

COMBINING THE CONCEPTS OF “QUALITY” AND “EQUITY”
TO EXAMINE SCHOOL SYSTEM PERFORMANCE
ACROSS REGIONS IN NAMIBIA

By Demus K Makuwa, Namibia.

Abstract

After independence in March 1990, the aim of the Ministry of Education in Namibia was to eradicate the huge educational inequalities that were inherited from the colonial government and to provide equality of opportunity to learn for all children regardless of their socio-economic background. Namibia participated in the two SACMEQ projects in 1995 and 2000 respectively, in order to establish a post-independence baseline for inputs to schools; to measure the quality of education and level of equity; and, to track changes over time. For the SACMEQ II study, the traditional approach to comparing learner performance across the 13 regions of Namibia indicated that regions that had high SES performed better than regions that had low SES. However, by applying the alternative approach which looks at quality (adjusted), social equity and distributional equity, it was only two regions that could be deemed to be good regions for reading because they satisfied all three criteria. No region satisfied all three criteria for Maths. Therefore, the challenge for the Ministry of Education in Namibia is to use a combination of both the traditional as well as the alternative approaches to comparing learner performance across regions in order to devise innovative ways of allocating educational resources to schools to provide every Namibian child with equal educational opportunity to learn as envisaged in the Education and Training Sector Improvement Plan (ETSIP) and “Vision 2030”.

1. Background

Namibia became independent in March 1990. It inherited a system of education that had been developed by the colonial apartheid South African government and had problems similar to those in the South African system. There were well-endowed schools for the “whites” and poorly-endowed schools for the “blacks” (Cohen, 1994). In short it followed the apartheid pattern. This system had to be changed after independence. The first thing to do was to create a single education system out of the 11 racially and ethnically based pre-independence education authorities and to have all children enrolled in school. Children had to be in schools that would not only be interesting and challenge the learners to think, but schools that should combat the principle of privilege (Namibia Vision 2030, 2004:29-30). Each child wherever he or she was born in Namibia and whatever the socio-economic background he or she came from should have equality of educational opportunity to learn (Constitution of the Republic of Namibia, Article 20). The Ministry of Education took various measures to improve access to schooling and the net enrolment ratio for the age group 7-13 who were enrolled in Grades 1 to 7 (primary education) increased from 77 per cent in 1991 to about 94 per cent in 2001 (Ministry of Education, EMIS Education Statistics, 2005:54). The level of allocation and equity in the distribution of material resources to schools also improved between 1995 and 2000.

It is a well-known finding in educational research that children from higher socio-economic backgrounds achieve better than those from lower socio-economic backgrounds (Heyneman and Loxley, 1983.; Caillods and Postlethwaite, 1989: 9.; Lockheed, Fuller and Nyirongo, 1989:240.; Voigts, 1998). This is mainly because the “children from wealthier backgrounds have greater access to a range of human and material resources that encourage, facilitate” and supplement school learning (Ross and Zuze, 2004).

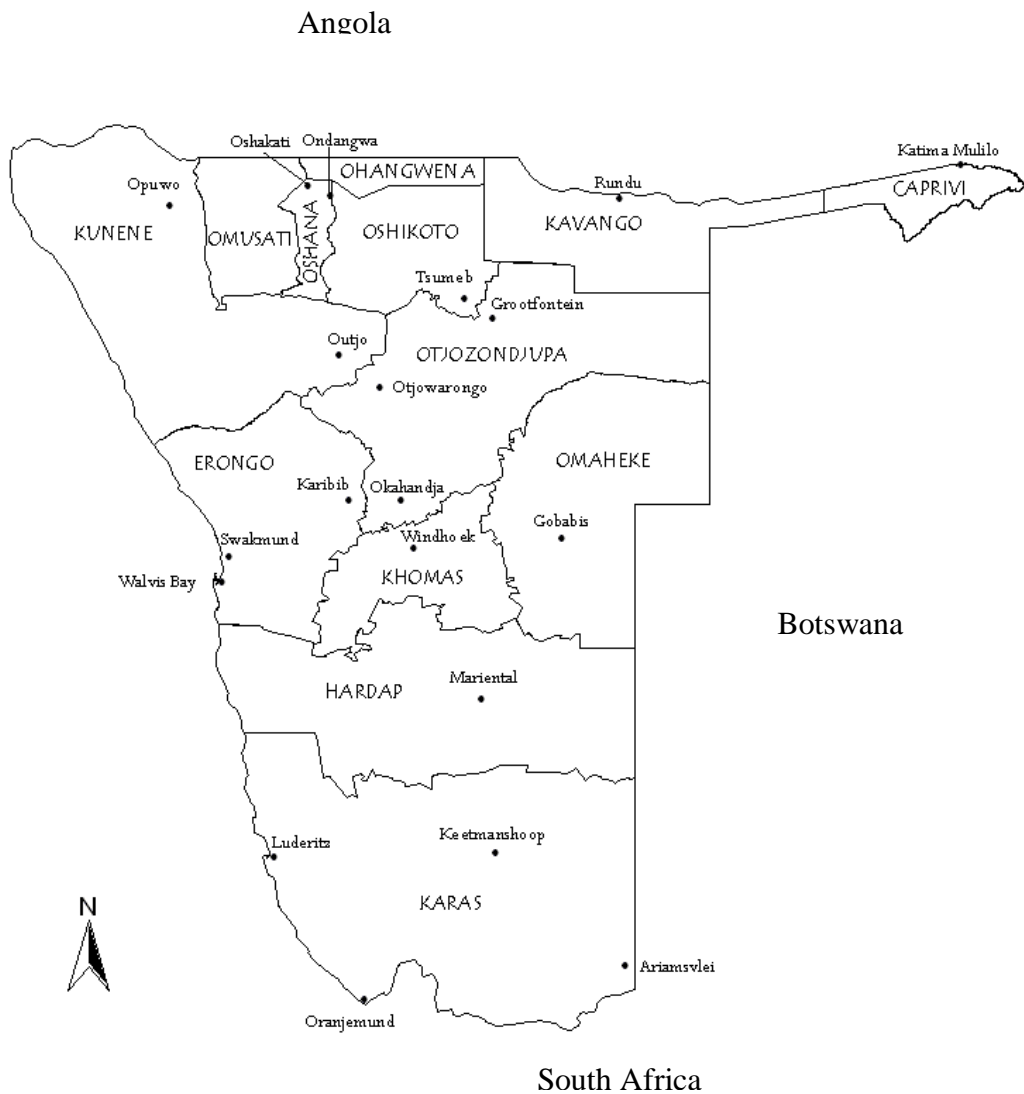
In this article the author has aimed at examining the relationship of Socio-Economic Status (SES) of children in Namibia to achievement. The general approach used was inspired by the seminal article ‘Traditional and Alternative Views of School System Performance’ by Ross and Zuze (2004). Whereas the Ross and Zuze article referred to

