

**What can we learn about improving teaching and learning from
comparing policies across countries?
A study of student achievement and teacher quality in Southern Africa.**

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Abstract

This paper will examine student achievement and teacher quality under different policy approaches in five countries (South Africa, Botswana, Mozambique, Tanzania and Namibia) by looking at variables around teaching (goals, methods, teacher experience, training and support) and examining these in light of student performance and school capacity. Using the SACMEQ II data archive, our study compared and described at the national level how pupil characteristics and social context interact with schooling inputs and capacities (e.g. teacher characteristics, school and classroom-level inputs) to impact student performance. While more research in this area is necessary, the findings of this study help us begin to explain how teachers and schools are responding to the complex pressures of school reform - particularly in developing and/or transitional societies and enable us to begin to assess whether and how policies can be designed to improve teaching and learning to facilitate democratic transitions/development.

Introduction

Despite the same broad policy agenda (e.g. reforms designed to increase enrollment, equity and improve educational quality) in five South African countries—South Africa, Botswana, Mozambique, Tanzania and Namibia—impact on teacher characteristics (e.g. teaching approach, access to professional development, quality of professional development) and student achievement in mathematics and reading vary greatly by country. In this paper we use the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ II) data to explore school reform policy implementation and the relationship between teacher quality and resources and student achievement in different countries.

The first phase of this study included a literature review and preliminary analyses of the SACMEQ II data. We describe differences in student, teacher and school characteristics and the policy context for each country. Using regression analysis, we explore student achievement and the relationship between teacher and school characteristics influenced by school reform policy. The central research questions are: What student, teacher and school factors influence student achievement? How do these factors vary by country?

What is the policy context characterized by each country's school reform efforts? What policy implications emerge from the findings of this study? Our research questions explore how national policies differentially shaped resource allocation, signaling particular values and public support of education, and how those policies ultimately impacted teaching and student achievement.

This study is informed by Carnoy and Marshall's (2005) analysis comparing Cuban primary students' academic performance with the rest of Latin America. Similar comparisons of the policy impacts on teaching and learning across South African countries do not exist prior to this study. However, such comparative analyses can provide valuable insight into school reform policies and school effectiveness. It is our hope that this study begins the important and necessary exploration of the impact of reform policies designed to address equity, build school capacity and enhance teacher quality on pupil learning in a variety of national contexts. We believe such explorations are critical to the understanding of effective school reform efforts and will be instructive to the countries included in the study.

The second phase of this project (which will be conducted over the next two years and is not included in this paper) will consist of qualitative school-based case studies. A key part of this second stage of analysis will be mapping out the local community context to describe the social and political influences on school system organization and its links to classroom teaching and learning. In addition, we will continue to explore the SACMEQ II data archive to conduct multi-level analyses to control for the clustered nature of the data (e.g. students are clustered in classrooms, schools and countries) (see Bryk and Raudenbush, 2002 for a discussion of hierarchical linear analyses).

The next section of this paper reviews some of the relevant literature and research related to our project and provides the framework for our study.

Why do learners in some countries do better than learners in others?

A dominant theme in educational reform today is improving school quality and student achievement – yet, there is considerable disagreement over precisely how to do so. Recent discussions on educational reform policies in both developed and developing countries has centered on the need for better trained teachers and greater community involvement in schools, but with increased accountability (Carnoy, 1999).

Individual students' family background explains much of the variation in academic performance in both developed and developing countries (See studies by Carnoy and Marshall, 2004; Coleman et al., 1966; Lockheed and Verspoor, 1991; Rothstein, 2004). Children may do better in school because their parents have higher levels of schooling, their families may have made sustained investments in education, or caregivers may also be more willing to put more effort into their children's academic achievement. Coleman (1988) characterizes this as "social capital".

Variables available in the SACMEQ II data archive includes many home background measures such as the levels of material possessions at home, the education of parents and the nutrition that learners have to sustain their physical health. Increasingly, research studies are suggesting that learners from homes with a combination of higher levels of possessions and higher levels of parents' education have greater opportunities and learning support than those from homes with lower levels of these measures. Using the SACMEQ II data archive, we can we comparatively map out the social context of schooling (and relative social capital of students in schools) given similar regional resources and concerns.

School quality – especially teacher quality also has an impact on students' academic performance. Some countries are better able to recruit and retain more educated and more able teachers, some more adequately support teachers once they are in schools in financial terms and in terms of public support for teachers including higher status as a professional. For example, Carnoy and Marshall (2005)¹ found that despite the fact that Cuban teachers earned low wages, their earnings were similar to other professions. Therefore, recruiting the best and brightest into teaching was easier in Cuba than in countries with very unequal income distributions. Despite nearly two decades of educational expansion and direct attention on education many young people in the region still do not appear to be learning basic skills. According to a UNESCO report *Assessment of Basic Education in Sub-Saharan Africa (1990-2000)* strategies designed to increase enrollment have led to further challenges and strains on the system – particularly in terms of materials they need to provide and simply in terms of physical space. Overcrowding of schools and classrooms has obvious effects on the instructional practices that take place in classrooms, but it also contributes to feelings of disillusionment and being overwhelmed on the part of teachers (Spren, 2005). Several studies of school effectiveness have pointed to the widespread problem of teacher inertia and its various inter-related roots. Well-meaning teachers are discouraged by the under-equipped, understaffed and over-crowded conditions in schools. They are disappointed by the failure of many parents to participate in school activities and frustrated by parent indifference towards their child's education. Many feel their own efforts are not supported by the community or society at large. In many post-independence states, misdirected equity and redress reforms attempted to move well-trained teachers to the most remote, historically disadvantaged school resulting in teachers resisting and spending much time and energy trying to avoid being relocated or sent to under-resourced regions.

As we show with the SACMEQ data, in some countries teachers are more motivated to teach, their schools are better resourced and are in better physical condition and classrooms have more materials than elsewhere. Moreover, we believe these factors result in teachers having higher expectations of their students, teachers and students show up for class more consistently, absenteeism is lower, so kids get more class time.

¹ Carnoy et als spent four years analyzing the impact of educational reforms on school improvement and educational effectiveness and equity in four Latin American countries.

This study asserts that teachers are the center of any effort to improve or reform education and that teachers' role in implementing reforms and their significance in improving student achievement has been undermined by many of the recent policy reforms. Even where teachers were central to reform – they were often passive recipients of top-down policies – that ignored mechanisms for creating fundamental shifts in beliefs and practices. While this study asserts that good teaching produces good learning opportunities which are the most significant ways to improve student achievement, in Southern Africa pressures from international monetary agencies and intergovernmental organizations to cut spending on preservice and inservice teacher education and lower salaries for teachers, have pushed policymakers away from focusing on teacher professional development and support as a key policy strategy. And, unfortunately in this part of the world, the most salient features of education reform are determined not by what works best in schools, but instead by economic globalization or finance-driven policy strategies. Under significant influence from conservative think tanks and global financing organizations ideas about reform and school improvement are framed within the international debates of accountability, decentralization and efficiency (Carnoy, 2004).

Access to Quality Schools in Southern Africa

Across Southern Africa, approaches to education policy formation vary widely between countries depending on their colonial historical legacy and their inherited patterns of interactions between civil society and the state (and its institutions). Nonetheless, the common framework for addressing education reforms in Southern African countries in the post-independence period was established in 1990 by the Jomtien Education for All Conference. To many governments, it provided a powerful push to address declining educational access, quality, equity, efficiency and relevance. Education for All (EFA) redefined and reshaped goals, principles and processes of education policy formulation in the region. Hence, education formulation, planning, management and implementation across Southern Africa occurred within a context shaped by the need to find solutions to enormous social and educational challenges, while simultaneously serving the diverse needs of an emerging democratic state, as well attending to the imperatives of globalization

As a result of many more countries adopting EFA goals and observing the official admission age 7², the net enrollment rate in most of Southern Africa increased about 10%

² While it is beyond the preveue of this paper, we wish to raise the issue of the relatively late start rate for education – as we feel it reflects a limited commitment to education on part of governments. Although ECE is recognized as playing an important role in education governments have neither the financial nor administrative capacity to engage in providing this service on a large scale. Most children don't start school until age 7 (check this) and even where ECE exists the quality of pre-schooling differs widely, contributing to large disparities in delivery. Research literature on the cognitive impact of ECE suggests the most important developmental years for literacy and numeracy are between the ages of 2 and 6. Lack of services and long-term strategies for pre-schools- "side programs" have not been addressed by most Ministries of Basic Education (ADEA, 2000).

over the last decade. Yet, worth noting is that towards the end of the 1990s, almost 60% of eligible children were not starting Grade 1 at the official age (ADEA,2000). Interestingly, there are considerable differences among Southern African countries, with enrollment rates ranging from 30 to 100 percent and retention rates ranging from 20 to 70 percent. Yet, despite sweeping gains in enrollment rates across the region, retention and attrition rates are often ignored by researchers and policymakers. Deciding when and for how long learners should go to school is determined by a variety of factors (see Spreen and Vally, 2005 for an extended discussion on enrollment, retention and attrition rates in the region) – community judgments on school quality are among them. In a recent study researchers indicated that “although the direct costs of education play a major role in discouraging poor families from sending children to schools, this is especially acute when the quality of schooling is low” (ActionAid, 2002,25). Hence, governments must not only consider enrollment rates, they must also consider the average throughput or “survival” rate of children particularly those reaching grade 6 where statistics indicate that progression rates sharply decline in later grades (Spreen and Vally, 2005).

