

## CHAPTER 4

### TEACHING AND LEARNING CONDITIONS

In this chapter, the teaching and learning conditions at home and in school of the learners surveyed are presented and discussed with a view of ascertaining the influence on learning achievement [see Chapter 5]. Data are gathered from the following survey instruments: the Learner Questionnaire, the Parent Questionnaire, the Teacher Questionnaire and the School Head Questionnaire. All four questionnaires elicit information on both background characteristics of the targeted groups and on the environmental conditions for the teaching and learning processes.



The results are presented either in the form of percentages or in the form of ‘index scores’ that were specifically constructed from the set of variables derived from these questionnaires. The process entailed first selecting a set of variables that could be grouped conceptually. Then values were carefully allocated to each of the set of variables in such a way that a composite indicator could be produced. The process of construction of each indicator is explained in Appendix A.

### LEARNER BACKGROUND

There are generally acceptable **gender** balances among learners from most of the participating countries [Table 4-1], the exceptions being Senegal and Mali with markedly higher enrolment among male learners.

The **learner age** of six years is the generally accepted standard for first year school enrolment in most African countries. Based on this starting age and assuming that a learner does not lose years through repetition, she/he could be expected to be aged nine years in Grade 4. With the exception of Mauritius [mean age 8.7 years] the entire learner sampled is on average ten years or older in Grade 4 [Table 4-1]. The Botswana sample has a mean learner age of as high as 13.5 years which is unusual. A further analysis of the data from Botswana may be needed in the national report.

A striking feature of most African educational systems is that the quality of the education offered is strongly determined by the status and nature of the language policy and practice within the country. A critical factor in the progress of learners is the degree to which the **home language** is the same as the language of instruction at school. In instances where the home language is the same as the language of instruction, learning is reinforced directly. The learner can freely communicate what she/he has learnt at school, in the home environment and her/his learning is more likely to be directly reinforced through interaction with all members of the family. Teaching and learning in the mother tongue of most learners is a rare educational phenomenon in Africa. As shown in Table 4-1, very few children have either English or French as their home language which is the medium of instruction and examination for the majority of learners, either all through-

out or at higher grades of their schooling. The proportion of homes where the language of instruction [English or French] is the same as the home language is highest in Zambia and in Senegal. This in effect

means that for all the countries participating, the overwhelming majority of learners between 75% and 90% have to learn in a language other than their home language. It must be noted, however, that while the language of instruction and home language in Morocco and Tunisia is Arabic, the table only presents information on whether French is spoken at home in these two countries.

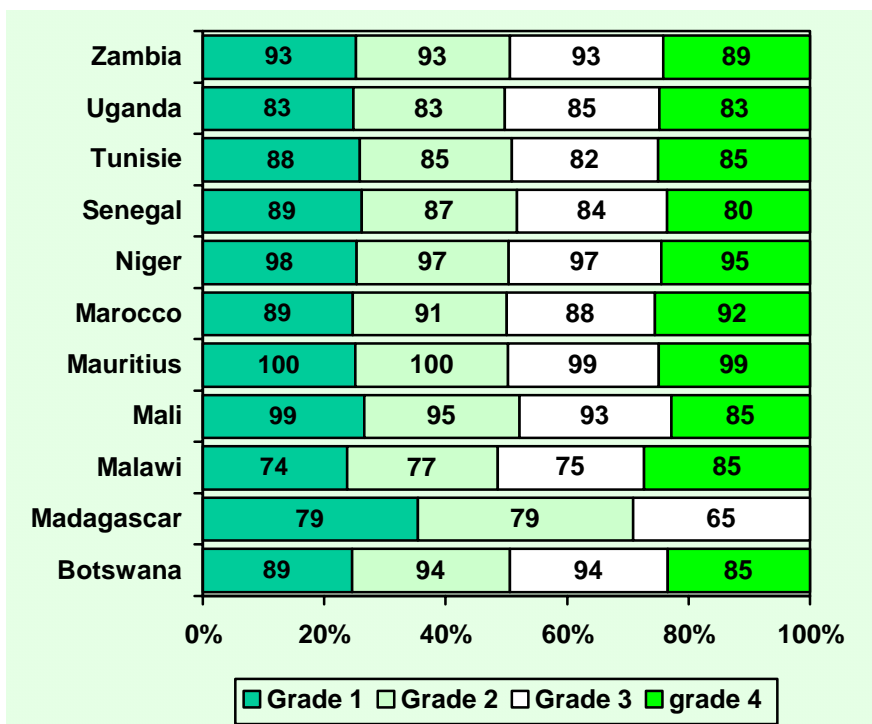
**TABLE 4-1: GENDER, MEAN AGE, HOME LANGUAGE, ATTENDANCE AT PRE-SCHOOL CLASSES & PARTICIPATION IN SCHOOL SPORT AND CULTURAL ACTIVITIES**

	Gender %		Mean Age	Home Language English/ French		Attendance at pre-school classes [%]	Participation in school sport and cultural activities [%]
	Boys	Girls					
Botswana	50.0	50.0	13.5	8.3	E	34.5	52.6
Madagascar	51.2	48.8	11.4	5.8	F	25.3	75.4
Malawi	50.0	50.0	12.4	10.4	E	24.1	77.4
Mali	54.4	45.5	11.4	18.9	F	31.4	30.8
Mauritius	47.5	52.5	8.7	8.9	E/F	97.4	87.2
Morocco	50.6	49.4	10.9	18.8	F	70.8	36.7
Niger	52.6	47.4	10.7	14.9	F	56.2	22.4
Senegal	57.7	42.3	11.9	23.2	F	56.6	33.2
Tunisia	52.8	47.2	10.5	18.9	F	48.4	26.5
Uganda	50.7	49.3	10.7	18.9	E	48.8	71.7
Zambia	49.4	50.6	11.0	26.5	E	47.7	60.6

F=French  
E=English

Most school survey research has clearly shown the strong influence of pre-schooling on learner performance. It is also argued that the availability of *pre-school* classes is associated with reduced repetition rates and lower average ages in any Grade. Serious between

**FIGURE 4-1: PERCENTAGE OF PUPILS PASSING GRADES AT FIRSTS ATTEMPT**



country differences are observed among the African countries surveyed [Table 4-1].

For example, 97% of the Mauritius learners attended some pre-school classes, whereas only 24% of Malawi learners had been to pre-school classes. A rather similar trend is observed in the between-country differences for participation in *school sport and cultural activities*, i.e. as high as 87% in Mauritius and as low as 22% in Niger. This could imply that schools in the latter tend not to offer opportunities for sport and cultural activities after school. Such highly varied characteristics among the

learners surveyed clearly explain the marked between-country differences in learner performance observed in Chapter 3.

The number of years a learner spends in a grade is an important statistic, since repetition is a key source of inefficiency of an education system. A reduction in *repetition rates* ensures that improved efficiencies are achieved without necessity for greater financial inputs. It is reassuring to note that the percentage of learners passing each grade at the first attempt is relatively high for all countries. This means that repetition rates are relatively low for all grades and for all countries [Figure 4-1]. Mauritius has the highest pass rate at first attempt while relatively higher repetition rates are experienced in Malawi and Madagascar. It is, however, important to note that in some countries the principle of automatic promotion is applied, thus learners are promoted to the next grade without having to repeat.