all the countries that had participated in the second Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ II) project, in this article the author focuses on the 13 regions of Namibia only. Because Namibia is a “land of great contrasts” geographically, socio-culturally and historically, this type of analysis should help education authorities to develop innovative approaches for achieving more equity in the distribution of resources across the 13 regions.

2. The Political and Socio-Economic Context of Education in Namibia

In 2001 the administrative structure of the Ministry of Education in Namibia was changed from 7 educational regions to 13 regions corresponding with the 13 administrative regions that had earlier been created under the central government policy of decentralisation. The level of economic development in each of the 13 regions was different. The 7 northern regions of Caprivi, Kavango, Ohangwena, Oshana, Omusati, Kunene and a large part of Oshikoto had the largest concentration of the population previously classified as “black,” under the “homelands” or “reserves” that had been created by the colonial apartheid authorities. These regions were neglected by the apartheid authorities in terms of socio-economic development even if more than 60 percent of the country’s population lived in these regions (National Planning Commission, 2001 Population and Housing Census, 2003:3-20). The mining town of Tsumeb, which is located within the boundaries of Oshikoto region was before independence in 1990, situated far south of the “red lineⁱ,” or outside the homelands. There were no major towns north of the “red line.” The pre-independence settlements such as Katima Mulilo, Rundu, Ondangwa and Oshakati that were located deeper in the former homelands have seen steady development which has led to their being proclaimed towns only after independence in 1990. The large parts of the 7 northern regions were therefore mainly inhabited by rural, communal subsistence farming communities.

Administrative Regions and Major Towns of Namibia



The central part of the country, stretching from the eastern border with Botswana to the west coast, consists of the Otjozondjupa, Omaheke, Khomas, Erongo and Hardap regions. These regions are characterised by large commercial farms, and major towns such as Grootfontein, Otjiwarongo, Okahandja, Windhoek, Mariental, Karibib, Swakopmund and Walvis Bay with a few pockets of the former “reserves” that were created for the other indigenous inhabitants of the central and southern parts of the country.

The Karas region which covers much of the southern part of the country has a sparse population of small livestock owners, with the concentration of population in towns such as Keetmanshoop, Karasburg, Luderitz and the diamond mining town of Oranjemund. The population in the 6 central and southern regions consists of rich commercial farmers, industrialists and various public administrative/service personnel, poor farm workers, poor small livestock owners as well as the urban working class. Therefore, it can be said that Namibia, with a Gini-coefficient of 0.70 (Namibia UNDP Human Development Report, 1996:7), is a country with huge socio-economic disparities whose historical origins could be traced back to the apartheid era. These historical socio-economic disparities have consequently led to yawning educational disparities. The Presidential Commission Report on Education, Culture and Training aptly observed that:

Namibia has greater disparities in wealth than any other country in the world. At one end of the scale are prosperous people living in fine houses and with all the comforts of modern society. At the other end are people living in abject poverty; they are hungry and diseased, and lack adequate shelter, food and amenities. The children of the first group attend schools which are the equivalent of schools in the most advanced countries, while the children of the latter group attend schools which are totally inadequate for their needs, without toilets, adequate classroom facilities, electricity, telephone communication, textbooks and writing materials. In addition many of their teachers are under-qualified. (Presidential Commission on Education, Culture and Training Report, 1999:11)