Despite pledges to meet to challenge of “free and compulsory access to basic education for all” proposed in the Dakar Framework, in most African countries children have to pay to go to school. According to a recent study by ActionAid (2002) the direct and indirect costs of schooling are one of the most significant factors excluding children from education. Moreover, these estimates don’t begin to address vast numbers of out of school youth who don’t attend school or are excluded from school for a number of reasons including: being orphaned/caring for sick parents, working out of home, tribal resistance, disability, migrant status, remotely location or because of perceived language barriers (ActionAid, 2004).

As previously suggested, school fees whether mandatory or “recommended” are increasingly being imposed on learners, and educational costs to African families (when measured as a percentage of family income) are extremely high. Even where primary education is free, parents are still making major financial contributions, some of which are effectively compulsory while others (though considered voluntary) are requested with considerable social pressure. Despite its illegality, non-payment can lead to exclusion or stigmatization of students. The cost of sending children to school can include: books, stationary and equipment, uniforms, admission fees, building and maintenance fees, transportation, meals, sports and library fees, among others. For a poor family with several children the total costs of sending all children to school can pose a substantial burden. Throughout Africa, the proportion of household income needed to educate a child is much greater than in Asia or Latin America and the Caribbean (ActionAid, 2002, 24). There is little doubt that the single biggest obstacle to schooling for most children in Africa is the cost.

Worth noting is that, during the last decade in Botswana education was given the highest priority in the allocation of resources with recent figures indicating that nearly a quarter of the budget went to education in 2000. At independence only 20 percent of school age children were enrolled in primary school in Botswana (Botswana SACMEQ Country Report 2005) and by 1996 the country had a nearly 96% enrollment rate, with 100%

enrollment projected by 2005. Across the region these findings are reinforced by the recent experiences of Tanzania and Malawi, where remarkable exponential increases in enrolment were followed by the abolition of user fees (ActionAid, 2002, p.25). Yet these figures also require further examination. The average throughput rate - the differential between children in the first and the final year of schools - is suggestive of a high dropout rate across the region. The recent EFA Global Monitoring Report (UNESCO, 2005) places the “survival rate” of South African children reaching grade 5 at close to 65%, lower than Zambia, Tanzania, Namibia, Lesotho and Swaziland. Relatedly, the South African SACMEQ Country Report (2005) notes “significant numbers of learners had stayed away from school for reasons related to fees despite the fact that the policy of the Department stipulates that no learner may be excluded from school on the basis of failure to pay fees...” The report continues noting the “prevalence of illnesses among the Grade 6 learners in all the provinces needs further investigation, especially in view of the outbreak of HIV-AIDS and related diseases in the sub-Saharan countries, so that proper management and support measures can be taken”. We know attendance and participation rates can fluctuate considerably, especially when conditions are governed by willingness or ability to pay fees. Examining how uneven participation rates (or patterns over time) affects individual student achievement is also part of our study.

Whether by explicitly intending to or not, many policies have exacerbated inequalities and challenged social cohesion. In many countries, the strain on the education budget from increased enrollment has increased reliance on user fees and created a wider gap between rich and poor schools. For example in South Africa, the imposition of voluntary user fees has enabled school governing bodies to set their own fees without limitations, allowing fee-paying parents to move their children to better schools, which has ultimately further undermined social cohesion within communities (Spren and Vally, 2005). Hence, issues of “equity and redress now play themselves out primarily through school choice and admissions policies” (Soudien, et als. 2004) In contrast, enrollment and retention is high in countries where educational quality is perceived to be high and services are consistently provided. For example, the Botswana SACMEQ report indicates that “the data presented revealed that Botswana’s education system has several positive characteristics...among them the provision of a school meal that has led to pupils’ very high rates of attendance and the removal of school fees and the need for children to work which have acted as barriers to participation.” (Note, while schooling in Botswana is free, families are expected to contribute to a “feeding fee” to contribute to cooks salaries. However, policy does not allow for exclusion of pupils from school due to non-payment of any fee.) The vast majority of schools have chalk and chalkboards (90%) and a desk and chair for teachers.

We wish to further argue that the quality of education, particularly in rural and historically disadvantaged communities is a human rights issue. The impressively high enrollment rates in the Southern African region (compared to other regions in Africa) do not reveal the ability of systems to retain learners nor provide a ‘quality’ education. By most measures of student achievement and basic indicators of reading and math literacy, these countries are not reaching their goals. Moreover, we wish to argue that within countries, the ability to equalize funding and resource allocation, seems to be a good

predictor of quality. In South Africa and Namibia, where student test scores are lowest in the region, there are greater levels of income inequality and material inequalities across schools starkly indicate lack of commitment to redress or education for all. For example, despite significant attempts over the last decade to equalize funding in South Africa, some 27% of schools have no running water, 43% have no electricity, 80% have not libraries and 78% have no computers (School Register of Needs, 2001) compared to some schools (with state of the art facilities). Without clear prioritization of change and articulation between education and other spheres (such as health and housing, preschool and adult literacy programs) to eradicate poverty and social inequalities, educational transformation is destined to fail.

This study makes a significant contribution to studies measuring educational quality in southern Africa – it looks at both levels of policy reforms and practice (cross-nationally and at the school/classroom level) and importantly, our field research will extend beyond production function models explaining “efficiency” and “utilization” and include variations in teacher knowledge and beliefs, teaching practices, and the level of classroom resources supporting teaching and learning. This research attempts to provide new knowledge on the political and social influences of learner achievement and how policies can work in support of teachers and teacher education. At the same time, we acknowledge that you cannot always link student achievement gains with policy, however, we believe we can gain important insights into improvements in teaching and learning through new policy approaches.

RESEARCH FRAMEWORK

Research Methods

We used descriptive statistics and regression analysis to explore student data for 6th grade mathematics and reading achievement in the sample schools from the SACMEQ II study. Besides student achievement data, we reviewed SACMEQ questionnaires that were administered to teachers and school administrators. Comparative analysis of the surveys and questionnaires enabled us to gather a wide array of data on the family (e.g. socio-economic status), student (e.g. gender, motivation), teachers (e.g. background and training, classroom pedagogies) and school (e.g. curriculum, textbook availability) across each country. We looked at student learning as the outcome of what happens both inside and outside the classroom.

Regression analyses conducted for each country in our study allowed us to further explore the relationship between these variables and student achievement. Selection of all the variables investigated in this study were informed by other research on student achievement, particularly Carnoy and Marshall’s (2005) comparison of student achievement in Latin American countries. In addition, we conducted several preliminary analyses (e.g. correlations and regressions) to determine the best predictors of student achievement and eliminate variables that did not contribute to the model or overlapped with other variables in the equation. To determine which variables held the greatest

explanatory power, we conduct a linear regression analysis separately for each country, using the backward elimination method to enter variables into the analysis. Backward elimination is a variable selection procedure in which all variables are entered into the equation and then sequentially removed. The variable with the smallest partial correlation (the linear relationship between two variables while controlling for the effects of one or more additional variables) with the dependent variable is considered first for removal. If it meets the criterion for elimination, it is removed. After the first variable is removed, the variable remaining in the equation with the smallest partial correlation is considered next. The procedure stops when there are no variables in the equation that satisfy the removal criteria (SPSS). This allowed us to test for significance of a large number of variables to explore which held the most predictive power. By running separate analyses for each country, we could see which variables were strong predictors of achievement for all countries and which were predictors for only certain countries. This also allowed us to eliminate independent variables that did not contribute to the model or overlapped in their contribution with other variables. Once these analyses were conducted, we conducted regression analyses with the refined list of independent variables for each country using the “enter” method. We then could hypothesize about the relationship of each country’s educational policy context to their achievement outcomes.

Results from both the descriptive analysis and the regression analysis are summarized below thematically. For all but a few variables, there was considerable variation among the countries and by subject in terms of which predicted student achievement and which did not. In future phases of this research we will conduct additional analyses to determine if interactions exist and to identify variables that may be overlapping in their predictive ability. In addition, the clustered nature of these data (e.g., pupils are clustered in classrooms and schools) warrant the use of multi-level analyses. Regression analyses reported in this paper hold a greater risk for type 1 error than multi-level analyses. Multi-level analyses will be conducted as part of the next phase of this research.

Variables in the Study

We looked at three types of data for the five countries in this study: 1) individual student and family characteristics, 2) teacher characteristics and practices, and 3) school/classroom resources (see appendix table 1 for definitions). First, *student and family-level variables* included sixth-grade math and reading achievement, student gender, pupil socio-economic status (SES) (a composite variable including parents’ education, possessions in home and household conditions), number of books in the household, and frequency of parental help on homework. Pupil SES, number of books in the household and frequency of homework help from adults were proxies for collective social capital.

Second, the teacher-level variables include measures of teacher preparation, content knowledge, support and pedagogical approach. These include number of years of professional training, number of days of inservice training, teachers’ assessment of the effectiveness of the inservice, and reading and mathematics test scores. These measures provide indicators of the quality and extent of preparation teachers received in addition to measures of content-area knowledge and support for professional development. Together,

they provided information about the quality of teaching students received. However, the teacher data are limited to students' math and reading teachers for one year only and therefore may underestimate or overestimate the relationship between teacher quality and student achievement depending on the representativeness of those teachers to all teachers in the countries of study. In terms of pedagogical approach, the SACMEQII survey provided several important indicators. Those used in this study include math and reading teachers' goals for instruction, frequency of use of pedagogical approaches (e.g. small group work, providing feedback to students), and the frequency with which teachers assess students through tests and quizzes.

Third, *school and classroom context* variables were selected to examine the classroom contexts in which Grade 6 learners were taught, the professional support that the educators received from various sources and some of the factors that educators felt impacted on their satisfaction with the teaching work. School and classroom variables used in the analysis included school building condition, school location (rural, town/city), extent to which the school experiences cooperation by the community (as rated by the school head), class resources and school resources (e.g. number of classroom books, furniture, classroom library).

