingaidze, Pfukani, & Shumba, 1998; Chimombo & Milner in press; Nassor, 1998; Nkamba & Kanyika, 1998; Voigts, 1998b). Five national SACMEQ-1 policy reports have already been published and another two are in preparation. These reports have all figured prominently in debates concerning policy on improving the quality of education in the Southern Africa sub-region. The article illustrates the innovative and effective "working style" that has been adopted by SACMEQ, and suggests that this approach could be transferred to educational development and capacity building projects in other regions of the world.

## **Introduction**

There has been a worldwide growth of interest in the application of large-scale scientific survey research techniques to the study of issues related to improving the quality of education. Many developed countries are now applying these techniques to undertake systematic studies of the conditions of schooling and of student achievement levels. In developing countries, there have been increased efforts to identify ways in which educational planners in Ministries of Education can learn to conduct these kinds of policy research studies by using modern computer-based methodologies.

In order to respond to needs in this area, the International Institute for Educational Planning (IIEP) has been working closely with a number of Ministries in the Southern Africa sub-region to implement long-term strategies for building the capacity of educational planning units to (a) monitor the quality of their education systems, and (b) use this information to make informed policy decisions. The IIEP's strategy has been to provide integrated training and research opportunities in a "learning by doing" approach that enables educational planners to acquire policy research skills through participating in the conduct

of well-designed cross-national studies.

One of the major outcomes of this initiative has been the implementation of a cross-national survey of schools that gathered data about the conditions of schooling and reading literacy levels of pupils at the upper end of primary school (Saito, 1998 b). A total of seven countries completed this important study during the period 1995 to 1998 as part of the Initial Project of the Southern Africa Consortium for Monitoring Educational Quality (now known as SACMEQ-D. Fifteen countries have participated in the Pilot Study of SACMEQ-II in 1999. The SACMEQ model is now regarded as one of the most innovative and exciting concepts that has ever occurred in the field of educational planning for a number of reasons.

This paper does not attempt to merely present the research results, but to portray three main features of SACMEQ approach and working style that can be generalized to developing countries in any other region in order to arrive at a high quality policy research implemented in the highly committed environment. They are (1) focus on high-priority policy issues; (2) institutional capacity building; and (3) comparability of information collections related to educational achievement.

Figure I: SACMEQ Policy Cycle



## **Generalizable Component # I: Focus on high-priority policy issues**

One of the most important generalizable features of SACMEQ lies in the "policy thread" that runs throughout the entire research cycle. That is, the research cycle starts with policy concerns, moves through a highly systematic and focused applied research cycle, and then is completed with research-based suggestions about how to address the initial policy concerns (see Figure 1).

The SACMEQ'S Initial Project started its research with the identification of educational policy concerns in seven countries by interviewing senior decision-makers in Ministries of Education on their high-priority concerns about the quality of education. These interviews included inputs from Ministers, Permanent Secretaries Regional Directors, and Senior Education Planners. A short list of questions was then generated for those policy concerns that received the highest ratings (Kariuki et al 1995).

1. What are the baseline data for selected educational inputs to primary schools in the sub-region?
2. How do the conditions of schooling in each participating country compare with the Ministry's own benchmark standard?
3. Have educational inputs to primary schools in the participating countries been allocated in an equitable fashion?
4. What is the level of reading for Grade 6 pupils overall and in the three domains of reading literacy?

For each general policy question, a set of specific research questions was prepared, which provided clear guidance concerning the indicators that would be required, and the way in which these indicators should be tabulated. For instance, the fourth policy question above involved the examination of different sub-groups of Grade 6 pupils as well as different domains of reading achievement and mastery levels according to the Ministries own benchmark standards. Figure 2 shows the process of moving from a general policy concern to a policy suggestion using the results from one of the SACMEQ countries, Mauritius, as an example.

Figure 2: Moving from Policy Concern to Policy Suggestion

Policy Concern: Young people in the Southern Africa sub-region do not appear to be learning the basic skills at school. In particular, the senior officers of the Ministry would like to know whether children in primary schools can read.



Policy Question: What is the level of reading for Grade 6 pupils overall and in the three domains of reading literacy?



One of the Specific Research Questions: What are the reading achievement levels of different sub-groups of Grade 6 pupils?