## HOME BACKGROUND

The home background characteristics and conditions of the learner often determine her/his educational career. From the 1999 MLA survey in Africa, the key home background characteristics and conditions are discussed. The capacity of learners to concentrate and extract the maximum value from their school experience is severely reduced if they have not received an adequate food intake. Therefore the regularity, number and adequacy of **meals received by learners** in a school day is of critical importance to raising efficiencies in the utilisation of school opportunities. No matter how small, the percentages of learners who indicated that they did not receive any food with regularity are a cause of great concern [see Table 4-2]. Significant proportions of learners in Mali, Uganda and Zambia have no more than one meal daily while the majority of their counterparts in the other countries have two or more meals daily. Such disparities must be considered when comparing the level of learner performance between countries.

The home environment of learners while they are attending school is important in securing support for their schoolwork. The physical presence of both **parents in the home** is of particular importance in this respect [Table 4-2]. High proportions of the Morocco and Tunisia learner groups stay in households where both parents are present. In contrast, only 40.7% of Botswana learners indicated that they live with both parents.

**TABLE 4-2: MEALS PER DAY & PUPIL ACCOMMODATION DURING SCHOOL TERM**

	Meals per day			Pupil accommodation during school term %		
	No meals	One meal	Two meals or more	With both parents	With one parent	Other or boarding
Botswana	2.6	20.4	77.0	40.7	46.2	13.1
Madagascar	1.9	11.2	80.0	66.1	12.5	21.4
Malawi	3.0	21.9	75.1	68.4	20.6	10.9
Mali	3.0	95.6	1.4	76.9	9.7	13.4
Mauritius	1.7	13.5	84.8	77.9	15.8	6.4
Morocco	2.0	12.0	86.0	91.2	5.8	3.0
Niger	1.1	5.4	93.4	79.1	11.9	8.6
Senegal	1.5	5.0	93.5	69.1	6.1	12.2
Tunisia	0.4	8.2	91.6	91.0	4.6	1.2
Uganda	4.7	39.0	56.3	56.5	28.8	14.7
Zambia	3.8	40.8	55.3	62.9	24.4	12.7

The distance that a learner has to **travel to school must** be considered in developing a picture of the extent to which she/he can take advantage of the schooling opportunities available to her/him [Table 4-3]. For a learner who has to walk some distance to school, it is important that she/he receives adequate food for nutrition and energy at home.



The distance to school as measured in time traveled may have an effect on the time a learner can spend at school. Longer travel time

implies less time available for extra-mural activities. Travel time can be drastically shortened if the household has either its own vehicle or the financial resources to put the learner on some form of

**TABLE 4-3: SCHOOL ACCESS INDEX, MODE OF TRAVELLING TO SCHOOL & PUPIL ATTITUDE TO SCHOOL AND TEACHER INDEX**

	School Access Index		Modes of travelling to school [%]				Pupil Attitude to School and Teacher Index	
	Mean	SD	Walk	Bicycle	Bus/Car	Other	Mean	SD
Botswana	4.8	3.6	89.0	2.2	6.5	2.3	4.4	1.0
Madagascar	4.6	1.2	95.2	2.3	5.3	-	-	-
Malawi	5.1	3.2	96.3	1.6	1.7	0.4	4.9	1.0
Mali	2.5	2.2	92.6	3.7	1.6	2.1	4.8	0.5
Mauritius	3.8	3.0	57.7	1.5	35.3	5.5	4.9	0.4
Morocco	3.2	2.5	86.0	2.8	2.9	8.4	4.9	0.4
Niger	2.3	1.9	96.6	2.7	1.1	1.0	4.7	0.7
Senegal	2.1	1.8	89.8	4.2	5.0	0.9	4.8	0.6
Tunisia	3.5	2.5	89.1	2.8	2.3	1.8	4.7	0.5
Uganda	5.0	3.2	92.0	3.1	4.3	0.7	4.9	0.5
Zambia	5.2	3.4	87.2	2.3	9.7	0.8	4.8	0.5

public transport. With the exception of Mauritius, between 82% to 96% of learners in the participating countries walk to school while low numbers utilise other modes of transportation

In order to develop a measure of the relative 'difficulty' or 'ease' of access to schools in the participating countries, the **School Access Index** was calculated from learners' self reports of distance and time from school [Table 4-3]. Composite scores ranged from 0 to 10, where a low score implies easy access and a high score increased difficulty in moving to school. The easiest access was reflected in the score for Senegal [2.1] while highest difficulty in access is reflected in the score of Zambian learners [5.2].

Information on the general attitude of learners to school and on the levels of support they receive in the household can assist in understanding their learning achievement scores. Since positive attitudes of learners to their school can influence their levels of performance, an **Attitude to School and Teacher Index**

was constructed [Table 4-3]. A range of scores from 0 to 5 is determined where higher scores implied more positive attitudes to school. The index reflects a uniformly high level of positive attitudes to school across all the learner groups in the participating countries.

## HOME LEARNING SUPPORT

There is sufficient evidence today from both developed and developing societies that quality of education requires the strong support from the home of the learners. School or other educational institutions alone would not be able to guarantee an acceptable level of educational quality. Some key variables are chosen here to describe the home learning support from the data of the 1999 MLA surveys.

As shown in Table 4.4, there are marked variations among the African countries regarding home learning support. The practical application of lessons learnt during school hours in the form of homework is an important element in the learning process. Thus it is important to track the regularity with which teachers set homework. High percentages of learners in Mauritius receive homework regularly from their teachers whereas the lowest one is found in Niger, which is more than 10% lower than the next country average.



TABLE 4-4: INFORMATION ABOUT HOMEWORK

	Teacher sets homework [%]	Households where there is someone who helps pupils with homework	Pupil reasons given for being unable to do homework			
			Looks after brothers or sisters [%]	Helps parents	Watches TV/Radio [%]	Plays with friends [%]
Botswana	89.2	78.6	48.7	65.2	49.7	51.2
Madagascar	89.1	59.9	37.0	93.8	61.1	
Malawi	83.4	57.0	27.1	53.1	25.9	25.0
Mali	87.0	58.2	27.0	42.8	21.5	28.1
Mauritius	97.0	74.9	20.0	52.9	35.4	30.5
Morocco	96.7	58.9	17.6	57.3	6.3	18.2
Niger	72.0	58.5	46.0	56.0	51.9	43.3
Senegal	87.5	69.6	43.7	65.5	37.7	36.4
Tunisia	93.8	71.6	23.7	47.5	8.2	8.4
Uganda	86.5	57.3	57.2	82.3	50.8	47.0
Zambia	91.4	78.2	46.9	76.9	45.8	53.0

Learners' response to the question on whether there was someone at home who could **help with their homework** ranged from 57.0% to 78.6%. For all the participating countries approximately 60% or more of all learners indicated that there was someone in their home to assist with homework. The nature and type of assistance, however, is not known. This is a crucial issue that needs to be addressed. Support at home for schoolwork has been found in a number of school surveys, as well as in this current analysis [See Chapter 5] to have a positive impact on learners' learning achievement.

Homework provides the opportunity for learners to practise the newly acquired skills at school. However, homework is not necessarily prioritised after school for certain groups of children because there are other activities reserved for out-of-school time. It is therefore important to establish the extent to which homework patterns are affected by competing activities. Learners' allocation of time to **activities other than school related work** can reveal patterns in demand from parents for assistance in household chores, in childminding, or in their own choice of recreation options such as playing with friends, watching TV or listening to the radio [Table 4-4]. Significant percentages of learners in Uganda indicated that they engaged in childminding, while in Madagascar many learners indicated that they helped their parents in the household. These percentages suggest that traditional childhood roles take up learners' time after school. In this regard, a gender breakdown of the allocation of such responsibilities would be of interest.