Study Sample Characteristics

The five countries included in this study varied on a number of contextual characteristics. The table below shows the (weighted) number of students, schools and teachers in the sample. As shown below, the percentage of sampled schools located in an isolated or rural area varied widely by country, from a low of 24% in Mozambique to a high of 71% in Tanzania. All of the students in this sample were enrolled in 6th grade at the time of the survey, however, many had repeated one or more grades. Worth noting is how much this varied by country, ranging from a low of 23% of students in Tanzania to 78% of students in Mozambique repeating at least one grade. The percentage of boys and girls enrolled in each country varied somewhat too, with the biggest difference among students in Mozambique. A total of 60% of the sample in this country was boys, 40% girls. Other countries had a more equal distribution of boys and girls in the sample, presumably reflecting enrollment patterns.

Insert Table 1 here

In the next section, results of our analyses are described and organized into three parts corresponding to the variables described above: individual and family characteristics; teacher characteristics, and school and classroom context.

INDIVIDUAL and FAMILY CHARACTERISTICS: Measuring the effects of social capital on achievement

We used the SACMEQ data to estimate how much of the difference in student achievement across countries is explained by the difference in “resources” (family education differences, rural/urban, retention rates, and school input differences) on

student achievement differences. The following section describes differences in student achievement, student background characteristics, social capital and key variables we hypothesize are related to differential achievement outcomes by country.

Student Achievement

Student achievement, as measured by the sixth-grade math and reading achievement tests, varies considerably by country. As shown in table 2, students in Tanzania outperform their peers in other countries in reading and students in Mozambique outperform their peers in math. Differences between students in Tanzania, Botswana and Mozambique are fairly small, with about one-quarter of a standard deviation (full sample SD=100) difference between the three in reading scores and less than that in math scores. On the other hand, students in Namibia and South Africa scored much lower. In the case of Namibia, students scored one full standard deviation below students in Tanzania in reading and one standard deviation below Mozambique in math. In a regression analysis of all five countries, student achievement was highest in Tanzania for reading and math, controlling for student and teacher background variables and school and classroom resources.³ (See appendix A for regression tables.)

The percentage of students reaching minimum levels of proficiency in reading and numeracy also varies greatly by country. Students in Namibia are far behind those in the other four countries with only 18% reaching the minimum level in reading and 5% reaching competency in numeracy. In all five countries, no more than 18% of 6th grade students in this study reached competency in numeracy.

Insert Table 2 here

Social Capital as a Factor in Achievement

According to Carnoy, et als (2005) key variables (as those presented above) represent a function of collective public choices about education. Social, political and economic contexts in which schooling takes place are known to have considerable impact on learning. There is universal agreement that the kinds of skills, knowledge, values and attitudes that learners develop are influenced, to a large extent, by the kinds of interactions that take place between learner's personal characteristics and their social environment. A comprehensive description of learners' personal characteristics and a clearly mapped out account of the context in which learning and teaching take place provides us with a meaningful interpretation of the Grade 6 learners' scholastic achievements.

Similar studies of student achievement also indicate that some student background characteristics are consistently found to be predictors of student achievement (Carnoy and Marshall, 2004; Coleman et als, 1966; Lockheed and Verspoor, 1991; Rothstein, 2004). Traditionally these forms of "social capital" measures have included: socio-

³ We were not able to control for teacher test score in this analysis because these data are not reported for South African.

economic status (SES), number of books in the home, gender, and speaking English at home.

Students also differed across the countries in terms of their use of English at home. In two countries, Tanzania and Mozambique, 90% or more students reported speaking English at home at least some of the time while in the other three countries around 25 percent never spoke English at home⁴. This might limit the exposure of learners from these provinces to the use of English and thus curtail their opportunities to enrich their English vocabulary and be able to interact effectively with available learning materials.

Insert Table 3 here

As shown in the above tables and in the regression table (Appendix A), pupil SES (including parents' education and home possessions) and speaking English at home were significant predictors of both math and reading achievement for all countries. The standardized coefficients also show that these two variables were among the strongest predictors of achievement. Results were mixed for girls and boys. Girls had higher math achievement than boys in Botswana but lower achievement in Mozambique and Tanzania. Yet, gender was not a significant predictor of achievement in Namibia and South Africa, quite possibly reflecting the emphasis placed on gender equity in schooling in these two countries. In reading, girls had higher achievement in Botswana, Namibia and South African, but again lower achievement than boys in Mozambique and Tanzania (all were statistically significant differences.)

Parent/community engagement

Parental involvement is often thought to be a key indicator of social commitment to education, yet the level and type of involvement and reasons for participation and non-participation need further investigation. According to Carnoy and Marshall's findings, there is considerable evidence that higher SES parents are more likely to be active in their children's schools because they may have more time, and in part because they feel more competent to engage in school-related activities (2004,8). This implies that schools with higher SES students have higher social capital as well as higher human capital, since the parents in those schools form networks and benefit all students in the school. This is Carnoy and Marshall's (2005) definition of "collective social capital" as applied to understanding differences in student achievement across Latin America.

The extent to which the school has an "open-door policy" for parents to visit is an indication of the access parents have to the school and the extent to which they have a voice in their child's education. These are key indicators of parents' involvement in their child's education which is related to student achievement (Henderson and Mapp, 2002.) The table below shows the percentage of school heads who reported that they did have an open-door policy, where parents could visit the school at any time without an appointment.

⁴ Our future analysis will consider the huge variations in achievement with language usage at home and language instruction and compare these across country.

Insert Table 4 here

The level and type of parental involvement can be used as an indicator of public support and coherence between schools and communities. For example, in Botswana parents are invited to school twice annually to evaluate the pupils work and measure student performance, additional meetings are arranged on an as-needed basis. According to the Country Report nearly all teachers indicated that held meetings at least bi-annually, and at times more. Another indicator of community engagement is the school head's report that lack of cooperation from the community is a major problem. This indicator ranged widely among the countries with a low of 8% in Mozambique saying it was a major problem to a high of 69% in Tanzania saying it was a major problem. In regression analyses, an open-door policy was not a significant predictor of achievement and was removed from the model. However, community cooperation was a statistically significant predictor of math and reading achievement for three countries: Botswana, Mozambique and Tanzania and a statistically significant predictor of math achievement in Namibia. Yet, the direction of the effect was not consistent. For Botswana and Mozambique, the greater the problem with lack of cooperation from the community, the lower the achievement, as expected. In Namibia (reading only), Tanzania and South African, greater problems with cooperation were associated with higher achievement (though the findings were not statistically significant for South Africa.) These findings warrant further investigation in the issues related to lack of cooperation from the community and its impact on student achievement. For example, it will be important to understand the local context and understanding of cooperation in each country to determine if lack of cooperation could also be a measure of parent activism, which may indicate greater parental involvement that has a positive impact on student achievement.

TEACHER CHARACTERISTICS

While the literature (and common sense) suggest that well prepared teachers are more effective teachers which enhance student learning, little has been documented about what actually makes a "good teacher" in largely rural, under-resourced schools in southern Africa? How should governments prepare and support teachers as they navigate the complex landscape of educational reform in a changing political and social climate? This section of our paper sets out to explore (be more specific – methods, goals, instructional time)?

A recent survey conducted by ActionAid (2002) on education quality found that teaching activity and methods in most schools across Africa are far from engaging, student achievement was abysmally low, with many children were unable to read and write even after several years of schooling. While some policymakers are beginning to become more attuned to the links between teacher development and student achievement, there has been little inquiry into the role of governments and institutions in low income countries in creating and sustaining effective teacher policies and practices. In most developing countries, the framework for preparation and recruitment of teachers usually is determined by labor market demands and not driven by interests in high quality teaching, pedagogy or curriculum. Most pressing problem for these nations is the lack of skilled

teachers with expertise in their subject area. Studies suggest that schools are full of uncertified classroom teachers or de-motivated teachers who fail to make a difference given the deplorable work conditions they must teach in (Samoff, 1995; Spreen, 2005).

The personal and professional characteristics of the Grade 6 educators presented in this paper explored whether there was a typical educator profile and how instructional goals and methods were viewed. Following is a description of teacher characteristics and summary analysis of the educators' responses to questions concerning how they allocated time to different activities, what they considered as the main goals of teaching each of reading and mathematics, their teaching strategies and assessment methods.

Teacher Training and In-Service

Around the world there has been increased policy activity around teachers in response to new and ambitious student standards and growing evidence that well-qualified teachers make a difference for student learning at the classroom, school and district-levels. Studies in the US for example increasingly show that what teachers know and can do does make a difference (Darling-Hammond, 1997). In a review of the research on teacher quality, Darling-Hammond reports that findings of both qualitative and quantitative analyses suggest that policy investments in the quality of teachers are significantly related to improvements in student performance. Moreover, measures of teacher preparation in the US are by far the strongest correlates of student achievement in reading and math, both before and after controlling for student poverty and language status (Darling-Hammond, 2000). Her analysis argues that policies adopted by states regarding teacher education, hiring and professional development make an important difference in school quality and improvement.

Across Southern Africa classrooms are full of teachers without any formal credentialing or post-secondary education, many are teaching with outdated (pre-independence) credentials, several of whom had no other alternative but to teach. The work of teachers is intimately bound up with a teachers' sense of self and with the norms, values and expectations of the communities they serve. But, despite radically changed demands from school systems on teachers and a reformed school curricula, teachers and related educational/professional development programs in most of Southern Africa have remained substantially unchanged. Although attempts have been made to reform teaching and learning throughout the twenty to thirty year post-independence period in southern Africa, the limited evidenced suggest that much has remained at the level of rhetoric (Spreen, 2005; Lewin, et als, 2003; Jansen and Christie, 1999).