Even if much has been done under the post independence dispensation to redress the disparities by bringing development to all corners of the country and by building more schools to provide access to education for all children, the issues of quality and equity are still a major challenge for the education systems in Namibia. The results of the SACMEQ II study indicate that 45 per cent of the variations in learner reading scores in Namibia were due to variations between schools. This implies that in Namibia, the variation in learner scores was to a large extent influenced by differences or inequalities between schools than by differences in abilities among learners within a given school. Further, differences between schools (as will be shown later in this paper) were to a large extent influenced by the general socio-economic conditions of the region and/or the community in which the school was located. An explanation of the different ways of comparing learner performance across the 13 regions of Namibia is given in the next section.

3. Different Ways of Comparing Performance of the 13 Regions

3.1. A Traditional approach

The normal approach in many studies (all of the IEA studies from 1967 to 2003, as well as the PISA and the PIRLS studies – see references at end for some illustrative studies), has been comparing the educational systems under their review in terms of the raw achievement score or scaled score. A good system was meant to be one that had a high score. These types of comparisons have not often taken into account the well-researched finding that differences observed among school systems (or among educational regions in any given country) in average learner achievement are usually related to the socio-economic level of learner intakes. The reality however, is that traditional comparisons actually reflect a combined contribution of school factors and home environments to the education achievement of learners (Ross, 2005).

3.2. An alternative approach

As Ross and Zuze showed, it is in many ways just as important to examine systems of education in terms of three other indicators, namely *quality* (adjusted), *social equity* and *distributional equity*. What do these terms mean?

3.2.1. *Quality*. What would be the score in any one region in Namibia, if that region had the average socio-economic background of all learners at a particular Grade level? In this case an adjusted score is required of quality. As will be seen later, it is not only possible to produce an adjusted score for a region if it had the same socio-economic level as the average of all learners but also of learners in any other given region. This was a more meaningful alternative approach to comparing the contribution of school factors to learner achievement because it adjusted for the situation of different regions/schools drawing their learners from communities with different socio-economic profiles.

3.2.2. *Social equity.* How dependent is achievement on socio-economic status? It is possible to calculate the increase in achievement that is due to an increase in socio-economic status. A high value on the indicator would mean that there is a lot of increase in achievement due to socio-economic status. A low value would indicate that the dependence is weak. It is the latter that is desirable on condition that the level of achievement is reasonable. If the level of achievement is low and the level of social equity is low then this would mean that all learners have learnt virtually nothing and this would not be a desirable state of affairs.

3.2.3. *Distributional equity.* Is the distribution of learner achievement high, middling or low? A lower spread of achievement can be regarded as better than a large spread of achievement because a lower spread means that all children are receiving about the same chance and hence achieving about the same. However, care must be taken to ensure that there is not only a low spread in achievement, but preferably that the level of achievement is high. Where there is low achievement with a low spread, it means that all children under such a situation were achieving equally badly, and this is not desirable.

4. The Data Base used for this Study

The Namibian Ministry of Education is a member of SACMEQ. As such it participated in both the first and the second SACMEQ projects in 1995 and in 2000 respectively. The data base used for this study is from the SACMEQ II study of 2000 only. Data were collected from 275 primary schools selected from the 13 regions as indicated in Table 1.

Table 1: Number of Schools and Learners in the Planned and Achieved Samples

Region	Schools Planned	Learners Planned	Schools Achieved	Learners Achieved	Schools %	Learners %
Caprivi	15	300	15	258	100	86.0
Erongo	15	300	15	278	100	92.7
Hardap	15	300	15	297	100	99.0
Karas	15	300	15	281	100	93.7
Kavango	25	500	25	456	100	91.2
Khomas	25	500	25	483	100	96.6
Kunene	15	300	15	279	100	93.0
Ohangwena	35	700	35	614	100	87.7
Omaheke	15	300	15	281	100	93.7
Omusati	35	700	35	653	100	93.3
Oshikoto	25	500	25	434	100	86.8
Otjozondjupa	15	300	15	292	100	97.3
Oshana	25	500	25	442	100	88.4
Namibia	275	5500	275	5048	100	91.8

4.1 The Development of Socio-Economic Indicator

The socio-economic indicator used in this study was that developed by Dolata (in press) for the SACMEQ study. Three sets of information were selected from the learner questionnaire in order to form an indicator of socio-economic status.

These were:

4.1.1 Level of parental education. The learners gave information on the level of their parents' education separately for mothers and fathers. The questions were the same for mother and father. The question for the mother has been reproduced below.

What was the highest level of education that your mother (or female guardian) has completed?

(Please tick one box.)

- Did not go to school and had no adult education
- Completed some primary education
- Completed all of primary education
- Completed some secondary education
- Completed all of primary and secondary education (12 years)
- Completed higher studies

The average of the mother's and the father's educational levels was taken.

4.1.2 Level of the quality of the home. There were four questions on the learner questionnaire that were used to build a composite indicator of the level of the quality of the home. They were¹:

(a) What is the surface (covering) of the floor of the place (home) where you stay during the school week mostly made from?