The education levels of parents influence the extent to which they are predisposed to support the learning development of the children in the home. Parents with higher education levels frequently manifest greater confidence in their ability to support their school-going children at the psychological level. Also, higher parental education levels reflect that parents are academically capable of providing such assistance. Parental education levels have constantly been found in most educational surveys to be a decisive factor affecting learner performance. The **Parent Education** Index gives a combined indication of the education levels of both mother and father [Table 4-5]. Scores for each learner's household could range from 0 to 8 with a higher score indicating higher education levels of both parents. The mean parent education level in the Parent Education Index reflects a range between Morocco [1.25] and Mauritius [4.8]. The countries with lower scores need to consider ways in which they can either increase adult education levels or compensate for low levels through initiatives directed at making schools and teachers more supportive. The impact of this index on learner performance and quality of education for all is pertinent for the between- and within-country differences.

The extent to which learners engage in out-of-school reading is directly influenced by the availability of reading materials in the home. The quantity and variety of materials available will reflect parental reading patterns. Thus learners from homes where parents engage in reading of greater quantity and variety have a

**TABLE 4-5: PARENT AND HOME BACKGROUND INFORMATION**

*	Parent Education Index		Home Reading Material Index		Home Learning Support Index		Parent Opinion About Education Index	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Botswana	3.5	2.3	2.7	1.6	7.0	2.6	2.4	0.8
Madagascar	1.6	1.0	-	-	-	-	-	-
Malawi	2.7	1.8	2.4	1.6	6.3°	3.3	2.6	0.7
Mali	2.0	2.5	1.5	1.6	5.3*	0.9	2.9	0.4
Mauritius	4.8	1.6	2.8	1.5	7.4	2.5	2.6	0.7
Morocco	1.3	2.3	3.0	3.4	3.7*	2.1	2.6	0.7
Niger	3.9	2.0	1	0.1	5.0*	1.4	2.9	0.4
Senegal	1.7	2.1	1.7	2.1	5.3°	1.0	2.9	0.3
Tunisia	-	-	-	-	-	-	-	-
Uganda	3.6	2.2	2.9	1.7	6.6	3.1	2.6	0.7
Zambia	3.8	1.2	2.0	1.5	7.1	2.9	0.9	0.6

\* Range 0-12  
Range 0- 6

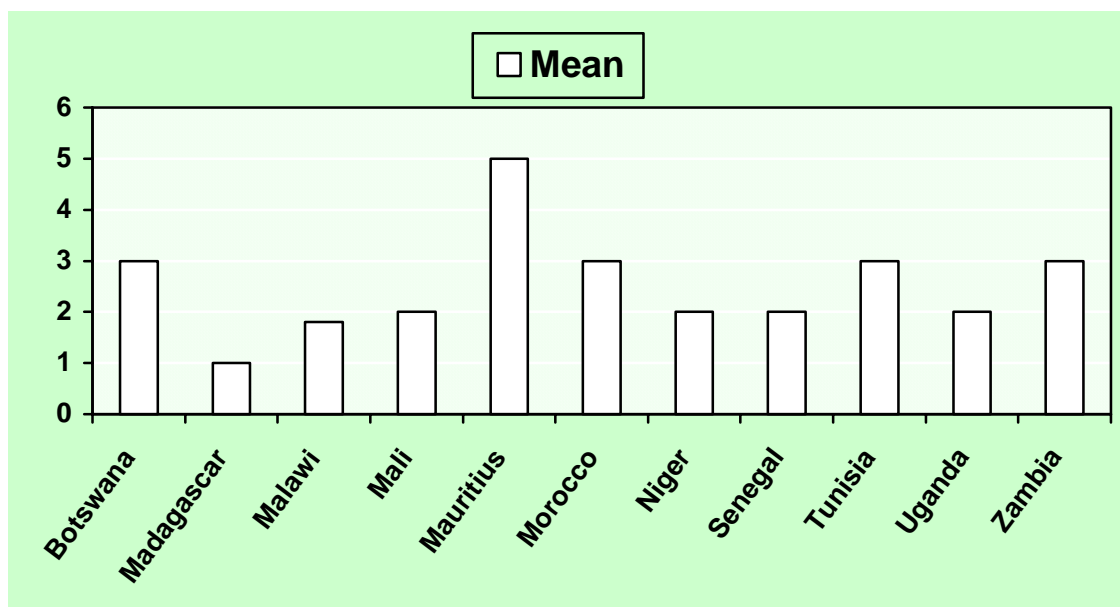
correspondingly high opportunity to read and to model parent reading behaviour. The **Home Reading Materials** Index provides an indication of the quantity of learning materials available in the home [Table 4-5]. Scores can range from 0 to 6 where higher scores signify greater variety and availability of reading material. Low scores imply that learners are probably receiving less exposure than required to reading materials. Once again the between-country differences on this index [3.0 for Morocco as compared to 1 for Niger] are

quite glaring. Policy makers would need to seek ways of improving the quality of education by using such indices as yardsticks for interventions to improving school and public library access, or perhaps through the subsidy of books and newspapers to schools.

The **Home Learning Support** Index provides a picture of the interest and involvement displayed by parents in school activities of their children [Table 4-5]. The questions that make up this index include the frequency with which parents or other household members participate in school activities, discuss the progress of the child with the class teacher and discuss schoolwork with the child. This index produced a range from 0 to 18 where higher scores indicate a more supportive household learning environment. The mean scores on this index for each country were grouped in the lower third of the possible range of the Index, which suggests that there is considerable scope for parents and other members of the household to support school going learners.

The extent to which parents are positively oriented towards the education of their children is important. Parents who place a high value on education will be committed to ensure that their children stay at school as long as possible and receive maximum benefit from the experience. The **Parent Opinion About Education** Index was constructed to provide an indication of the extent to which parents value the importance of education for the future of their children [Table 4-5]. The index ranges from 0 to 3, with scores closer to 3 indicating a strong positive attitude towards education. The table providing mean values for parents by country clearly indicates that parents in all countries highly prize the educational experience that their children receive. Parental belief in the value added by education for social mobility and fruitful career of their children is a well-known fact. What parents tend to overlook is the importance of home learning support to

**FIGURE 4-2: ACCESS TO INFORMATION INDEX**



learning and for achieving quality of education for all.

Access to information in various printed or telecommunication media broadens the opportunity for learners to absorb information, to read and to increase their knowledge base. Information access potentially enriches their learning experience. The **Access to Information** Index [Figure 4-2] is constructed to reflect the different modes of information available to learners in their home and neighbourhood environment such as: access to radio, TV, video, computer, telephone, books and magazines in the home, and a local library. The index ranges from 0 to 7 where scores closer to 7 imply relatively high access to information. The average score on the Access to Information Index is highest for homes in Mauritius [5.1] and lowest for homes in Madagascar [1]. The low mean score for a number of the participating countries implies that the average households in these countries have low access to information sources that could support learner schoolwork. This in effect means that learners are dependent on the school as the main source of their information needs.

A reinforcing literary environment can boost learner performance and quality of education for all. It is not enough to assume that learning takes place only within the four walls of the classroom. In simply describing the results from the analysis of the home environments of learning in the 1999 MLA African countries, an important element is being added. The march for quality education for all can only be achieved if parents and communities are empowered to play the role they can and should in this process.