Teachers in Namibia and South Africa received the most number of years of teacher preparation. Teachers in South Africa reported the greatest number of years of teacher training with over three years on average, compared with an average of one to two years of professional training for teachers in Mozambique. There were also differences in the number of days teachers reported spending in in-service training in the last three years. Four of the countries reported averages of 15-17 days in math and between 15 and 20 days in reading in the three years prior to the survey. In Namibia, teachers reported an

average of 34 and 47 days respectively in math and reading in-service in the last three years. The standard deviation for in-service days in Namibia was also very large, suggesting substantial variation among teachers in that country.

In terms of the years of teacher preparation, results in the regression analysis were mixed. Years of preparation showed a positive relationship to math achievement in Mozambique and South Africa in math, and in Namibia and South Africa in reading. It showed a negative relationship to math achievement in Botswana and Tanzania. However, the negative relationship to achievement may be related to the construction of the variable which gave the lowest value to respondents who had no professional training and the highest value to those who had the most professional training. Future analyses will investigate this variable coding more closely to determine if the data require transformation for the regression analysis.

Insert Table 5 here

Teachers' assessment of the effectiveness of those in-service days varied. The percentage of teachers rating the in-service as very effective ranged from a low of 18% from reading teachers in South Africa to a high of 58% of reading teachers in Tanzania. The pattern was different for math teachers. Math teachers in South Africa gave the lowest ratings of effectiveness with only 18% saying the in-service was very effective compared with 35% to 45% of teachers in other countries. In Botswana, 75% of the teachers thought the trainings were effective, in addition, the trainings were evenly distributed and equally well-received across the country – (suggests centrality over decentralized system). In contrast, in South Africa only 43% of the teachers rated the trainings as effective, and the surveys reported huge disparities in terms of trainers, quality and duration of training (problems with decentralized – provincially located training service). The dissatisfaction with short, in-service trainings that merely acquaint teachers with the curriculum policies reflects the overall reaction to top-down reforms as implemented in South Africa (See Chisholm, et als, 2001). The slightly higher rating of training effectiveness in Namibia where the trainings were considered to be effective by 50% of teachers, might be a reflection of higher percentage of teachers who underwent in-service training since the 1990 reforms and the emphasis on teacher engagement, critical reflection and inquiry-based practice. Yet, the relatively high level of dissatisfaction might also be a reflection of the contested nature of the huge pedagogical shifts required by learner-centered practice, and the challenges for experienced teachers who felt successful using more traditional methodologies. According to the country reports, the most well-received trainings appear to be those that focus on specific instructional practices (e.g. learner-centered education), continuous assessment or subject content knowledge.

Insert Table 6 & 7 here

Interestingly, the country with the lowest percentage of teachers participating in in-service (Tanzania) was also the country with the highest ratings from teachers on the effectiveness of the in-service. Further, many teachers reported no in-service in the last three years, particularly teachers in Mozambique (69% of reading and 65% of math teachers) and Tanzania (80% of reading and 71% of math teachers) where over two-thirds of teachers reported no in-service in either subject compared with about 30% of

teachers in other countries reporting no in-service.

Teacher Content Knowledge

Teachers participating in the SACMEQII survey took a reading and math test. Scores on these tests provide an indicator of teachers' content knowledge. As shown in Table 5, teachers in Botswana scored highest in reading and teachers in Tanzania scored highest in math. Yet at the same time, teachers in Tanzania also scored lowest in reading. Differences between countries varied by less than one standard deviation, with about a half standard deviation difference between the lowest (Tanzania) and highest scoring country in reading and four-fifths of a standard deviation between the lowest (Namibia) and the highest (Tanzania).

Insert Table 8 here

Results of regression analyzes showed that teacher test scores was a statistically significant predictor in all four countries that had data⁵ in reading and for all but Mozambique in math, indicating the importance of teacher content knowledge for effective teachers.

Raises issue about relationship of effectiveness and training – for conclusion and discussion – years of independence, new vision of education, support for teachers and question the quality and type of training received – SA – top-down confused messages, conflicting approaches, NAM – focused on teacher inquiry, but not on content, other countries more on content. –Also must be place in the context of support for reform and political/social cohesion – value placed on teachers and schooling. NAM and SA reforms of last decade focused on pedagogic and instructional changes – learner-centered ed and OBE – these reforms included a major focus on teacher training. NAM centered on teacher professional development as the centerpiece to reform, while SA focused on OBE and a new methodological tool and in-service was provided to teach teachers new pedagogy. National roll-out through a cascade model was seen as largely in-effective in SA (see discussion of teachers ratings below). This raises questions about effectiveness and delivery of training – impact not obvious.

Teaching Approaches: Goals and Instruction

Several items on the SACMEQII survey allow us to explore math and reading teachers' pedagogical approach. First, teachers were asked to select the most important goal for reading and math instruction. Then they were asked to report the frequency of employing certain activities and approaches, and to identify the most important activity. Below are descriptive data on goals and instruction by teacher type (reading and math).

Reading: Goals and Instruction

Teachers in Botswana, Mozambique and Tanzania most frequently identified “improving reading comprehension” as the most important goal for reading instruction while teachers

⁵ South Africa did not have data on teacher test scores.

from South Africa most often identified “development of life skills” as the most important and teachers from Namibia most often identified “extending vocabulary” as the most important goal, indicating fundamentally different approaches to reading instruction.

Insert Table 9 here

Similarly, teachers in the five countries differed in the activities they thought were most important for reading instruction. Most teachers, regardless of country, chose reading for comprehension as the most important activity, with the exception of Tanzania, where more teachers indicated that learning new vocabulary was the most important activity.

Insert Table 10 & 11 here

Further analysis of specific implications of classroom practices and type of instruction used will be a key focus for further investigation.

Math: Goals and Instruction

In mathematics, teachers from all five countries identified “problem solving” as the most important instructional goal. Interestingly, consistency in teachers’ goals for math instruction may have contributed to the smaller variance seen between countries in average math scores for students.

Insert Table 12 here

Most teachers in Namibia and South Africa placed importance on working in groups for math instruction while a large percentage of teachers in Tanzania selected quizzes as the most important math activity. Whereas it was less important for Botswana, Mozambique and Tanzania. This indicates that while teachers were fairly consistent across the five countries in terms of their goals for math instruction, they approached math instruction in fundamentally different ways. Reflects the pedagogical shifts or interpreted emphasis of different reforms. For example, in South Africa, outcomes-based education reform emphasizes group work as a fundamental pedagogical principle of instruction (Spreen and Marneweck, 1998) and learner-centered reforms in Namibia also use “cooperative learning” as a key pedagogical tool.

Insert Table 13 here

The following table of approaches also shows that, despite valuing small group work in some countries, teachers in all five countries rely mostly on whole group instruction as the mode of delivery.

Insert Table 14 here

Pedagogical Approaches

To create a measure of pedagogical approach, we took several teacher questionnaire items about the frequency of implementing certain practices and created a scale of practices. In reading, the practices included: introducing the background of a passage before reading it; asking questions to assess text comprehension; asking questions to deepen understanding; using materials you have created yourself; reading aloud to the class; and giving positive feedback. All of these practices, we hypothesized, increased student engagement and comprehension and would be associated with higher student

achievement. Results from the regression analysis did not support this hypothesis. The relationship between greater use of these practices and student achievement was statistically significant for only one country, and the direction was negative, meaning greater use was associated with lower achievement.

A similar approach was used to create a scale of mathematics instructional practices. Items in this scale included: using everyday problems (verbally, written or worksheets); teaching the whole class as a group; teaching in a small group; teaching individually; teaching through question and answer techniques; giving positive feedback; relating to everyday life situations as much as possible; basic skills training; explaining mathematical processes; and using available local materials (for example, for measuring area or volume). We also hypothesized that frequent use of these activities were related to a more student centered approach that would increase student engagement and understanding resulting in higher achievement. Regression results were slightly more positive for math approach than for reading. In Namibia and South Africa, more frequent use of these practices was associated with higher achievement and the relationship was statistically significant.

Clearly, the mixed and unexpected results related to pedagogical approach and practices indicate a need for more exploration around teacher's approaches including an understanding of how teachers are implementing the different approaches and the extent to which they are implemented in their daily practices. Further, the survey question about approaches may not yield sensitive enough data to distinguish frequency of use of certain approaches using a three-point scale (never or rarely, sometimes, often) to discern the relationship between specific approaches and achievement on standardized tests.

Teacher Support

SACMEQII survey items related to support for teachers included the frequency of visits to teachers by inspectors or advisors, teachers' reports that the advisor "contributes very little to my classroom teaching", and teachers' reports that the advisory "makes suggestions on improving teaching methods."