- Earth or Clay, Canvas, or Wooden Planks
- Cement
- Carpet/Tiles (Plastic, Ceramic or Wooden)

(b) What are the outside walls of the place (home) where you stay during the school week mostly made of ?

- Cardboard/Plastic sheeting/Canvas/Reeds/Sticks/Grass thatch
- Stones/Mud bricks/Metal sheets/Asbestos sheets
- Wood (planks or timber)/Cut Stone/Concrete Blocks/Burned Bricks

¹ The questions as given here were not quite the same as in the learner questionnaire. Some of the categories have been collapsed to have a better distribution of responses.

(c) What is the roof of the place (home) where you stay during the school week mostly made of?

- Cardboard/Plastic Sheeting/Canvas/Grass Thatch and Mud/ Metal Sheets/Asbestos Sheets
- Cement or Concrete
- Tiles

(d) What is the main source of lighting by which you can read in the place (home) where you stay during the school week?

- Fire or Candle
- Paraffin, Oil, or Gas lamp
- Electric lighting

These four items were added together to create an index of the quality of the home.

4.1.3 Possessions in the home. Finally there was a question about the possessions in the home that was used as a proxy for the wealth of the home. The question was:

Which of the following things can be found in the place (home) where you stay during the school week?

- Daily Newspaper
- Weekly or Monthly Magazine
- Radio
- TV set
- Video Cassette Recorder (VCR)
- Cassette Player
- Telephone
- Refrigerator/Freezer
- Car
- Piped water
- Electricity (mains, generator, solar)
- Table to write on

These 12 items were summed to make a variable known as ‘possessions in the home’.

4.1.4 Socio-Economic Status. The three indicators mentioned earlier, that is, the level of parental education, level of the quality of the home and possessions in the home were then summed in such a way as to produce a 15 point scale overall index of socio-economic status. Furthermore a principal component analysis was run and the loadings on the principal component for all SACMEQ countries are indicated in Table 2.

Table 2: Loadings on Principle Components for all SACMEQ Countries

Indicators	Loadings on component
Parental education	0.751
Quality of home	0.861
Possessions in the home	0.873

It is this principal component that is the index of socio-economic status. In Namibia it correlates 0.552 with reading achievement and 0.487 with mathematics achievement. This is a high correlation and it can already be seen that there was a strong relationship between socio-economic status and achievement among Grade 6 learners in Namibia.

4.2 Constructing the Alternative Indicators

The values for the following indicators for all of the Namibian regions have been presented in Tables 3 and 4 for Reading and Mathematics respectively.

4.2.1 Indicator of Quality: The first indicator was a measure of quality for each region that would have been the score they would have obtained if the learners in that region had had the same socio-economic status as the learners in Namibia in general. In other words, these values estimated the expected average learner achievement for a region when all the regions had learner socio-economic inputs that were equal to the Namibian average.

4.2.2 Indicator of Social Equity: The values for each region represent the impact of a one standard deviation unit change in learner socio-economic status on learner achievement. Smaller values imply greater social equity. Larger values imply large differences in achievement associated with socio-economic differences. The disadvantage of this is that learners from poorer backgrounds might lag behind in achievement compared to learners from wealthier homes.

4.2.3. Indicator of distributional equity: This indicator shows how much spread there was among learner scores. The values were scaled to be equal to the variance (divided by 100) of the learner scores. A wider spread of learner scores indicates major differences in achievement between learners.

5. Interpreting the Tables.

In Table 3 the values deal with reading achievement. In the first column the traditional approach has been presented showing the scaled score by region. It can be seen that Khomas had the highest score of 567, while both Caprivi and Ohangwena had the lowest score of 417. For Namibia as a whole the average score was 463.

Table 3: Reading Achievement

Region	Traditional	Alternative		
	Mean reading	Quality	Social equity	Distributional equity
		<i>Line height</i>	<i>Line slope</i>	<i>Line length</i>
Caprivi	417	419	14	26
Erongo	527	432	80	142
Hardap	519	454	76	131
Karas	510	471	45	110
Kavango	431	437	14	26
Khomas	567	451	86	141
Kunene	448	440	33	61
Ohangwena	417	422	11	22
Omaheke	434	430	14	33
Omusati	424	427	8	23
Oshikoto	428	439	46	58
Otjozondjupa	469	439	52	101
Oshana	430	432	25	34
Namibia	463	438	39	70

However, (under the alternative approach), as soon as Khomas was given the same socio-economic values as the one for Namibia as a whole (i.e. saying that Khomas did not have the Khomas socio-economic values but those of Namibia as a whole) then the score became 451. On the other hand the scores for Caprivi and Ohangwena remained much

the same, that is, from 417 to 419 and from 417 to 422, respectively. Erongo, Hardap, and Karas had large decreases in scores whereas Caprivi, Kavango, Kunene, Omaheke, Omusati, Oshikoto and Oshana remained much the same.