## TEACHER BACKGROUND

The quality of the learning environment at school depends to a large extent on the quality of the human resource capacity available. Teachers are the most important human resources and remain the backbone of any educational system. The background characteristics of the teaching force in terms of age, gender,

**TABLE 4-6: AGE, SEX & NUMBER OF YEARS OF TRAINING OF TEACHERS**

	Age Categories [%]			Sex [%]		Training [%]					
	Less than 20	Between 21 & 40	Over 40	Male	Female	Primary education	Secondary education	1 yr post-secondary	2 yr. post-secondary	3 yr. post-secondary	4 or more yr. post-secondary
Botswana	0.6	73.1	26.3	20.4	79.6	11.2	40.8	0.0	15.1	25.0	7.9
Madagascar	1.6	47.7	50.8	54.4	45.6	4.1	90.2	-	-	5.7	
Malawi	0.0	88.9	11.1	48.4	51.6	1.6	77.8	2.6	12.7	1.6	3.7
Mali	1.5	41.8	56.7	77.6	22.4	33.9	41.9	8.1	12.9	3.2	0.0
Mauritius	0.0	43.2	56.8	60.5	39.5	0.0	76.0	2.3	13.2	2.3	6.2
Morocco	0.0	59.0	41.0	56.2	43.8	2.9	46.0	15.2	4.4	3.2	27.3
Niger*	0.0	82.5	17.5	37.5	62.5	-	-	-	-	-	
Senegal	0.0	69.1	30.9	76.4	23.6	13.1	35.5	15.9	5.6	5.6	4.7
Tunisia	0.0	78.1	21.9	53.3	46.7	-	49.6	29.9	17.5	-	1.5
Uganda	0.0	89.6	10.4	58.3	41.7	3.4	23.7	1.9	44.0	4.1	22.9
Zambia	1.4	65.3	33.3	24.2	75.8	13.2	47.1	1.5	32.4	2.9	2.9

\* Information not available

qualifications, experience and language can directly and indirectly influence the teaching and learning processes, and henceforth learner performance.

As regards **teacher age** of the teaching force from the 1999 MLA African participating countries, Niger, Malawi and Uganda currently have predominantly young teachers in service with over 80%



between the ages of 21 to 40 [Table 4-6]. Countries with ageing teaching populations are Mauritius, Mali and Madagascar with over half of them older than 40 years. Marked differences are also found in terms of **gender balance**, with female teachers in Botswana, Zambia and Niger in a clear majority and male teachers in Mali and Senegal in the majority. The between-country differences in teacher age and gender observed here may be of significant relevance to between-country differences in learning achievement.



**Teacher training** is a key input in improving the quality of teaching. In order to develop a picture of the training background of teachers in the participating countries, the percentage of each group which had received one or more years post secondary training was calculated [Table 4-6]. This revealed that

**TABLE 4-7: TEACHER EXPERIENCE**

	Teaching career length in years		Years teaching Grade 4*		Years of teaching in the current school	
	Mean	SD	Mean	SD	Mean	SD
Botswana	11.5	9.9	2.6	2.1	4.7	8.0
Madagascar*	17.4	8.0	-	-	8.0	16.4
Malawi	13.1	22.2	12.4	28.2	9.5	22.6
Mali	14.8	10.0	3.0	4.2	4.6	3.5
Mauritius	18.9	9.6	4.1	4.0	4.1	2.9
Morocco	19.3	9.5	9.0	7.5	5.7	5.8
Niger	1.7	0.8	1.3	0.6	1.3	0.7
Senegal	10.9	8.5	3.0	3.8	5.8	5.8
Tunisia	12.9	7.8	3.1	2.0	5.1	5.0
Uganda	8.1	6.6	3.1	2.4	4.3	3.1
Zambia	12.2	8.9	3.4	4.0	0.0	0.0

\*Question not included for Madagascar

Malawi, Mauritius, Madagascar and Mali had low proportions of teachers with post-secondary qualifications. How these important teacher-related characteristics would influence the level of learning performance between countries is an interesting question to be considered for the region as a whole.

In terms of **teaching experience**, in the majority of participating countries teachers had between ten and twenty years of experience, except for Uganda, Malawi and Niger where mean teacher experience was 8.1, 7.1 and 1.7 years respectively [Table 4-7]. For most teachers, their experience in teaching Grade 4 was considerably less than their total teaching experience. This implies that there is high teacher mobility between Grades over time. Malawi has the most stable teaching group with high average experience overall, high average experience in teaching Grade 4 and long service in their current school. Of considerable interest is whether the characteristic of stability observed for Malawi teachers could have any effect on the learning achievement level of their learners.

**TABLE 4-8: TEACHER SUPERVISION**

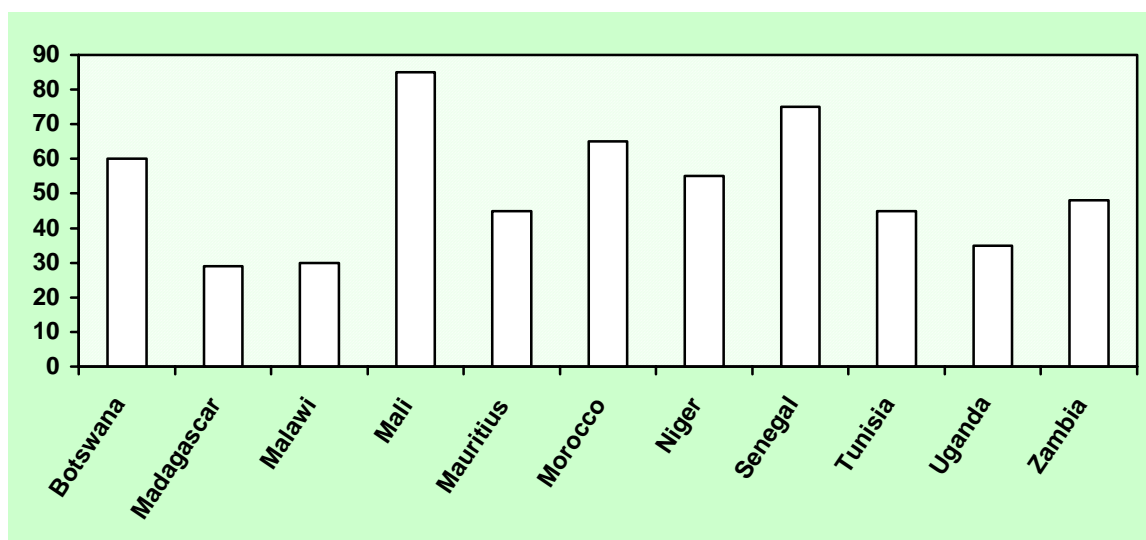
	How often supervisor observes teaching [%]			
	Not at all	Once a	Twice a year	At least three times year
Botswana	0.0	8.4	14.2	77.4
Madagascar	46.4	53.6*	-	-
Malawi	8.4	15.2	5.8	70.7
Mali	11.1	15.9	9.5	63.5
Mauritius	3.9	3.9	17.1	75.2
Morocco	2.8	7.3	19.0	70.9
Senegal	7.0	21.9	17.5	53.5
Tunisia	2.2	21.2	17.5	59.1
Uganda	5.9	3.3	1.8	89.0
Zambia	7.8	10.9	12.5	68.8

\* at least once a year

The quality of teaching is influenced by the extent to which teachers engage in a process of evaluation. Support for teachers through **observation by a supervisor** is an essential feedback in the teaching practice. Such observation also serves to ensure acceptable levels of accountability in the teaching force. It is encouraging to note that high levels of supervision are evident in most participating countries, especially in Uganda, Botswana, Mauritius, Malawi and Morocco where more than 70% of teachers are observed by supervisors at least three times a year. The proportion of teachers who are “not supervised at all” ranges between zero and 11% in the participating countries [Table 4-8]. It must, however, be noted that the high levels of supervision could include within-school supervision as well.