As shown in the table below, 25% or fewer teachers in any country said the advisor contributed little to their math or reading classroom, except in Tanzania, where over a quarter of reading teachers and a third of math teachers said the advisor contributed little. In Botswana inspectors were positively viewed and were largely seen by teachers as having an advisory role. They were thought to "bring new ideas and suggest alternative teaching methods" and rarely seen as coming to find fault. According to Botswana's Country Report "the vast majority of teachers enjoyed the support of their school heads...and teachers were motivated by higher order needs that include the desire to see pupils learn and to realize their own professional growth" (Botswana SACMEQ Country Report, 2005). Namibia and South Africa stand out among the five countries as the lowest percentage of teachers reporting the advisor makes suggestions on improving teaching methods. In both these countries, the regression analysis showed that relationship between number of visits and student achievement was negative. That is, the greater the number of visits the lower the student achievement. This relationship was

statistically significant in South Africa. It was also a statistically significant and negative relationship in Mozambique. Number of visits advisors or inspectors made to teachers classrooms over a three-year period was low, ranging from less than one visit to teachers in Namibia to about three and a half to teachers in Tanzania. In both these countries, advisors and inspectors were viewed as critical and unhelpful, according to country reports. However, greater frequency of visits in Tanzania was positively and statistically significantly associated with greater student achievement. In sum, the regression results confirm findings reported in the country reports for Namibia and South African but conflict with findings reported in the country report for Tanzania, indicating that this is another area that should be explored in greater depth through qualitative field research in the second phase of our study.

Insert Table 15 here

For this study, we are also considering the role of the school head in supporting teachers. School heads were asked to rank from a list of activities which they consider the most important. As shown in the table below, a majority of school heads, regardless of country, ranked monitoring pupils' progress as the most important activity. Far fewer selected teacher professional development as the most important activity, indicating that it is not a priority for many school administrators.

Insert Table 16 here

Teacher Engagement/Motivation

Research shows teacher engagement and apathy are serious issues in under-resourced schools in developing countries (Action Aid, 2002). A discussion of resources and school conditions can be found in the next section "School/Classroom" data. In terms of identifying the level of teacher engagement and motivation the SACMEQII survey asks three questions of the school head that are indicators of teacher apathy and lack of teacher engagement. These are teacher absenteeism, arriving to school late, and teachers skipping class. School heads reported the extent to which each of these was problems in their school. The table below shows the percentage of school heads reporting each was sometimes or often a problem.

Insert Table 17 here

As shown in this table, the rate to which lateness, absenteeism and skipping class were not problems reported by school heads vary greatly by country. Skipping class was most often reported as not a problem followed by absenteeism. Lateness was a problem at least some of the time for most school heads, most of all school heads in Mozambique and Tanzania. Our statistical analyses showed that these variables were highly correlated with each other. School heads that reported problems with one of these issues often reported problems with the others as well. Therefore, regression analyses did not include all three variables. Teachers arriving late showed the strongest predictive power in our regression equations so that variable was included in the final model for this paper. Results showed that, as expected, the more teacher lateness was reported as problem the lower student

achievement scores were. In Namibia and South Africa, these relationships were statistically significant.

SCHOOL RESOURCES, ORGANIZATION AND LOCAL IMPLEMENTATION:

School system organization and its impacts on classroom teaching and learning – moving beyond production function models that measure the relationships between student social class background, school inputs (teacher characteristics) and student outcomes - which typically tell whether the impact of class size, teacher education and teacher experience make a difference in pupils' performance. In this part of the study we probe the impact of classroom and school resources local ownership and accountability.

Classroom/school resources

Across Africa the quality of schooling is very low in most cases, with inadequate infrastructure, large class sizes, demoralized and under-trained teachers, uninspiring methods and overburdened curricula. A study by ActionAid found “a key determinant of demand for primary education is not so much the absence of schools but the fact that those schools which do exist don't function properly” (Actionaid, 2002,9). Hence, the quality of schooling is a powerful factor in inducing demand and commitment to education – and where quality is low there is little incentive for parents to send their children to school when they can do more “meaningful” learning/work at home.

Between 49% and 61% of school heads reported that their building was in good condition or in need of only minor repairs. The average number of classroom (e.g. chalkboard, class library, furniture) and school resources (e.g. school library, piped water, copy machine) varies fairly substantially by country and provides a good indicator of the equality of resources distribution across countries.

Insert Table 18 here

Overall, Botswana had better school conditions than the four other countries. Teachers in Botswana reported the greatest amount of resources in their classrooms. 70% of schools had a staff room, school head office and store room. 96% of schools had piped water. The provision of desks and work places for pupils, as well as, chalk and chalkboards were high compared to other countries.

According to the regression analysis in our study (see Appendix A Tables 3 and 4) poor school building condition (as reported by the school head) was found to be negatively associated to achievement. That is, the worse the school condition, the worse the achievement. (The relationship was statistically significant in four out of five countries.) The relationship between class resources (e.g. chalkboard, furniture, classroom library) and achievement was less clear. More resources were related to higher reading and math achievement in Namibia and South Africa and related to higher reading achievement in Mozambique and Tanzania. Having more school resources such as a school library, piped water, telephone, and copy machine, was related to higher student achievement for all

countries in reading and for three countries (Botswana, Namibia, South Africa) in math. The consistent relationship between resources and higher student achievement has policy implications related to equitable distribution of resources.

The resources varied widely among provinces but the variations tended to be in favor of urban settings, which is an equity issue that needs an accelerated but comprehensive intervention strategy. The relationship between resources and achievement is strong and has powerful implications in terms of opportunities to learn and student achievement. For example, the low availability levels of textbooks combined with the shortage of stationery items as presented in the data and described in the South Africa Country Report, resulted in learners either not receiving or not doing homework on a regular basis. On average, learners had access to some books, print and electronic media where they stayed during a school week. “The low levels of learner support materials in general, but of stationery items in particular, indicated that many learners depend solely on what the schools provide in the way of resources” (South Africa SACMEQ Country Report, 2005).

Class size varies widely, ranging from 30 in Botswana to a high of 52 in Mozambique. Larger class size was negatively associated with math achievement in Botswana and Namibia and reading achievement in Mozambique, Namibia and Tanzania. These findings support findings from several studies in the US that show a negative relationship between class size and achievement (see for example, Glass, et. al., 1982 and Mosteller, 1995).

Teacher Support and Accountability

Accountability mechanisms (as measured by site visits by school inspectors) appears to have had a negative impact on both math and reading. For school heads, most thought that their most important activity was monitoring pupils progress, far fewer thought that activities aimed at the professional development of teachers was the most important. An interesting note on the effects of accountability mechanisms in countries with less social cohesion, as previously mentioned in both South Africa and Namibia educators saw visits by school inspectors as threatening, critical and not very useful. By comparison in Botswana, inspectors and advisors were seen as helpful and providing useful information and resources. Other significant findings were the dramatic differences in use of teacher resource centers, Botswana’s being relatively high with the common use of resource centers for training and sharing ideas with other teachers, and South Africa and Namibia’s use of resources being relatively low. This might suggest a perceived usefulness, willingness and culture of teacher collaboration, motivation to learn and to take advantage of available resources, and particularly about the signal it sends of broader governmental commitment to provide adequate resources by any means possible.

Social Cohesion

Good schools depend on cooperation between the public, including cooperation between parents and teachers (e.g. in ensuring school attendance, in completion of homework, and

in setting expectations) and cooperation between schools and management /government /society (e.g. in improving accessibility and affordability, supporting reforms that address local needs, providing a social structure that supports education.) There is an urgent need to improve the accessibility, affordability and quality of schooling. Unfortunately not much in quantitative data that is collected that gets at accountability mechanisms, teacher motivation. SACMEQ asked how important are particular aspects of teaching methods and school characteristics, but not teachers' level of satisfaction with these.

One indicator of social cohesion used by Carnoy and Marshall (2005) that was collected by SACMEQ was school fights. Violence, as measured by the frequency of school fights, is a key predictor of social cohesion because it is an indicator of social strife and overall inequality in society. Carnoy and Marshall (2005) found that countries with greater social cohesion (indicated by less violence) also had greater student achievement. We know from the South Africa and Namibia country reports that schools in these countries experience a high prevalence of school violence. While there is insufficient data in the SACMEQ data archive to fully describe social cohesion, there is ample evidence in both the press and in various related studies in South Africa and Namibia which describe the prevalence of violence and the problems of social turmoil in both these countries.

Further, we used the SACMEQ data on school fights to see if there was a relationship to achievement in the same way used by Carnoy and Marshall (2005.) Regression analyses showed that, although not completely consistent for all countries in our study, fewer pupil fights in school, one indicator of social cohesion, is associated with higher student achievement. The positive relationship was statistically significant for Namibia, Tanzania and South Africa. It was not statistically significant for Mozambique but showed a negative relationship to achievement in Botswana. The lack of consistency may be related to the fact that we are attempting to measure a very complex construct (social cohesion) with a single indicator (fights). Undoubtedly, a much more complex and sophisticated indicator of social cohesion is necessary.

Conclusion

A UNESCO report Assessment of Basic Education in Sub-Saharan Africa (1990-2000) argues, "The attainment of EFA objectives has been facilitated and hindered by a number of factors. The enabling factors are often related to political will..." (ADEA working Group, 2000). In this article, we attempted to measure the role that several factors played in explaining student learning in different contexts across Southern Africa. Not surprisingly, among the factors we found to influence achievement in the five countries in our study were first and foremost student background and context factors (socio-economic status, gender, speaking English at home, location of school) which collectively indicate a measure of "social capital". Other important factors included resources (school and classroom; professional development and teacher support), teacher content knowledge, teacher motivation (as measured by lateness), and school violence (as measured by the frequency of pupil fights).

Our overall findings concur with Carnoy et als (forthcoming) that “student learning is an outcome of what happens outside and inside in the class.” In our production function estimates we looked at student family background variables, teacher characteristics, and school resource variables. Like Carnoy and Marshall’s study, we pulled variables that were indicators of the socio-political context, e.g. those related to children’s social condition inside and outside school, and the social class distribution among schools which we show were important in explaining at least part of school achievement. This supports Carnoy and Marshall’s finding that “countries, regions and school districts can expect to have difficulty achieving high levels of student learning in school if the children live in a socio-political context outside of school that does not provide safety, health and moral support needed to function well in classroom environments”(Carnoy and Marshall, 2005,9).