In terms of social equity, the high values representing large socio-economic inequities associated with differences in achievement were found in Khomas (86), Erongo (80), and Hardap (76) regions. These are the regions that have major towns such Windhoek, Swakopmund, Walvis Bay and Mariental, with large informal settlements that have “mushroomed” around these towns after independence in 1990. The population in these regions may be characterised as being composed of a relatively few big industrialists, commercial farmers, chief executives and managers in the private and public sectors on one hand, and the urban working class, seasonal workers, informal workers, unemployed people, farm workers and a few small holdings and subsistence livestock farmers on the other hand. The high values representing large socio-economic disparities associated with reading imply that learners from poor families were not learning as much as learners from well-up to do families. The socio-economic and political dynamics of the cosmopolitan and heterogeneous population of the three regions create serious challenges for education authorities in trying to meet the rapidly growing and changing educational needs of the communities while ensuring equity in the provision all educational resources.

Very low values of social equity were found in Caprivi (14), Kavango (14), Ohangwena (11), Omaheke (14) and Omusati (8). These are predominantly rural regions where the majority of the people were poor subsistence farmers. At the same time, the levels of achievement, whether raw or adjusted, were low and the social equity was also low in these five regions. This means that there was very little that learners from these regions were actually learning. As mentioned earlier, the higher values for social equity (and high values mean inequity) were in regions such as Khomas, Erongo and Hardap that had higher scores.

In terms of distributional equity, it was those regions that had high social inequity that tended to have large distributions, - Khomas (141), Erongo (142), and Hardap (131). The results were the same for mathematics as they were for reading.

Table 4: Mathematics Achievement

Traditional		Alternative		
		Quality	Social equity	Distributional Equity
Region	Mean Math	<i>Line Height</i>	<i>Line slope</i>	<i>Line length</i>
Caprivi	405	407	11	27
Erongo	494	427	56	111
Hardap	499	449	58	96
Karas	483	450	38	88
Kavango	419	422	7	34
Khomas	531	422	81	127
Kunene	445	437	35	60
Ohangwena	399	339	1	28
Omaheke	426	424	6	26
Omusati	410	413	7	32
Oshikoto	420	431	48	72
Otjozondjupa	459	436	40	73
Oshana	402	404	21	40
Namibia	446	425	31	63

6. Judging the Namibian System using the Alternative Approach.

For reading, the average quality (adjusted) for Namibia was 438. Thus one could say that regions with values for quality (adjusted) *higher* than 438 had high quality. The average social equity for Namibia was 39. The regions with values *lower* than 39 could be said to have achieved social equity. The average distributional equity was 70 and hence regions with values *lower* than 70 could be said to have a good distributional equity. The equivalent figures for mathematics were 425, 31 and 63.

If one takes the view that a good system must satisfy all three criteria, then it can be seen that for reading it was only Kavango (437, 14 and 26) and Kunene (440, 33 and 61) that can be deemed to be good regions for reading whereas no region satisfied all three criteria for mathematics.

6.1 What are the implications for Namibia?

The national vision for the government of Namibia (Vision 2030) is to transform Namibia into a “knowledge based developed economy by the year 2030”. The education and training sector is expected to play a major role in the development of human capital for the attainment of Vision 2030. If Namibia is expected to be an industrialised country by 2030, then it goes without saying that there should generally be very little differences in the socio-economic conditions of people in all the regions. It also goes without saying that since there is a strong relationship between high SES and learner achievement it can be anticipated that learner achievement will be higher in all the 13 regions when all the regions will have attained higher SES . This is a major challenge for the broader national development efforts. It will have to take a lot of work and resources in terms of national economic development to bring the 7 northern regions of Caprivi, Kavango, Ohangwena, Oshikoto, Oshana, Oshikoto and Kunene to the same higher levels of socio-economic development as Khomas and Erongo, for example, but in a more equitable fashion. In educational terms it means applying innovative ways to equip schools in the 7 northern regions with all the necessary educational resources as a prerequisite to improved learning outcomes in

order to reciprocally support and sustain the envisaged socio-economic development of these regions and the country as a whole. Without deliberate efforts to improve equity, the socio-economic and educational disparities between the previously disadvantaged northern regions and the rest of the country will continue.

The Ministry of Education has done a lot since the attainment of national independence in 1990 in attempting to achieve a more equitable system for distribution of educational resources among the regions and to schools within the regions in order to improve the quality of learning outcomes, but much still needs to be done and possibly done differently. It is therefore necessary to have an understanding of the alternative approach to both quality and equity measures in examining learner performance across the 13 regions. When applying the *traditional approach to quality*, Khomas, Erongo, Hardap and Karas were on top in reading and in mathematics. However, by applying the *alternative approach* that looks at *social equity* and *distributional equity*, the four regions were low on the lists. This means that these regions had very high socio-economic inequities resulting into a situation where there were learners who came from well up to do homes who attended well resourced schools and thus performed well, while there were also learners from poor homes who attended schools that had very little resources and very little learning was indeed taking place.