The teaching corps is a valuable national resource, as mentioned earlier. Trained teachers represent a significant social investment and their levels of motivation and career commitment are of concern to policy makers. Therefore an indicator of the predisposition of teachers to leave the ranks of teaching is of interest.

**FIGURE 4-3: PERCENTAGE OF TEACHERS WHO REPORT THAT THEY WOULD CHANGE CAREER**



Teachers were required to indicate whether they would **change to another career** if they had the opportunity. The fact that in 5 countries more than 50% of teachers indicated willingness to change career is a matter of concern [Figure 4-3].

The findings here clearly point to the need to critically examine teacher conditions, teacher promotion procedures as well as in-service training needs and support.

## TEACHING CONDITIONS

The availability of a range of teaching and related equipment, supplies, furniture, and various forms of printed media for teachers and learners is critical in facilitating the process of teaching and learning worldwide.

**TABLE 4-9: INFORMATION ON CLASSROOM AND TEACHER RESOURCES**

	Classroom Furniture Index		Teacher Guide Available Index		Learning Materials Index	
	Mean	SD	Mean	SD	Mean	SD
Botswana	4.9	1.2	2.0	1.2	4.7	1.3
Madagascar	3.5	1.4	3.4	1.3	1.5	0.8
Malawi	1.8	1.3	3.1	1.1	3.5	1.2
Mali	4.5	0.8	2.1	1.2	4.9	0.7
Mauritius	5.9	.3	1.4	1.2	5.0	1.0
Morocco	4.9	0.5	2.7	1.4	5.2	1.5
Niger	3.6	1.7	2.0	0.0	3.9	0.8
Senegal	5.1	1.1	2.6	1.5	3.4	1.5
Tunisia	4.8	0.4	3.5	0.8	-	-
Uganda	3.4	1.4	2.5	1.2	4.1	1.2
Zambia	3.6	1.5	2.7	1.1	4.1	1.5

The rapidly tightening financial constraints on African education are well known. In addition, the very high proportion of recurrent expenditures that is allocated to teacher salaries severely restricts the funds available to improve classroom and teacher resources.

The availability of sufficient basic furniture for the use of learners and for the use of teachers [e.g. desks, tables, and chairs] produces an enabling physical environment that can facilitate the teaching and

learning process. An index based on teacher ratings of sufficiency of six basic classroom furniture items [chalkboard, teacher chair, teacher table, learner desks, learner chairs and cupboards] was constructed. The **Classroom Furniture** Index can range from 0 to 6 where a high score indicates higher levels of furniture availability [Table 4-9]. The mean country scores on this index range between 1.8 for Malawi to 5.9 for Mauritius. Such low range of scores, which also include Uganda, Zambia, Madagascar and Niger, suggests that classroom furniture supplies need to be improved.

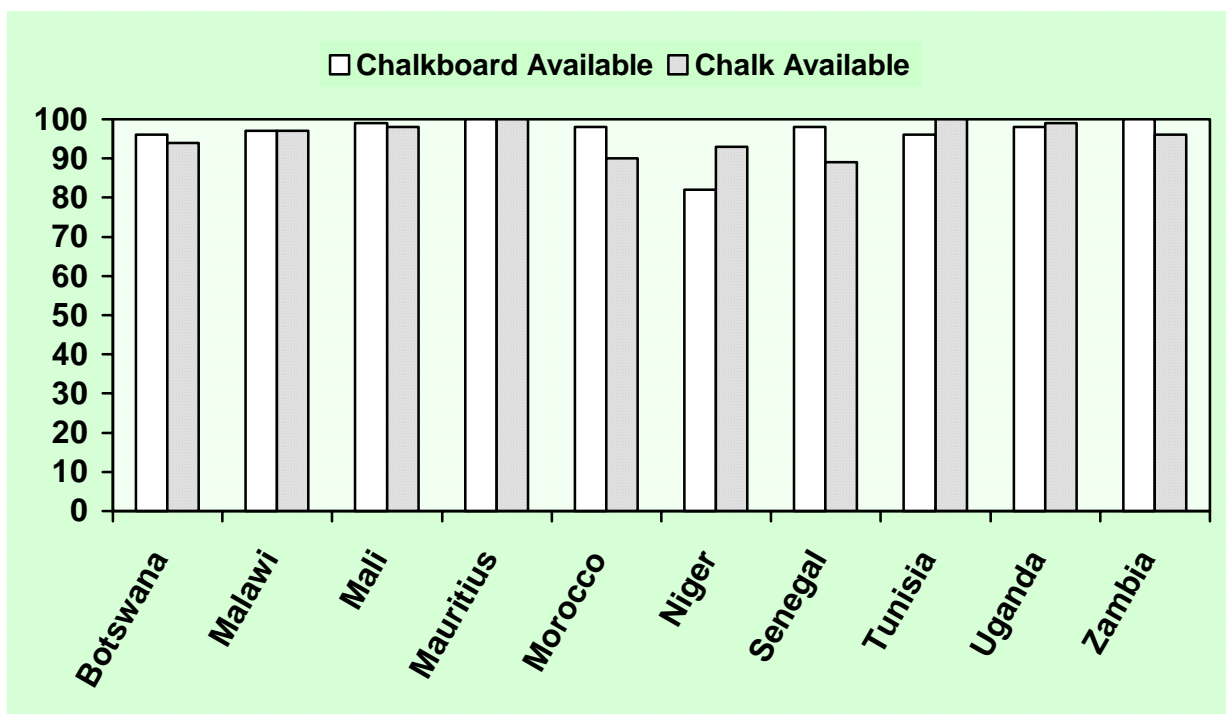
The availability of learning materials is a minimum condition for enhancing the quality of the teaching and learning process. The **Learning Materials** Index is created to give an indication of the availability of learning materials for use in the teaching and learning process [Table 4-9]. It includes the availability of chalk, teacher-made wall charts, learner-made wall charts, commercial-made wall charts, learning aids from the environment and exercise books for learners. A score of one is allocated for the availability of each of these items which produces a possible range from 0 to 6, where a high score indicates that a variety of learning materials from different sources are available. Teachers from all countries besides Madagascar indicated that there is adequate availability of such materials.

Teachers' guides represent a potentially important source of information and support for teachers. This is particularly the case for teachers working in schools that are located in isolated rural areas who will not have as ready access to support, supervision and teaching materials as their urban counterparts. The **Teachers' Guide Availability** Index focuses on the availability of teachers' guides in the core Grade 4 subject areas of Numeracy, Literacy [English/French and mother tongue] and Life Skills. A score of one is allocated for availability in each of the curriculum areas identified above, giving a possible range from 0 to 4. For this indicator, a low score is indicative of a lack of teachers' guides while a high score is indicative of high levels of availability teacher s' guides [Table 4-9]. Only teachers in Tunisia noted that they had adequate availability of teachers' guides. This observation is pertinent for the analysis of the influence of teachers' guides on learner performance between the participating MLA countries.