One of the Tables from the Results from Mauritius: Means and sampling errors of different sub-group of pupils

	Narrative		Expository		Documents	
	Mean	SE	Mean	SE	Mean	SE
<i>Gender</i>						
Boys	11.7	0.35	10.5	0.33	8.6	0.23
Girls	12.4	0.35	11.2	0.33	8.8	0.23
<i>Socio-economic level</i>						
Very low (0-8)	9.6	0.54	8.9	0.48	6.9	0.37
Low (9)	11.3	0.63	10.0	0.60	8.4	0.43
Moderately low (10)	11.6	0.59	10.3	0.53	8.5	0.38
Moderately high (11)	12.3	0.55	11.1	0.53	8.7	0.38
High (12)	13.1	0.59	12.0	0.57	9.4	0.37
Very high (13-14)	14.2	0.63	12.6	0.64	10.3	0.40
<i>School location</i>						
Isolated	9.6	1.07	8.6	1.01	6.9	0.73
Rural	11.3	0.35	10.3	0.32	8.1	0.23
Small town	12.8	0.79	11.0	0.71	8.9	0.54
City	13	0.41	11.7	0.40	9.5	0.26
Mauritius	12.1	0.25	10.9	0.23	8.7	0.17



One of the Policy Suggestions from Mauritius Report: The Curriculum Branch should be asked to examine pupil performance on each of the 59 items of the reading test in order to identify those aspects of the teaching of reading that need to be reviewed and/or improved

Source: Kulpoo 1998.

Policy suggestions were made by combining several interpretations with several results. After preparing fundamental policy suggestions, they were combined into a comprehensive "agenda for action". In order for the "agenda for action" to be useful for the decision-making process, two conditions were taken into account: first, policy suggestions were prioritized by certain criteria; and second, resource and time requirements were specified (see Figure 3)

Figure 3: Categorization of Policy Suggestion into Prioritized Agenda for Action

<b>Policy Question:</b> What is the level of reading for Grade 6 pupils overall and in the three domains of reading literacy?			
<p><u>Policy Suggestion 1:</u></p> <p>The Curriculum Branch should be asked to examine pupil performance on each of the 59 items of the reading test in order to identify those aspects of the teaching of reading that need to be reviewed and/or improved.</p>	<p><u>Policy Suggestion 2:</u></p> <p>The Ministry should establish a Reading Literacy Task Force at the primary school level in order to undertake a comprehensive investigation into why the reading skills of Grade 6 pupils in Mauritius are so poor in comparison with the 'minimum' and 'desirable' performance standards set down by the Mauritian reading specialist.</p>	<p><u>Policy Suggestion 3:</u></p> <p>The Ministry should undertake an investigation into the wide variation among districts with respect to the mastery of basic literacy at the Grade 6 level, taking into account the extremely poor performance of pupils in Black River and Rodrigues.</p>	<p><u>Policy Suggestion 4:</u></p> <p>The Ministry should design and implement a continuous system for monitoring literacy levels in primary schools which should feature a detailed analysis of sub-groups of students broken down by variables such as district, gender, socio-economic level, and school location.</p>
<p>Group 1: Consultation with staff, community and experts</p>	<p>Group 4: Education policy research project</p>		
<p>Short term Low cost</p>	<p>Medium term Low cost</p>	<p>Medium term Low cost</p>	<p>Medium term Moderate cost</p>
<p>Immediate action is Required.</p>	<p>Further review is required before action is taken.</p>		

Source: Kulpoo 1998.

For the first condition, the policy suggestions were categorized into five different groups: (1) consultations with staff, community, and experts, which call upon the Ministry to have communication with major stakeholders in the education system; (2) review of existing planning and policy procedures, which identifies established practices in the policy and planning area which needed to be evaluated; (3) data collection, which requires the Ministry to collect important information that would be useful for planning purposes; (4) educational policy research projects, which identifies an educational policy research programme for the Ministry; (5)

investment in infrastructure and human resources, which requires the Ministry to mobilize and/or reallocate funds for professional development, teaching materials, and buildings.

For the second condition, each policy suggestion also specified such factors as: (a) department that is primarily responsible, (b) data source, (c) planning level, (d) time required, and (e) costs required. This information served as a very powerful guide that the decision-makers can study and choose in order to respond successfully to the original policy concerns.

The consultation meeting between the planners and the decision-makers provided an opportunity to (a) assess the validity, consistency, and compatibility of these new policy suggestions with the other planned or on-going actions; and (b) further identify the immediate priority and develop the implementation plan based on the cost-benefit potential consequence of the implementation, and the resource constraints.