The pattern of inequities was still very much similar to the pre-independence pattern in terms of the poor and rich regions as well as the rural – urban divide, even if the disparities may not be at the same scale and scope as the pre independence era. Therefore the challenge for education authorities in Namibia and the four rich regions of Khomas, Erongo, Hardap and Karas in particular is (for example), to improve distributional equity by targeting the distribution of school resources and qualified teachers to the most disadvantaged schools in the informal settlements around major towns and in rural areas and on farms, to give learners in these schools an equal opportunity to learn. At the national level, there is very little that the Ministry of Education alone can do to improve the socio-economic conditions of entire poor communities in the northern regions and in some pockets of the central and southern

regions, but there is a lot that the Ministry can do to have a more equitable distribution of the available educational resources. One way of doing this is to vigorously pursue and by apply the per capita formula for allocating of financial, human and material resources to schools and by assigning well trained/experienced teachers to “disadvantaged” regions and schools where their services were needed most. This could benefit learners in the densely populated northern regions.

The Kavango and Kunene regions were in the bottom half of the list among the 13 regions according to the traditional conception of quality. However, when looked at from the alternative approach, these two regions stand out to be the best among the 13 regions for reading, firstly, because the dependence of performance on SES was weak and secondly because these regions satisfied all the three criteria of *quality, social equity and distributional equity*. Schools in these two regions need further support in order for them to maximise their potentials. In these regions, what goes on in the school (provision of appropriate adequate educational resources) will have a greater impact on improving learning outcomes and compensate for the apparent poor family backgrounds of many learners. Special attention ought to be given to regions like Ohangwena where the level of achievement and the level of social equity were low, otherwise learners will not learn anything because this is one of the regions with a large number of poor families and many poorly resourced schools with large numbers of untrained or under-qualified teachers some of whom had primary education only.

The major challenge for the government and the Ministry of Education in Namibia is to balance the efforts being made to improve the quality of education with the need for more social equity and distributional equity in order to undo the inherited inequality of educational opportunity. The provision of equal opportunity to *quality education for all* is a real major challenge for the education sector’s capacity to make a meaningful contribution to the realisation of Vision 2030 in Namibia.

END

End notes

ⁱ The “red line” was the boundary between the northern communal farming areas or homelands and the central/southern commercial farming areas. The boundary was meant to restrict the movement of agricultural crops and livestock from the communal areas into the commercial areas and thus control the spread of crop and animal diseases from communal areas to the commercial areas. However, the red line was also used to control the movement of people from the northern homelands to the commercial centres.

References

- Artelt, C., Baumert, J., Julius-McElvany, N., and Peschar, J. (2003). *Learners for Life Student Approaches to Learning. Results from PISA 2000*. Paris, OECD.
- Beaton, A.E., Martin, M.O., Mullis, I.V.S., Gonzales, E.J., Smith, T.A., & Kelly, D.L. (1996). *Science Achievement in the Middle School Years: IEA's TIMSS*. Chestnut Hill, MA: Boston College.
- Beaton, A. E., Mullis, I. V. S., Martin, M. O., Gonzales, E. J., Kelly, D. L., & Smith, T. A. (1996). *Mathematics Achievement in the Middle School Years: IEA's TIMSS*. Chestnut Hill, MA: Boston College.
- Burstein, L. (ed.) (1993). *The IEA Study of Mathematics*, Vol. 3. Pergamon Press, Oxford.
- Caillods, F. and Postlethwaite, N.T. (1989). Teaching/Learning Conditions in Developing Countries. Caillods, F. (ed), *The Prospects for Educational Planning*. Paris: IIEP/UNESCO.
- Campbell, J. R., Kelly, D. L., Mullis, I. V. S., Sainsbury, M. (2nd edition) *2001 Framework and Specifications for PIRLS Assessment 2001* IEA, Boston.
- Cohen, C. (1994). *Administering Education in Namibia: The Colonial Period to the Present*. Windhoek: Scientific Society of Namibia.
- Comber, L. C., Keeves, J. P. (1973). *Science Education in Nineteen Countries: An Empirical Study. International Studies in Evaluation*, Vol. 1. Wiley, New York.
- Döbert, H., Klieme, E., & Sroka, W. (Eds.) (2004). Conditions of School Performance in Seven Countries. A Quest for Understanding the International Variation of PISA Results. Münster: Waxmann, ISBN 3-8309-1373-7.
- Dolata, S. (in press) Construction de l'Indice du Niveau socio-économique des élèves pour les systèmes éducatifs du SACMEQ. Paris: IIEP.
- Elley, W. B. (1993). *Reading Literacy in 30 Countries*. Pergamon Press, Oxford.

Foshay, A. W. *et al.* (ed.) (1962). *Educational Achievement of Thirteen-Year-Olds in Twelve Countries*. UNESCO Institute for Education, Hamburg.

Garden, R. A., Robitaille, D. F. (1989). *The IEA Study of Mathematics II: Contexts and Outcomes of School Mathematics*. Pergamon Press, Oxford.

Gorman, T. P., Purves, A. C., Degenhart, R. E. (eds.) (1988) *The IEA Study of Written Composition I: The International Writing Tasks and Scoring Scales*. Pergamon Press, Oxford.