The class "chalkboard" has been identified as a critical resource for sustaining adequate teaching and learning interactions. The provision of all physical equipment to secure levels of high quality learning cannot always be achieved in significant numbers of schools in developing countries. For this reason education researchers have attempted to identify those critically important supplies that must be secured to ensure teaching and learning of acceptable quality. Questions from the Teacher Questionnaire that refer to the

FIGURE 4-4: CHALKBOARD AND CHALK SUPPLY



**availability of chalkboards** and **chalk** have been extracted from the questionnaire [Figure 4-4]. High percentages of teachers reported the presence of chalkboards [97%] and higher availability levels in all participating countries, with the exception of Niger which reported 81% availability. Availability of chalk was also relatively high with a percentage range of 88% or better.

## TEACHERS' WORK ENVIRONMENT AND ACTIVITIES

**TABLE 4-10: AVAILABILITY OF TEACHER RESOURCES INDEX AND TEACHER ACTIVITY AFTER SCHOOL INDEX**

	Availability of Resources Index		Teacher Activity after School Index	
	Mean	SD	Mean	SD
Botswana	1.7	1.2	5.0	.9
Madagascar	1.4	0.9	2.9	1.1
Malawi	1.0	.9	4.3	1.4
Mali	2.7	1.9	3.4	1.2
Mauritius	1.7	1.1	2.9	1.1
Morocco	1.2	0.4	4.6	1.7
Niger	0.6	0.5	2.6	1.8
Senegal	0.5	1.0	4.5	1.3
Tunisia	1.2	0.4	3.3	1.0
Uganda	1.8	1.1	4.3	1.5
Zambia	1.6	1.0	3.7	1.5

Ready access to a range of resources and services enables teachers to enrich their classroom teaching through exposure to professional development courses at teacher in-service training institutions and through utilising library and dedicated teacher resource centre facilities to enrich their classroom teaching. The Availability of Teacher Resources Index is developed in order to provide an indication of the extent to which teachers have access to such opportunities [Table 4-10]. With a possible range from 0 to 4, a high score indicates that a variety of teacher-oriented resources from different sources are available. The country means range between 0.5 for Senegal to 2.7 for Mali. These

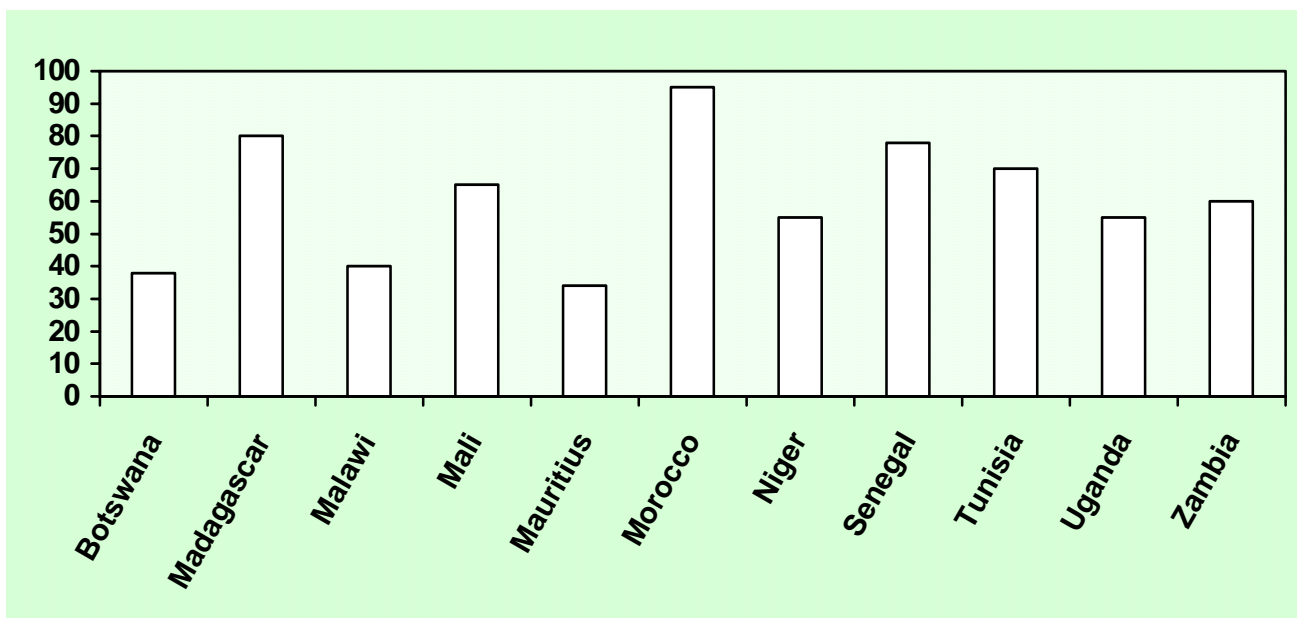
national results clearly show the marked differences between the countries surveyed. Even though the in-depth within-country analyses of these indices have yet to be released, it is clear that greater emphasis should be given to the improvement of access to teacher resources so as to empower teachers to positively influence the teaching-learning environments of children.

**TABLE 4-11: PERCENTAGE OF TEACHERS ENGAGING IN ACTIVITIES AFTER SCHOOL HOURS**

Type of School Activities After School Hours						
Country	Administration [%]	Preparation for lessons	Correcting/ Marking [%]	Extra-Curricular Activities [%]	Remedial Teaching [%]	Meetings [%]
Botswana	45.2	100.0	98.1	92.8	86.3	91.3
Madagascar	32.4	87.5	82.4	25.3	13.1	45.5
Malawi	33.1	96.3	77.5	80.7	68.3	82.6
Mali	45.2	100.0	98.2	60.5	45.7	69.6
Mauritius	1.8	99.2	91.3	44.1	29.7	31.3
Morocco	36.3	99.4	98.8	68.4	63.2	6.9
Niger	21.5	60.8	70.9	27.8	36.7	44.3
Senegal*	14.5	-	8.8	24.6	23.0	29.5
Tunisia	17.9	100	95.5	30.0	50.0	75.9
Uganda	58.0	98.9	89.9	71.4	59.8	72.2
Zambia	41.7	100.0	69.8	67.7	61.9	76.3

The extent to which teachers engage in school related activities after school hours is a strong indication of teacher commitment to their learners, schools and the profession. The **Teacher Activity after School Index** is constructed through reference to teacher involvement in administration, lesson preparation, marking learner exercises; extra-curricular activities, remedial teaching, and school related meetings after hours [Table 4-10]. This structure produces a possible range from 0 to 6 with a high