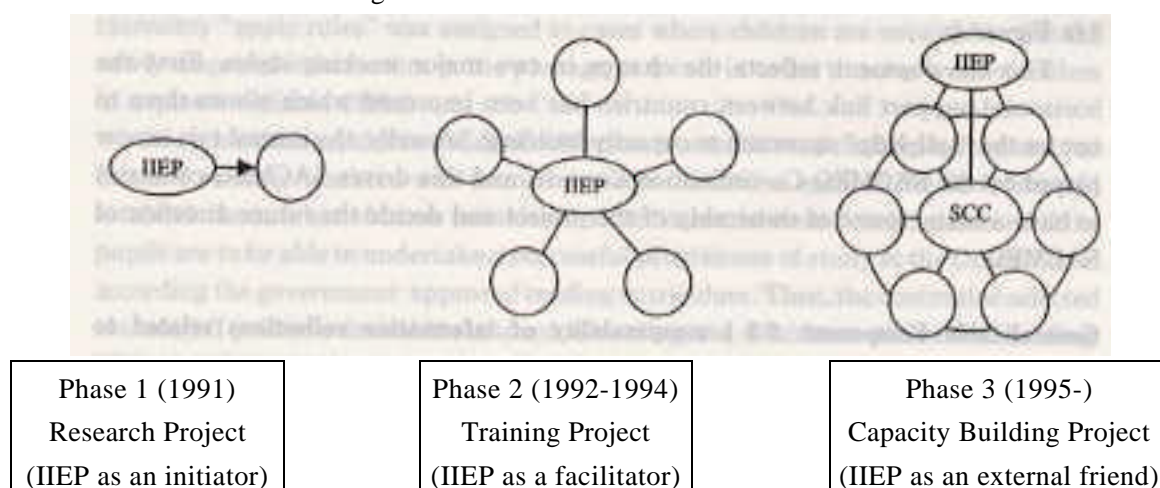
For example, out of the total of 38 policy suggestions made in the report, the Ministry of Education and Culture of Mauritius has decided to take immediate action on the policy suggestions listed under Group I (consultations) and Group 2 (reviews) which require no extra expenditures (because they can be absorbed within existing budget allocations) and relatively short timeframe. The examination of the test items (the first suggestion above) requires immediate action. The implementation decision on the rest of the policy suggestions will depend on the progress of implementation of this first set of policy suggestions. As a plan, they have specified that the second phase action would be taken by the Ministry on the suggestions in Group 3 (data collection) when the immediate action in Groups I and 2 has been completed. Further review will be necessary before action is taken by the Ministry for the suggestions in Group 4 (research project). Preliminary planning on a few high-priority suggestions in this group can commence by consulting neighboring countries, international agencies, and/or existing literature. For example, a study designed to investigate reasons for the poor reading levels of Grade 6 pupils in comparison with standards set down by the Ministry's own experts would require a further review and consultation. Finally, action by the Ministry can be taken only after a "partnership" with some donor agencies has been established for the suggestions in Group 5 (investments) (Kulpoo, 1998).

As shown above, the national policy report of each SACMEQ country was prepared in order to provide clear answers to the policy issues that were challenging senior education decision-makers. The information contained in these reports provided important guidelines for ministerial decisions on school inputs and the performance of pupils. As a result, the reports have figured prominently in national and international debates. In Mauritius, the initial draft of the report had figured prominently in an early review of progress linked to their Education Master Plan. In Namibia, the report was included as a larger on-going Ministry review of efficiency and effectiveness. In Zanzibar, the report was used by the Office of the Commissioner for Education to guide the implementation of reforms related to the conditions of schooling. In Zimbabwe the report was as part of the deliberations of the Presidential Commission for Education (Voigts, 1998a). These reports have also been featured during a couple of Assembly Meetings by the Ministers of Education in Southern Africa sub-region during 1997 and 1998.

## Generalizable Component # 2: Institutional capacity building

Another important generalizable aspect of SACMEQ is related to the evolution in the IIEP's involvement in the network. Through the implementation of the SACMEQ-I, the IIEP adapted its role from "initiator" in the Research Phase to "facilitator" in the Training Phase and then to "external friend" in the Capacity Building Phase (see Figure 4).

Figure 4: Evolution of IIEP's Involvement



SACMEQ commenced operations as a bi-lateral working arrangement between the IIEP and the Ministry of Education and Culture in Zimbabwe when the IIEP conducted a research study on Indicators of the Quality of Education in 1991 (see Phase I in Figure 4). Through this study, the members of the Policy and Planning Unit received intensive training on the preparation of questionnaires and tests, the training of field staff, sampling, project management methods, computer-based data preparation and the basic steps of computer-based file building and data management (ROSS & Postlethwaite, 1992; Ross, 1995).

Based on the experience gathered during the 1991 project, a series of training courses was organized during the period 1992 to 1994, in order to provide educational planners from other countries in the sub-region with the technical skills and research materials required to undertake a national survey of primary schools (see Phase 2 in Figure 4).