Government of the Republic of Namibia. (1990). *The Constitution of the Republic of Namibia*. Windhoek.

Government of the Republic of Namibia. (1999). *Presidential Commission on Education, Culture and Training Report, Volume 1*. Windhoek: Gamsberg Macmillan Publishers.

Government of the Republic of Namibia. (2004). *Namibia Vision 2030: Policy Framework for Long-term National Development*. Office of the President, Windhoek.

Heyneman, S.P. and Loxley, W.A. (1982). Influences on Academic Achievement across High and Low Income Countries: A Re-analysis of IEA Data. *Sociology of Education*, Vol 55, No. 1: 13-21.

Husén T (ed.) (1967) *International Study of Achievement in Mathematics: A Comparison of Twelve Countries*, Vols. 1-2. Almqvist and Wiksell, Stockholm.

IEA (Some Selected Publications Only)

Anderson, L. W., Ryan, D. W., Shapiro R J (eds.) (1989) *The IEA Classroom Environment Study. International Studies in Educational Achievement*, (Vol. 2). Pergamon Press, Oxford.

Keeves, J. P. (1992). *The IEA Study of Science: Changes in Science Education and Achievement: 1970 to 1984*. Pergamon Press, Oxford (see also Chapter 9 in this book by Keeves J P and Schleicher A on ‘Changes in Science Achievement 1970-84’)

Keeves, J. P. (1995). *The World of School Learning: Selected Key Findings from 35 Years of IEA Research*. IEA, The Hague.

Keeves, J. P. (2001). Comparative Research in Education: IEA Studies. In: Smelser N J and Baltes P B (Eds) *International Encyclopedia of the Social and Behavioral Sciences* Pergamon Press, Oxford. (pp.2421-2427).

-
- Lewis, E. G., Massad, C. E. (1975). *The Teaching of English as a Foreign Language in Ten Countries. International Studies in Evaluation*, Vol. 4. Almqvist and Wiksell, Stockholm.
- Lockheed, M.E., Fuller, B. and Nyirongo, R. (1989). Family Effects on Students' Achievement in Thailand and Malawi. *Sociology of Education*, Vol 62, No. 4: 239-256.
- Maja, B.I. (1997). Access to Learning: The Enabling Conditions for Successful Learning Environments. Bak, N. (ed), *Going for the Gap: Reconstituting the Educational Realm*. Cape Town: Juta.
- Makuwa, D. K. (2004) The Relationship Between Pedagogical Conditions and Learner Achievement. *Namibia Education Research Association (NERA) Journal*, 2004 Edition.
- Martin, M.O., & Kelly, D.L. (Eds.) (1996). *TIMSS Technical Report: Volume I Design and Development*. Chestnut Hill, MA: Boston College.
- Martin, M.O., & Kelly, D.L. (Eds.) (1997). *TIMSS Technical Report. Volume II. Implementation and Analysis, Primary and Middle School Years*. Chestnut Hill, MA: Boston College.
- Martin, M.O., & Kelly, D.L. (Eds.). (1998). *TIMSS Technical Report: Volume III. Implementation and Analysis, Final Year of Secondary School*. Chestnut Hill, MA: Boston College.
- Martin, M.O., Mullis, I.V.S., Beaton, A.E., Gonzales, E.J., Smith, T.A., & Kelly, D.L. (1997). *Science Achievement in the Primary School Years: IEA's TIMSS*. Chestnut Hill, MA: Boston College.
- Martin, M.O., Mullis, I.V.S., Gonzales, E.J., Smith, T.A., & Kelly, D.L. (1999). *School Context for Learning and Instruction in IEA's Third International Mathematics and Science Study*. Chestnut Hill, MA: Boston College.
- Martin, M.O., Rust, K., & Adams, R.J. (Eds.) (1999) *Technical Standards for IEA Studies*. IEA Secretariat. Amsterdam.
- Martin, M.O., Mullis, I.V.S., Gregory, K.D., Hoyle, C., & Shen, C. (2001). *Effective Schools in Science and Mathematics*. Chestnut Hill, MA: Boston College.
- Martin, M. O., Mullis, I. V. S., Gonzales, E. J., Kennedy, A. M. (2003). *PIRLS 2001 International Report: IEA's Study of Reading Literacy Achievement in Primary Schools* IEA, Boston.