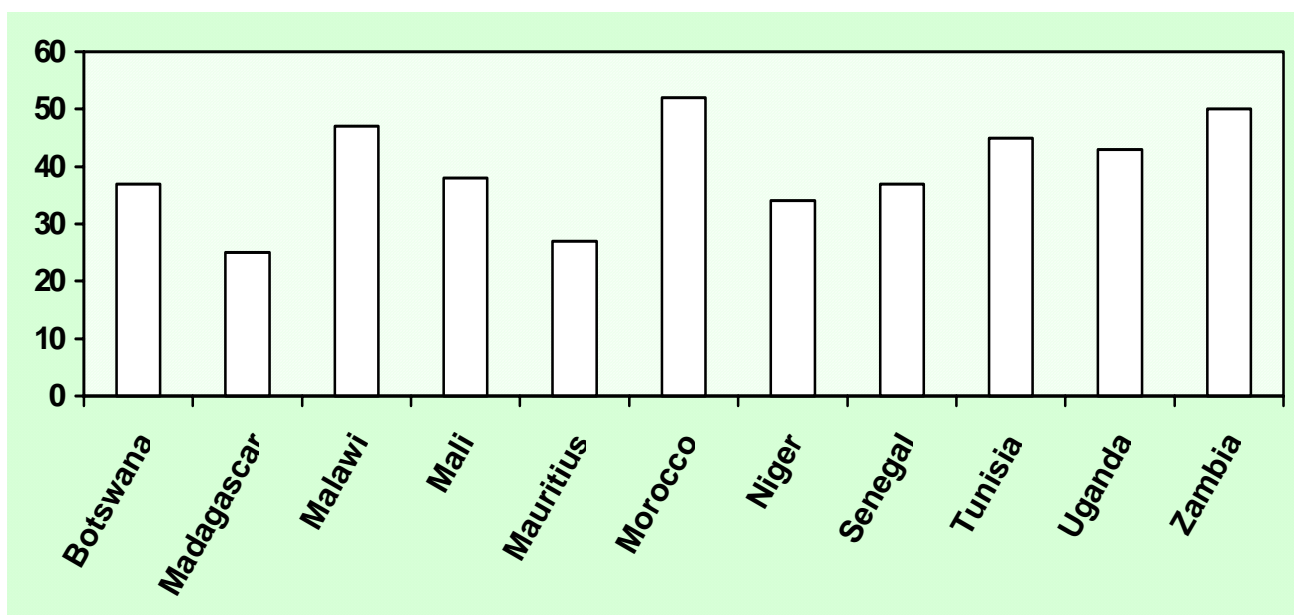
**FIGURE 4-5: PERCENTAGE OF SCHOOLS WHERE TEACHER ABSENTEEISM OCCURS HARDLY OR NOT AT ALL**



score indicating greater commitment. Niger has the lowest score and Botswana has the highest one on this index.

The most common after-school activities of teachers are preparation for teaching lessons and marking and correcting learners' work [Table 4-11]. The allocation of time by teachers during the day to activities other than teaching is of strategic importance.

**FIGURE 4-6: PERCENTAGE OF TEACHERS WHOSE WORK IS AFFECTED BY TRAVELLING**



## Teacher absenteeism

Teacher absenteeism can represent a major threat to the continuity of learning of learners especially where this occurs on a relatively frequent basis. High levels of **teacher absenteeism** from school can also add significantly to the levels of demand on those teachers who are present at school, as they are frequently called upon to take up extra workload. In order to develop an indication of teacher absenteeism levels, the percentage of schools where absenteeism levels are rated “hardly” “any” or “not at all” by the school head is calculated [Figure 4-5]. Higher percentages for Morocco, Madagascar, Senegal and Tunisia indicate that teacher absenteeism is not a major problem. Teacher absenteeism is more of a problem in Mauritius and Botswana where only 33.3% and 37.5% of principals respectively could say that teacher absenteeism occur “hardly” or “not at all”. As a proxy for measuring quality of education for all, this information is of great interest to policy makers and the teaching community as a whole.

For teachers whose homes are far from the school where they work, **the time spent travelling to** and from school can represent a severe drain on the time that they can make available for teaching-related activities after school hours. For this reason, it was considered important to establish to what extent travel time is a factor that affects teachers.

As can be seen, the necessity to spend time travelling affects more than one third of teachers in nine out of the eleven participating countries [Figure 4-5]. There are also marked differences between countries, thus demonstrating how complex African education really is. Any regional plan to provide quality education for all will need to take into account such types of analysis on a between- and a within- country basis. Further in-depth analysis of these data sets will provide greater information.

**TABLE 4-12: MEAN AGE OF SCHOOL HEADS**

	Mean	SD	Minimum	Maximum
Botswana	50.05	7.06	36	64
Madagascar	45.45	8.70	23	87
Malawi	40.65	8.01	21	62
Mali	47.26	6.87	29	70
Mauritius	53.20	3.52	47	59
Morocco	53.21	5.43	35	64
Niger	41.51	5.86	30	54
Senegal	42.92	8.78	22	67
Tunisia	48.86	6.19	32	60
Uganda	41.66	7.50	25	64
Zambia	44.76	6.53	25	56

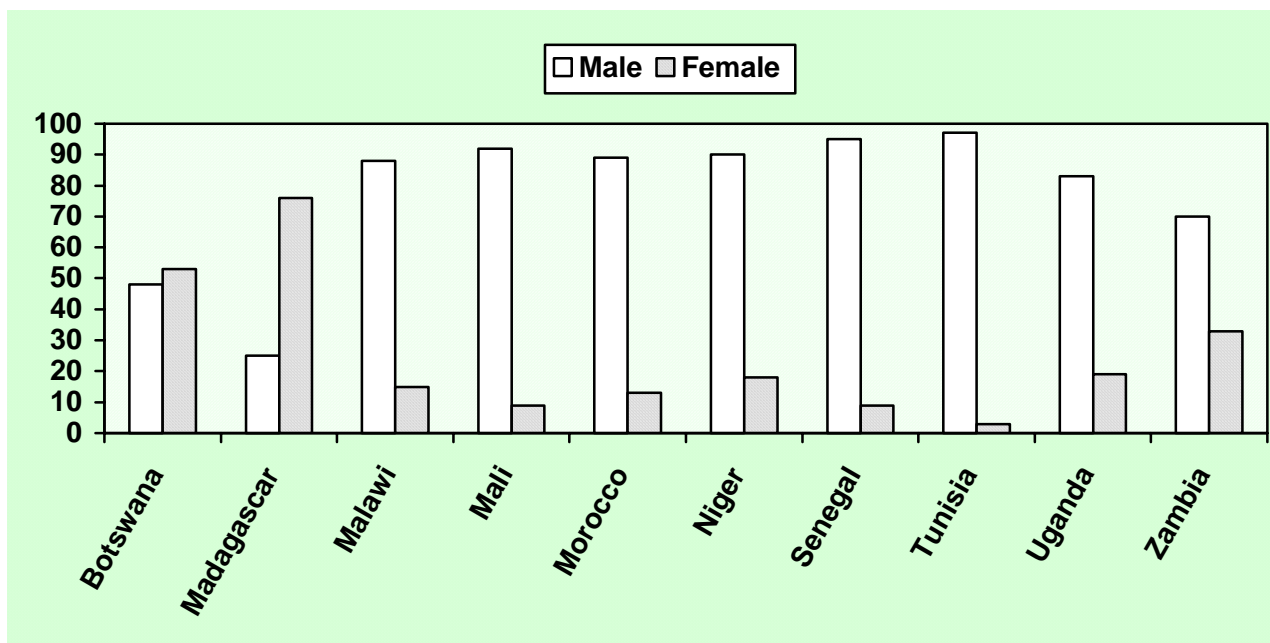
## SCHOOL HEAD BACKGROUND

The effectiveness with which the school management team fulfils every day functions, provides overall leadership, and motivates the entire school community depends to a considerable extent on the background characteristics of the school head. This section discussed the school head age, gender, qualification and experience.