In this paper we used the SACMEQ data to begin to profile differences in schooling outputs across countries. An important lens in our analysis was understanding these findings in relation to the social and historical ‘disadvantage’, ‘marginalization’ and exclusion across countries. We used a variety of factors to begin to develop a measure of “collective social capital” to indicate the broader value and worth parents and communities place on their schools and teachers. We explored issues of access, enrollment and expanded the analysis to include school survival rates as a critical indicator of the value education or measure of educational quality. This initial brush at the data helps us begin to explain how in places where higher rates of poverty and wider distribution of inequalities persist they continue to alienate both teachers and learners while also undermining educational effectiveness, despite the best intentions of policymakers. We argue that the role of poverty in school reform must be further examined. Data from SACMEQ II were used to make some of these points. We suggest that in countries like South Africa and Namibia where income inequality has a far broader distribution and considerably challenges social cohesion, the negative impact of poverty is greater and of longer duration than in other countries. Being a “have-not” in a place where others are gaining better material wealth, better schools, better services, leads to disillusionment and disengagement with public services such as education, and effects the use and participation of these services by the poor. By comparison, in countries where there may be less resources overall, but that distribution is not as wide, people feel better about their public services, and they support and use them to a greater advantage. Hence, countries with high rates of “collective social capital” and good will towards schools, create better conditions for schooling.

Similarly, we argued that teacher quality cannot be measured by years of education and hours of professional development. Teachers must be understood as individuals working within institutional contexts that either support or undermine them, within community contexts that either value or dismiss them, and in social contexts that either motivate or frustrate them. Hence, teacher quality is explained by the patterns of behaviour and the application of instructional practices that improve learning and student outcomes. Our finding that, for most of the countries in our study, there was no relationship between the number of years of teacher professional training they have received and student achievement and a very erratic relationship between inservice effectiveness and

achievement indicates that the professional training is either not addressing the current needs of teachers or not of high quality. Further evidence is the finding that teacher content knowledge plays a large role in explaining student achievement. Recent research in the US is proving that addressing teachers' subject area content knowledge is an area of critical need and a key factor of high-quality professional development (Hill, Rowan and Ball, 2005). Further, reports from teachers in some countries that the inspectors and advisors were critical and unhelpful, coupled with a negative relationship to achievement, indicate that this type of support may be more harmful than helpful to teachers. Given the crucial role of teacher training, professional development and support in student achievement, these findings have policy implications and indicate that it is not just a matter of providing more but of providing better quality training, professional development and support.

Finally, our findings also underscore that school quality is not just a question of resources. It is a question of the relative value and worth education has for the community. The value-added in getting an education should be part of a shared consensus, teachers and administrators should be valued and respected members of their communities and schools should reflect and attend to the values and beliefs of their communities. If "Education for All" and "Equity and Redress" are the cornerstones of education and schools are still failing to educate everyone equally and school systems continue to distribute resources inequitably, people will stop supporting education and its ability to transform society will be lost. As we have explained, community social capital is a powerful motivator for educational change. Its absence is a clear indicator of/explanation of educational failure. More than access, we argue that the quality of education and educational opportunities are a human rights issue. Policies need to address the social quality and social cohesion concerns that lay an important foundation for creating good teaching and learning environments. "Once people start to demand change and mobilize for change when they begin to organize and how the State accountable for providing good quality, relevant education, then reform of education moves from being doomed bureaucratic project into a real possibility"(ActionAid, 2002,9).

At this point in our research, we have raised more questions than we have answered. We need to further investigate (through additional statistical analyses and qualitative field research) professional development opportunities (including access to and quality) as well as the impact of teachers' pedagogical approaches to teaching math and reading in the five countries in this study.

References

- ActionAid (2002) The Global Education Review. International Education Unit.
- Bryk, A. and Raudenbush, S. (2002). *Hierarchical Linear Models: Applications and Data Analysis Methods*. Thousand Oaks, CA: SAGE Publications.
- Carnoy, M. and Marshall, J(2005). "Comparing Cuban Primary Students' Academic Performance with the Rest of Latin America." (forthcoming in Comparative Ed Review).
- Coleman et als, 1966;
- Darling-Hammond, L.(1997) The current status of teaching and teacher development in the United States. Background paper prepared for the National Commission on Teaching in America's Future.
- Darling-Hammond, L (2000) Teacher quality and student achievement. A review of the state policy evidence. Education Policy Analysis Archive 8, No. 1.
- Hill, H., Rowan, B., and Ball D. (2005). *Effects of teachers' mathematical knowledge for teaching on student achievement*. American Educational Research Journal, vol. 42, no. 2, pp. 371-406.
- Glass, G.V et al. (1982). *School class size: Research and policy*. Beverly Hills, CA: SAGE Publications.
- Henderson A. and Mapp, K (2002). *A new wave of evidence: The impact of school, family, and community connections on student achievement*. Austin, TX: South West Educational Development Laboratory (SEDL).
- Lockheed and Verspoor, (1991)
- Mosteller, Frederick (1995). "The Tennessee study of class size in the early school grades." *The Future of Children*, Vol. 5, no. 2: 113-27.
- Rothstein, R (2004) *Class and Schools*. New York: Teachers College Press.
- Samoff, J (1995) Education Policy Formation in Tanzania. Self-Reliance and Dependence. In Evans ed (1995) *Education policy Formation in Africa. A comparative Study of Five Countries*. Technical Paper No. 12. USAID.
- Spreen, C and Vally, S. (2005) Education Rights, Education Policies and Inequality in South Africa. (forthcoming in the International Journal of Education Development).
- Spreen, C. (2005) Dancing with the Monster. Missed steps at curriculum implementation in South African schools (unpublished paper presented at the Comparative and

International Education Society annual meeting, March 2005).

Appendix B: Regression Tables

Appendix Table 1: Regression coefficients for mathematics achievement comparing Botswana, Namibia, South Africa and Mozambique to Tanzania.

Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	467.162	8.678		53.836	.000
pupil's SES	5.495	.226	.194	24.304	.000
Girls	-8.122	1.143	-.043	-7.105	.000
Speaking English at home	22.934	1.537	.094	14.922	.000
Number of books at home	.019	.010	.012	1.902	.057
Math teacher years of professional training	.996	.558	.012	1.784	.074
Effectiveness of in-service	-1.059	.378	-.018	-2.802	.005
Frequency of math assessments	-1.850	.751	-.018	-2.464	.014
Math approach	1.518	.256	.039	5.933	.000
Math teacher total class resources (chalk board, furniture, etc.)	2.127	.346	.047	6.148	.000
School resources	3.863	.166	.212	23.312	.000
Large math class size	-.346	.053	-.048	-6.562	.000
Poor school building condition	-9.737	1.220	-.052	-7.983	.000
Community cooperation a problem	1.259	.892	.010	1.410	.158
Pupil fights not a problem at school	6.879	1.841	.024	3.736	.000
Teachers arrive late	-16.293	1.297	-.083	-12.563	.000
Number of math teacher inspector and advisor visits from 1998 to 2000	-.974	.220	-.031	-4.423	.000
Town/city school location	7.390	1.482	.039	4.986	.000
Botswana dummy	-47.420	2.393	-.200	-19.817	.000
Namibia dummy	-121.311	2.304	-.588	-52.650	.000
South Africa dummy	-87.868	2.418	-.354	-36.339	.000
Mozambique dummy	-3.199	2.621	-.013	-1.221	.222

Dependent Variable: zmalocp SCR:/ pupil math-all 500 score [mean=500 & SD=100]

Appendix Table 2: Regression coefficients for reading achievement comparing Botswana, Namibia, South Africa and Mozambique to Tanzania.

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	510.532	9.165		55.704	.000
pupil's SES	7.452	.229	.252	32.563	.000
Girls	6.381	1.156	.032	5.520	.000
Speaking English at home	27.949	1.554	.110	17.981	.000
Number of books at home	.015	.010	.009	1.445	.149
Reading teacher years of professional training	2.301	.531	.029	4.334	.000
Effectiveness of in-service	-1.883	.381	-.032	-4.939	.000
Frequency of reading assessments	-4.962	.685	-.046	-7.245	.000
Reading approach	.560	.498	.007	1.125	.261
Reading teacher total class resources (chalk board, furniture, etc.)	1.497	.350	.032	4.282	.000
School resources	4.602	.167	.241	27.588	.000
Large reading class size	-.370	.054	-.049	-6.898	.000
Poor school building condition	-9.706	1.239	-.049	-7.834	.000
Community cooperation a problem	.974	.904	.007	1.077	.282
Pupil fights not a problem at school	5.342	1.864	.018	2.865	.004
Teachers arrive late	-17.475	1.304	-.085	-13.405	.000

Number of reading teacher inspector and advisor visits from 1998 to 2000	-.344	.238	-.010	-1.441	.149
Town/city school location	15.575	1.500	.079	10.386	.000
Botswana dummy	-65.050	2.429	-.262	-26.778	.000
Namibia dummy	-131.557	2.412	-.608	-54.551	.000
South Africa dummy	-114.850	2.480	-.445	-46.303	.000
Mozambique dummy	-43.684	2.512	-.168	-17.393	.000

a Dependent Variable: zralocp SCR:/ pupil reading-all 500 score [mean=500 & SD=100]

Appendix Table 3: Beta coefficients for reading achievement regression analyses.