It was during this period that participants prepared a proposal for countries in the sub-region to launch a joint research project to monitor progress on the achievement of the educational quality goals defined by the Jomtien Conference for Education for All in 1990 (Moyo et al, 1993). The proposal was submitted to the IIEP by educational planners from five Ministries and asked the IIEP for guidance in the establishment of a network that would enable educational planners from different countries across the Southern Africa sub-region to work together, to share their experience, and to learn from each other (SACMEQ, 1997).

In 1995, SACMEQ was officially launched, and the SACMEQ'S initial project was

implemented in seven countries (Kenya, Malawi, Mauritius, Namibia, Zambia, Zanzibar, and Zimbabwe). Each participating Ministry of Education mobilized resources and staff in order to print the data collection instruments, arrange transport and train data collectors and data entry technicians. Towards the end of 1996, the SACMEQ Co-ordination Centre (SCO) was registered as a non-governmental organization with Headquarters at the UNESCO Office in Harare, Zimbabwe (see Stage 3 in Figure 4)

This development reflects the change in two major working styles. First the horizontal support link between countries has been improved which allows them to opt for the "self-help" approach to capacity building. Secondly, the central role is now played by the SACMEQ Co-ordination Centre, and this drives SACMEQ countries to have a better sense of ownership of the project and decide the future direction of SACMEQ.

### **Generalizable Component # 3: comparability of information collections related to educational achievement**

The third crucial generalizable aspect of SACMEQ is the fact that the SACMEQ data archive allows countries to compare the information with a wide variety of "reference points" such as: (a) comparison against Ministries' own benchmark standards; (b) comparison across countries in the sub-region; (c) comparison with other countries who participated in a large-scale international educational survey; (d) and comparison with different time periods.

One of the important methodological contributions of the SACMEQ project is to be found in the way in which the SACMEQ researchers ensured that the pupil reading tests were fair across participating countries with potentially different reading curricula. This outcome was achieved by using detailed curriculum blueprints from all participating nations to guide the construction of test items (Kariuki 1995).

Test items for the SACMEQ-1 study were based on three sources of information reading tests used by the IEA reading literacy study; reading tests developed for the IIEP Zimbabwe Grade 6 study conducted in 1991; and newly-written test items contributed by the National Research Co-ordinators (NRCs) of the participating countries. Three different aspects of reading were examined: narrative prose, expository prose, and documents. These three aspects were defined as:

- 1) Narrative prose: continuous texts in which the writer's aim was to tell a story, whether fact or fiction. They normally followed a linear sequence and were usually intended to entertain or involve the reader emotionally.
- 2) Expository prose: continuous texts that were designed to describe, explain, or otherwise convey factual information or an opinion to the reader.
- 3) Documents: structured information presented in the form of tables, maps, graphs lists, or sets of instructions. The pupils were requested to search, locate, and process selected facts rather than read every word of continuous text Furthermore, different types of reading skills were assessed using these test items.



For example, when a test item requires the pupils to identify the exact word (or phrase) in the passage in order to respond, it is categorized as "verbatim". If it requires children to grasp the overall meaning of the passage it is classified as "main idea". The highest taxonomy "apply rules" was assigned to cases where children are required to use the newly-acquired information in the passage as a rule in order to solve a new problem in a question (Saito, 1998a).

In each country, prior to the data collection, a committee of reading specialists and Grade 6 reading teachers was formed in order to review each of the 59 items and establish the sub-set of items considered to be "essential items" to be mastered if the pupils are to be able to undertake a successful programme of study at the Grade 7 level according to the government-approved reading curriculum. Then the committee selected two cut-off points: a desirable standard of reading and minimum standard of reading. With this information, it was possible to calculate the percentage of pupils in each country reaching the minimum and, separately, the desirable level of reading as specified in each country.

The test items for SACMEQ-II with its complex link with various studies will allow the SACMEQ researchers to compare the achievements with SACMEQ-1 Reading Study, IIEP's Zimbabwe Study, IEA's Reading Study, and IEA's Third International Mathematics and Science Study (TIMSS).

## **Conclusion**

The paper has addressed three SACMEQ features that have helped to optimize its contributions to the field of educational planning in the Southern Africa sub-region

The long-term objective of SACMEQ is to expand its integrated training and research programmes in order to reach more educational planners in more African countries. This important initiative will seek to facilitate and broaden opportunities for those educational planners that have received advanced training via SACMEQ to share their knowledge, skills and experience with other colleagues.

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