-
- Martin, M. O., Mullis, I. V. S., Gonzales, E. J., Kennedy, A. M. (2003). *Trends in Children's Reading Literacy Achievement 1991-2001*. IEA, Boston.
- Martin, M. O., Mullis, I. V. S., Kennedy, A. M. (2003). *PIRLS (2001) Technical Report*. IEA, Boston.
- Ministry of Education. (2005). EMIS Education Statistics. Windhoek, Namibia.
- Ministry of Education. (2005). Education and Training Sector Improvement Plan (ETSIP) 2005-2020. Windhoek, Namibia. Unpublished Working Document.
- Ministry of Education and Culture. (1993). *Towards Education for All: A Development Brief for Education, Culture and Training*. Windhoek: Gamsberg Macmillan Publishers (Pty) Ltd.
- Morrow, W. (1994). Entitlement and Achievement in Education. *Studies in Philosophy and Education*, Vol 13:33-47.
- Mullis, I.V.S., Martin, M.O., Beaton, A.E., Gonzales, E.J., Kelly, D.L., & Smith, T.A. (1998). *Mathematics and Science Achievement in the Final Year of Secondary School: IEA's TIMSS*. Chestnut Hill, MA: Boston College.
- Mullis, I. V. S., Martin, M. O., Kennedy, A. M., Flaherty, C. L. (2002). *PIRLS 2001 Encyclopedia: A reference guide to reading education in the countries participating in IEA's progress in international reading literacy study (PIRLS)*. IEA, Boston.
- Mullis, I.V.S., Martin, M.O., Fierros, E.G., Goldberg, A.L., & Stemler, S.E. (2000). *Gender Differences in Achievement: IEA's Third International Mathematics and Science Study*. Chestnut Hill, MA: Boston College.
- National Planning Commission. (2003). *2001 Population and Housing Census National Report*. Windhoek: Central Bureau of Statistics, Namibia.
- OECD (2001a) *Knowledge and Skills for Life. First results from PISA*. Paris: OECD.
- OECD (2001b). (Eds. Ray Adams and Margaret Wu) *PISA 2000 Technical Report*. Paris: OECD.
- OECD (2002). *Reading for Change. Performance and Engagement across Countries*. Paris: OECD.
- OECD (2003a). *Literacy Skills for the World of Tomorrow. Further results from PISA 2000*. Paris: OECD.

-
- OECD (2003b). *Student Engagement at School. A sense of belonging and participation, Results from PISA 2000*. Paris: OECD.
- Olmsted, P.P., & Weikart, D.P. (1994). *Families Speak: Early Care and Education in 11 Countries*. Ypsilanti, MI: High/Scope Press.
- Olmsted, P.P., & Montie, J. (2001). *Early Childhood Settings in 15 Countries: What Are Their Structural Characteristics?* Ypsilanti, MI: High/Scope Press.
- Passow, A. H. Noah, H. J., Eckstein, M. A., Mallea, J. R. (1976). *The National Case Study: An Empirical Comparative Study of Twenty-One Educational Systems. International Studies in Evaluation, Vol. 7*. Almqvist and Wiksell, Stockholm.
- Peaker, G. F. (1975). *An Empirical Study of Education in Twenty-One Countries: A Technical Report. International Studies in Evaluation, Vol. 8*. Almqvist and Wiksell, Stockholm.
- Postlethwaite, T. N., Wiley, D. E. (1992). *The IEA Study of Science II: Science Achievement in Twenty-Three Countries*. Pergamon Press, Oxford.
- Purves, A. C. (1973). *Literature Education in Ten Countries: An Empirical Study. International Studies in Evaluation, Vol. 2*. Almqvist and Wiksell, Stockholm.
- Robitaille, D.F., Beaton, A.E., & Plomp, T. (Eds.). (2000). *The Impact of TIMSS on the Teaching & Learning of Mathematics & Science*. Vancouver, BC: Pacific Educational Press.
- Rosier, M. J., Keeves, J. P. (1991). *The IEA Study of Science I: Science Education and Curricula in Twenty-Three Countries*. Pergamon Press, Oxford.
- Stevenson, H. W., Lummis, M., Lee S-Y., Stigler, L. W. (1990) *Making the Grade in Mathematics: Elementary School Mathematics in the United States, Taiwan, and Japan*. National Council of Teachers of Mathematics, Reston, Virginia.
- Thorndike, R. L. (1962). International comparison of the achievement of thirteen-year-olds. In: Foshay A W (ed.) (1962) *Educational Achievement of Thirteen-Year-Olds in Twelve Countries*. UNESCO Institute for Education, Hamburg.
- Thorndike, R. L. (1973). *Reading Comprehension Education in Fifteen Countries: An Empirical Study. International Studies in Evaluation, Vol. 3*. Almqvist and Wiksell, Stockholm.
- UNDP. (1996). Namibia, Human Development Report. Windhoek, UNDP.

SACMEQ

- Makuwa, D. K. (2004). *Conditions of Schooling and the Quality of Primary Education in Namibia*. Windhoek, Ministry of Education. Unpublished SACMEQ II National Working Report
- Ross, K. (2005). Interpreting Socioeconomic Gradient Lines. Unpublished notes.
- Ross, K., Saito, M., Dolata, S., Ikeda, M. (2004). *SACMEQ Data archive*. International Institute for Educational Planning. Paris
- Ross, K., Zuze, L. (2004). Traditional and Alternative Views of School System Performance. *IIEP Newsletter*. October-December, 2004. pp8-9.
- Saito, M. (2004). Gender Equality in Reading and Mathematics: reflecting on EFA Goal 5. *IIEP Newsletter*. April-June, 2004. pp.8-9.
- Voigts, F. (1998). *The Quality of Education: Some Policy Suggestions based on a Survey of Schools – Namibia*. Paris, IIEP.