		Botswana	Mozambique	Namibia	Tanzania	South Africa
Pupil Characteristics	pupil's SES	.242**	.186**	.224**	.283**	.252**
	Girls	.154**	-.068**	.043**	-.086**	.089**
	Speaking English at home	.150**	.152**	.082**	.129**	.072**
	Number of books at home	.082**	-.055*	.031*	-.005	.009
Teacher Characteristics	Reading teacher years of professional training	-.023	.031	.077**	-.022	.057**
	Effectiveness of in-service	.017	.054*	-.064**	-.042†	-.004
	Teacher score on reading test	.097**	.074**	.162**	.054*	---
Teacher Pedagogy	Frequency of reading assessments	-.040*	-.006	-.029*	-.035†	-.034*
	Reading approach	.005	-.049*	-.010	.028	.004
School/classroom resources	Reading teacher total class resources (chalk board, furniture, etc.)	.006	-.065**	.050**	-.046*	.099**
	School resources	.123**	.072**	.257**	.053*	.348**
	Large reading class size	-.023	-.062**	-.061**	-.049†	.001
	Poor school building condition	.004	-.055*	-.058**	-.053*	-.076**
Parent engagement	Community cooperation a problem	-.034†	-.040†	-.012	.061**	.016
	Pupil fights not a problem at school	-.020	-.013	.045**	-.005	.029†
Teacher engagement/motivation	Teachers arrive late	-.021	.009	-.080**	.009	-.143**
Teacher support	Number of reading teacher inspector and advisor visits from 1998 to 2000	-.046*	-.026	-.017	.067**	-.039*
Other	Town/city school location	.040†	.067**	.067**	.146**	-.037†

** p<.001

* p<.01

† p<.05

Appendix Table 4: Beta coefficients for math achievement regression analyses.

		Botswana	Mozambique	Namibia	Tanzania	South Africa
Pupil Characteristics	pupil's SES	.173**	.091**	.203**	.230**	.201**
	Girls	.057**	-.176**	-.015	-.177**	.005
	Speaking English at home	.136**	.136**	.050**	.120**	.068**
	Number of books at home	.075**	-.062**	.033*	-.034	.050**
Teacher Characteristics	Math teacher years of professional training	-.034†	.098**	.009	-.082**	.103**
	Effectiveness of in-service	.041†	.017	-.056**	-.066**	-.015
	Teacher score on math test	.062**	.019	.113**	.045†	---
Teacher Pedagogy	Frequency of math assessments	.003	-.090**	.039**	.012	-.006
	Math approach	-.002	-.020	.041**	.010	.043*
School/classroom resources	Math teacher total class resources (chalk board, furniture, etc.)	.018	-.021	.079**	-.021	.068**
	School resources	.129**	-.013	.210**	.023	.369**
	Large math class size	-.072**	-.029	-.039*	-.007	-.004
	Poor school building condition	-.047*	-.022	-.071**	-.074**	-.053*
Parent engagement	Community cooperation a problem	-.059**	-.078**	.026†	.107**	.001
	Pupil fights not a problem at school	-.053*	-.028	.060**	.037†	.039*
Teacher engagement/motivation	Teachers arrive late	-.009	.031	-.077**	-.031	-.131**
Teacher support	Number of math teacher inspector and advisor visits from 1998 to 2000	-.041†	-.109**	-.013	.064**	-.061**
Other	Town/city school location	.019	.027	.054**	.056†	-.120**

** p<.001

* p<.01

† p<.05

Appendix B: Variable definitions

Student variables	
Pupil's sex	1=female 0= male
Pupil's SES	parents education; possessions at home; light; wall; roof; floor
Parents help with homework	1 no homework 2 never 3 sometimes 4 most of time
Student speaks English at home	(student report) 0 =never 1 =sometimes/all the time
Teacher variables	
Reading Teacher- number of years of teacher training all together	1 =no teacher training 2 =less than one year 4 =two years 5 =three years 6 =three years plus
Math Teacher- number of years of prof. training	1 =no teacher training 2 =less than one year 4 =two years 5 =three years 6 =three years plus
Math teacher –days of in-service-	Total number of days math teacher spent in in-service courses during the past three years.
Reading teacher –days of in-service	Total number of days reading teacher spent in in-service courses during the past three years.
Reading teacher- effectiveness of in-service	1 =no in-service 2 =not effective 3 =reasonably effective 4 =effective 5 =very effective
Math teacher's report: effective in service	1 =no in-service 2 =not effective 3 =reasonably effective 4 =effective 5 =very effective
Math teacher- frequency of assessments	1 =no test 3 =once per term 4 =two or three times per term 5 =two or three times per month 6 =once or more per week
Reading Teacher – frequency of assessments	1 =no test 3 =once per term 4 =two or three times per term 5 =two or three times per month 6 =once or more per week
Reading approach	variables rated on the following scale: 1= never or rarely 2 =sometimes; 3 =often Introducing the background of a passage before reading it Asking questions to assess text comprehension Asking questions to deepen understanding Using materials you have created yourself Reading aloud to the class Giving positive feedback

Math approach	<p>Rated on the following scale: 1 =never or rarely 2 =sometimes 3 =often</p> <p>Using everyday problems (verbally, written or worksheets) Teaching the whole class as a group Teaching in a small group Teaching individually Teaching through question and answer techniques Giving positive feedback Relating to everyday life situations as much as possible Basic skills training Explaining mathematical processes Using available local materials (for example, for measuring area or volume)</p>
Reading teacher total class resources [max=8]	<p>Sum of resources in classroom (according to reading teacher): A usable writing board, chalk (or other markers), a wall chart of any kind, a cupboard or locker, one or more bookshelves, a classroom library, book corner or book box, a teacher table, a teacher chair Index from 0 to 8.</p>
Math teacher total class resources [max=8]	<p>Sum of resources in classroom (according to math teacher): A usable writing board, chalk (or other markers), a wall chart of any kind, a cupboard or locker, one or more bookshelves, a classroom library, book corner or book box, a teacher table, a teacher chair Index from 0 to 8.</p>
Teacher reading score [mean=500 & SD=100]	Score on all items on teacher reading test
Teacher math 500 score [mean=500 & SD=100]	Score on all items on teacher math test
Inspector or advisor visited reading/math teacher in classroom	Total number of times inspector (officer visiting school head and/or teacher for professional purposes) or advisor (individual who visits teachers to advise them in general or on specific aspects of teaching) visited reading/math teacher in classroom between 1998 and 2000
The advisor makes suggestions on improving teaching methods	0=no 1=yes
The advisor contributes very little to my classroom teaching	0=no 1=yes
School condition	1=The school needs complete rebuilding/major repairs 0=Minor repairs/in good condition
Teacher engagement/motivation	
Teachers arriving late Teacher absenteeism Teachers skipping classes	School head report of the frequency of dealing with this behavior (1=never, 2=sometimes, 3=often)
Parent engagement	
Parent access to school	School head report that there is an open-door policy for parents to visit the school head or teachers at any time either by appointment or not (0=no, 1=yes)
Cooperation from the community	School head report of the extent lack of cooperation from the community is a problem in the school (1=not a problem, 2=a minor problem, 3=a major problem)

Author Biographies

Carol Anne Spreen, Ph.D. is an Assistant Professor of International Education Policy at the University of Maryland in College Park, Maryland. Her work emphasizes studies of school restructuring and reform, issues of social justice and equity, teacher professional development and identity. Her current research interests include comparative politics of education reform, national and local assessment policy, monitoring educational quality and achievement, and globalization of education reforms. She received her doctorate in Comparative Education and Policy Studies from Columbia University. She holds a masters degree in sociology and education from Teachers College, and a masters degree in instructional leadership from the University of Illinois. Over the past 15 years, Dr. Spreen has been an educational researcher and program evaluator at the School Redesign Network (Stanford University) National Center for Restructuring Schools, Education and Teaching (Teachers College, Columbia University), Center for Research and Evaluation on Standards and Student Testing (UCLA) and the North Central Regional Educational Laboratory (Oak Brook, Illinois).

Cheri Fancsali, Ph.D. is a senior program officer at the Academy for Educational Development where she has over a decade of experience conducting educational research and evaluation projects. Her areas of specialty include school reform, teacher professional development, and gender equity. She received her doctorate in sociology and education from Columbia University where she also holds a master's degree in educational policy. Previously, Dr. Fancsali taught early childhood and special education in New York City.

Table 1: SACMEQII Sample Pupil Characteristics

	BOT	MOZ	NAM	SOU	TAN
Weighted number of students	3322	3177	5048	3163	2854
Number of schools	170	176	270	169	181
Percent of students in schools located in a isolated/rural area	49%	24%	64%	43%	71%
Percent of students repeating a grade	31%	78%	54%	42%	23%
Percent of boys	49%	60%	48%	48%	48%
Percent of girls	51%	40%	52%	53%	52%

Table 2: Reading and Math Standardized Achievement, by Country

		Bot	Moz	Nam	Sou	Tan
Reading score	Mean	521.1	516.7	448.8	492.3	545.9
	SD	88.3	64.7	86.6	122.4	90.1
Math score	Mean	512.9	530.0	430.9	486.1	522.4
	SD	82.1	56.7	83.6	109.1	86.4
Percent reaching minimum level in reading		55.8%	62.0%	18.0%	36.7%	67.9%
Percent reaching competency in numeracy		15.4%	13.0%	4.9%	15.1%	18.1%

**Table 3:
Selected Pupil Characteristics and Indicators of Collective Social Capital, by Country**

		Bot	Moz	Nam	SA	Tan
Pupil's SES [parents education; possessions at home; light; wall; roof; floor]	Mean	6.9	5.4	6.3	8.5	5.2
	SD	3.2	2.8	3.3	3.4	2.5
Adult helps with homework	Mean	3.2	3.1	3.2	3.2	3.2
	SD	.7	.7	.7	.7	.9
Pupils speaking English at home (0=never, 1=sometimes/all the time)	Mean	.7	.9	.8	.8	.9
	SD	.4	.3	.4	.4	.3
Number of books in home	Mean	24.8	24.9	22.0	33.0	31.6

	SD	52.7	57.9	48.5	62.0	70.8
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Table 4: Percentage of School Heads who Reported an “Open-Door” Policy for Parents and Lack of Cooperation from Community a Problem, by Country

	BOT	MOZ	NAM	SOU	TAN
Open-Door Policy	94.8%	81.4%	88.8%	88.6%	80.9%
Lack of cooperation from community is a major problem	24.7%	7.9%	20.5%	34.5%	69.4%

Table 5: Mean and Standard Deviations for Number of Years of Professional Teacher Training and Number of Days of In-Service Between 1998-2000, by Country

		Bot	Moz	Nam	Sou	Tan
Reading Teacher- number of years of prof. training	Mean	4.11	3.46	4.63	5.15	4.20
	SD	.97	1.688	1.121	.854	.631
Math Teacher- number of years of prof. training	Mean	4.14	3.65	4.60	5.16	4.19
	SD	.97	1.593	1.043	.837	.575
Math teacher –days of in-service	Mean	16.81	15.85	47.44	15.95	14.93
	SD	35.62	42.157	141.111	31.647	44.267
Reading teacher – days of in-service	Mean	16.97	16.77	34.41	20.31	14.48
	SD	38.017	45.934	113.180	35.249	48.669

**Table 6:
Reading Teachers’ Ratings of In-Service Effectiveness and Percentage
with no In-Service in Last Three Years.**

Valid Percent	BOT	MOZ	NAM	SOU	TAN
Not effective	2.1%	5.5%	1.7%	8.3%	0
Reasonably effective	21.6	33.1	15.9	47.7	12.4%
Effective	42.7	23.0	34.0	25.8	29.4
Very effective	33.6	38.4	48.4	18.2	58.2
Total	100.0	100.0	100.0	100.0	100.0
No in-service	30.3	68.9	34.3	30.2	79.9

**Table 7:
Math Teachers’ Ratings of In-Service Effectiveness and Percentage with no In-Service in Last Three
Years.**

	BOT	MOZ	NAM	SOU	TAN
Not effective	1.9%	1.3%	5.2%	7.8%	0
Reasonably effective	20.5	25.3	14.0	45.0	22.9%
Effective	43.2	37.8	36.3	29.7	34.3
Very effective	34.4	35.7	44.5	17.5	42.8
Total	100.0	100.0	100.0	100.0	100.0
No in-service	30.0	64.6	29.1	29.1	70.5

Table 8: Teacher Reading and Math Standardized Test Score, by Country

		Bot	Moz	Nam	Tan
Teacher reading score [mean=500 & SD=100]	Mean	757.7	716.2	727.9	706.7
	SD	60.8	74.435	81.9	44.1
Teacher math 500 score [mean=500 & SD=100]	Mean	753.3	782.8	734.8	794.3
	SD	80.75	101.3	115.0	82.9

Table 9: Percentage of Teachers Reporting the Most Important Goal in Reading Instruction, by Country.

	BOT	MOZ	NAM	SOU	TAN
making reading enjoyable	8.8%	2.8%	13.5%	10.9%	1.4%
Extending vocabulary	19.0	6.7	24.6	4.6	3.4
improving word attack skills	3.0	14.6	5.1	2.2	4.2
improving reading comprehension	26.1	54.6	17.8	14.2	39.4
Developing an interest in reading	17.7	9.4	20.6	28.1	24.9
Opening up career	10.2	2.4	9.2	5.9	2.3
development of life skills	15.2	7.6	9.0	30.8	23.7
Total	100.0	98.1	99.7	96.8	99.2
Missing		1.9	.3	3.2	.8

Note: highest percentage for each country is in bold.

Table 10: Teacher Reports of the Most Important Reading Activity, by Country

	BOT	MOZ	NAM	SOU	TAN
Listening to someone reading aloud	3.2%	1.1%	4.8%	2.0%	1.6%
silent reading	1.1	1.7	3.9	3.6	2.5
learning new vocabulary	25.3	11.1	21.8	21.1	34.2
pronouncing	8.0	4.3	19.8	12.7	12.5
reading for comprehension	50.2	66.3	25.6	43.0	27.6
taking books home to read	6.2	9.0	6.3	8.4	7.8
reading materials in the home	3.3	2.2	11.5	4.0	1.4
reading aloud in class	2.5	2.3	5.9	2.0	11.6
Total	100.0	98.1	99.7	96.8	99.2
Missing		1.9	.3	3.2	.8

Table 11: Percentage of Reading Teachers Reporting using Selected Approaches “Often”

	Percent using approach “often”				
	BOT	MOZ	NAM	SOU	TAN

Introducing the background of a passage before reading it	41.4%	29.6%	55.3%	66.9%	85.3%
Asking questions to assess text comprehension	92.1%	92.3%	76.1%	87.8%	95.5%
Asking questions to deepen understanding	89.9%	98.1%	69.4%	91.2%	97.9%
Using materials you have created yourself	32.1%	38.1%	31.8%	36.3%	34.3%
Reading aloud to the class	57.8%	95.5%	57.7%	71.9%	78.6%
Giving positive feedback	88.7%	84.6%	71.5%	83.8%	80.4%

Table 13: Teacher Reports of the Most Important Math Activity, by Country

	Percent using approach "often"				
	BOT	MOZ	NAM	SOU	TAN
Working in pairs or groups to solve problems	33.5%	21.0%	41.1%	53.7%	23.1%
Working alone on problems	9.5	31.2	3.3	3.1	8.7
Preparing projects or posters to be shown to class	5.3	15.0	4.7	2.8	1.1
Using practical equipment (e.g. calculators)	20.6	5.0	16.6	19.9	14.2
Homework assignments	4.6	14.6	12.9	1.5	.9
Studying and interpreting graphs	3.8	.4	1.8	1.7	.7
Reciting tables, formulae, etc	3.0	.6	2.1	2.2	5.3
Quizzes	19.7	9.5	17.5	10.1	44.3
Total	100.0	97.2	100.0	94.9	98.3
Missing		2.8		5.1	1.7

Table 14: Percentage of Math Teachers Reporting using Selected Approaches "Often"

	Bot	Moz	Nam	Sou	Tan
Using everyday problems (verbally, written or worksheets)	75.7%	49.9%	57.6%	85.6%	60.5%
Teaching the whole class as a group	68.2%	78.1%	53.3%	70.4%	81.1%
Teaching in a small group	32.4%	9.6%	31.1%	34.6%	24.1%
Teaching individually	18.9%	20.2%	13.5%	21.5%	22.6%
Teaching through question and answer techniques	74.4%	57.2%	65.0%	68.8%	63.8%
Giving positive feedback	90.5%	94.2%	74.9%	82.6%	63.6%
Relating to everyday life situations as much as possible	67.2%	55.0%	56.6%	80.2%	64.7%
Basic skills training	57.9%	84.1%	56.7%	77.0%	72.1%
Explaining mathematical processes	83.1%	79.6%	78.7%	84.1%	86.7%
Using available local materials (e.g. for measuring area or volume)	76.8%	53.5%	58.6%	74.5%	78.2%

Table 15: Teacher Support From Advisors And Inspectors, by Country

	Percent responding yes				
	BOT	MOZ	NAM	SOU	TAN
Reading Teacher: Advisor contributes little to my classroom	25.7%	18.3%	14.9%	9.4%	26.5%

Reading teacher: Advisor makes suggestions on improving teaching methods	58.7%	66.8%	39.9%	35.5%	76.1%
Math Teacher: Advisor contributes little to my classroom	24.7%	15.5%	16.7%	11.4%	34.0%
Math teacher: Advisor makes suggestions on improving teaching methods	57.6%	69.3%	37.3%	38.2%	74.6%
Average number of visits to reading teacher from advisory or inspector from 1998-2000	2.3	3.3	.04	1.7	3.7
Average number of visits to math teacher from advisory or inspector from 1998-2000	2.2	3.3	.1	2.1	3.4

Table 16: School Head Report of Most Important Activity

Valid Percent	BOT	MOZ	NAM	SOU	TAN
Contact with local community	5.8%	33.7%	19.4%	13.7%	32.4%
Monitoring pupils' progress	41.3	6.6	33.4	32.7	16.1
Administrative tasks	9.3	11.6	21.2	21.0	19.2
Discussing educational objectives with teachers	11.3	15.6	16.7	13.2	9.4
Teacher professional development	3.6	17.1	2.8	8.4	16.6
School head professional development	28.6	9.7	6.5	9.5	6.4
Missing		5.7		1.5	

Table 17: Percentage of School Heads Reporting the Following Issues are Never a Problem in their School, by Country

Valid Percent	BOT	MOZ	NAM	SOU	TAN
Teachers arrive late	14.1%	1.9%	21.5%	15.5%	6.0%
Teacher Absenteeism	38.1	25.9	41.0	37.4	39.8
Teachers Skipping class	73.7	66.5	54.4	63.2	33.2

Table 18: Classroom/school resources

	BOT	MOZ	NAM	SOU	TAN
Average Class Size	30.0	52.5	38.4	42.1	41.9
School Building is in Good Condition/needs minor repairs	61.3%	53.4%	51.6%	54.5%	49.5%
Mean reading resources (max 8)	6.4	4.0	5.2	6.3	3.6
Mean math resources (max 8)	6.4	4.0	5.2	6.1	3.3
Mean school resources (max 22)	9.8	6.9	9.9	11.7	5.5