The age of the school head is important because this characteristic provides a general measure of the amount of experience that school heads have in education [that is assuming that she/he has not spent some time in another profession]. If a group of school head has a high mean age this can be interpreted positively to imply that she/he has accumulated much experience. However, an ageing school head group can also imply that they will need more in-service training especially if new approaches to pedagogy or management have been introduced through government policy. The mean ages of school heads in the participating countries ranged from 40.65 in Malawi to as high as 53.21

**FIGURE 4-7: GENDER OF SCHOOL HEADS**



in Morocco. In Mauritius, Morocco, and Botswana the average age of school heads exceed 50 years. It is noteworthy that in Madagascar and Mali, some school heads are seventy years and older. Finally, it should be noted that in some countries school heads assume that position of responsibility at a very young age [21, 22 and 23 years in Malawi, Senegal and Madagascar respectively]. This, however, must be viewed in the context of the school location, size and type.

### Gender of School Heads

The results from the earlier gender breakdown of teachers have shown marked differences from country to country.

The **gender of the school head** is of interest, especially in cases where the majority of school heads are of the opposite gender to that of teachers. In every participating country, the percentage of female school heads is far lower than the percentage of female teachers [Figure 4-7].

**TABLE 4-13: SCHOOL HEAD QUALIFICATIONS**

Educational level	Primary	Secondary	University/ Post Graduate [%]	Other [%]
Botswana	44.4	49.2	3.2	3.2
Madagascar	13.5	79.8	6.7	0.0
Malawi	3.1	96.9	0.0	0.0
Mali	6.2	81.6	9.2	3.1
Mauritius	1.8	91.2	7.0	0.0
Morocco	5.1	78.5	16.4	0.0
Niger	17.1	79.3	3.7	0.0
Senegal	4.9	67.5	26.0	1.6
Tunisia	0.0	80.7	12.3	6.1
Uganda	8.8	49.8	14.7	26.7
Zambia	5.8	79.7	10.1	4.3



In only two countries, Madagascar and Botswana, there are more female school heads than male school heads. This observation clearly shows the gender bias in school management and leadership in African educational systems. It may indirectly serve as an important focus point to promote not only girl's and women's education, but also the status of girls and women in African setting into the 21st century. Still much remains to be done in this regard.

## Educational Qualification

The educational qualification of school heads can serve as an important indicator of the quality of the school human resource and leadership. It is assumed that school heads with higher levels of qualification should be better equipped with higher-order type of management skills. This would include the capacity to interpret and implement national education policy, as well as the capacity to develop and sustain school level governance and administrative systems and procedures. What is immediately apparent from Table 4-13 is that in three countries, namely Botswana [44.4%], Niger [17.1%] and Madagascar [13.8%] the proportions of school heads with only a Primary School level qualification is high. The proportion of countries where school heads have a Secondary qualification ranges as high as 96.9% in Malawi and 91.2% in Mauritius. However, it is also important to look at the overall proportions of school heads who have either a University or post

<b>TABLE 4-14: SCHOOL HEAD EXPERIENCE</b>								
	<b>No of years as head Current School</b>				<b>No of years as head Other school</b>			
	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
Botswana	5.52	4.33	1	19	9.24	5.99	1	25
Madagascar	7.11	7.14	1	41	4.99	6.88	0	33
Malawi	3.51	2.89	1	18	4.72	6.48	0	29
Mali	6.85	2.88	2	19	4.74	2.36	0	13
Mauritius	2.18	1.73	1	10	2.55	2.13	0	8
Morocco	5.01	6.03	1	52	5.75	7.46	0	52
Niger	14.46	8.88	1	32	-	-	-	-
Senegal	4.90	4.92	1	24	4.58	5.70	0	24
Tunisia	5.23	4.79	1	22	8.19	7.63	0	33
Uganda	4.24	3.42	1	25	9.99	7.37	1	35
Zambia	4.27	3.30	1	18	5.18	5.28	0	21

graduate level qualification. In this regard Senegal [26.0%] has the highest number of school heads. These great variations in educational qualification of school heads clearly mirror the marked between-country differences in their educational standard, leadership and managerial capacities.

## School head experience

The critical importance of the experience of the school head has already been referred to above. The information on how long school heads have been in their current school serves as an indicator of the stability of the leadership at the institutional level. Most school heads have a great deal of experience as evident from the total years of experience as school head in current and in other schools. For most

school heads, however, their experience was gained at other schools. The mean number of years experience in the current school, which is over 4 years for all school heads besides Malawi and Mauritius, suggest some stability in this profession.

## SCHOOL CHARACTERISTICS

The school teaching and learning environment in Africa varies considerably from schools which have a range of physical resources at their disposal to schools which are forced to make do with the barest minimum, for example, teaching outside in the sun with only a tree for a shelter. The physical environment of the school with reference to the extent of the land on which it is located, the shape and design of the school building and classrooms, and the availability of essential amenities such as water, electricity and toilet/sewerage facilities are extremely important.

**TABLE 4-15: SCHOOL FACILITIES**

	School Building Index		Lack of Amenities Index	
	Mean	SD	Mean	SD
Botswana	1.9	1.0	1.3	1.8
Madagascar	1.83	1.53	3.31	1.26
Malawi	0.9	1.0	2.6	1.3
Mali*	-	-	1.3	1.2
Mauritius	2.4	1.0	1.4	1.2
Morocco*	-	-	1.8	0.8
Senegal	0.3	0.7	1.4	1.0
Tunisia	1.5	0.9	2.1	1.1
Uganda	1.5	1.1	1.8	1.1
Zambia	1.7	1.3	1.1	1.5

\* Questions not included in questionnaires

These basic school characteristics will either enable or constrain the range of learning-related activities both in- and out- of the classroom that learners can engage in during- and after-school \* Questions not included in questionnaires hours. For this reason, the physical amenities available at the school are presented in terms of the extent to which they facilitate the teaching and learning process of learners.

Some schools will have a variety of rooms available for special purposes such as workshops, staff rooms and offices. A school building, which has a broader range of rooms available, represents a more supportive environment within which the school staff must work.

**TABLE 4-16: SCHOOL SHIFTS**

	Single [%]	Double [%]	Triple/Multiple [%]
Botswana	62.1	37.9	0.0
Madagascar	61.8	38.2	0.0
Malawi	85.3	6.2	7.8
Mauritius	98.2	1.8	0.0
Morocco	22.5	55.6	21.9
Niger	59.0	39.8	1.2
Senegal	84.6	14.1	1.3
Uganda	91.7	2.9	5.4
Zambia	18.3	32.4	49.3

The **school building index** therefore gives an indication of the type and range of physical facilities available in the schools. Scores can range from 0 to 6 where a higher score indicates a greater range of rooms available for teaching and administrative purposes. The index reveals that schools in Mauritius score highest on this index whereas schools in Senegal score lowest.

It is important for the broader physical environment of the school to meet the broader curriculum and recreational needs of the learners. Physical amenities such as the availability of a playground, sports equipment, and land for a school garden can broaden the scope of learner activities both in and outside of school hours. In order to establish

**TABLE 4-17: SCHOOL SIZE**

	Total School Enrolment	
	Mean	SD
Botswana	510.8	307.6
Madagascar	327.7	331.3
Malawi	808.0	674.4
Mali	435.0	237.8
Mauritius	500.8	350.5
Morocco	492.7	305.7
Niger	429.5	238.9
Senegal	500.97	402.2
Tunisia	358.5	188.9
Uganda	744.0	413.5
Zambia	801.4	620.3

the extent to which such facilities are not available, a **lack of amenities index** was constructed where scores can range from 0 to 6. Accordingly, the higher the score on this index the greater the need for supplying such amenities. Schools in Malawi and in Tunisia reveal the greatest need for the supply of basic amenities. Again the high between-country differences are on these indices should be emphasised.

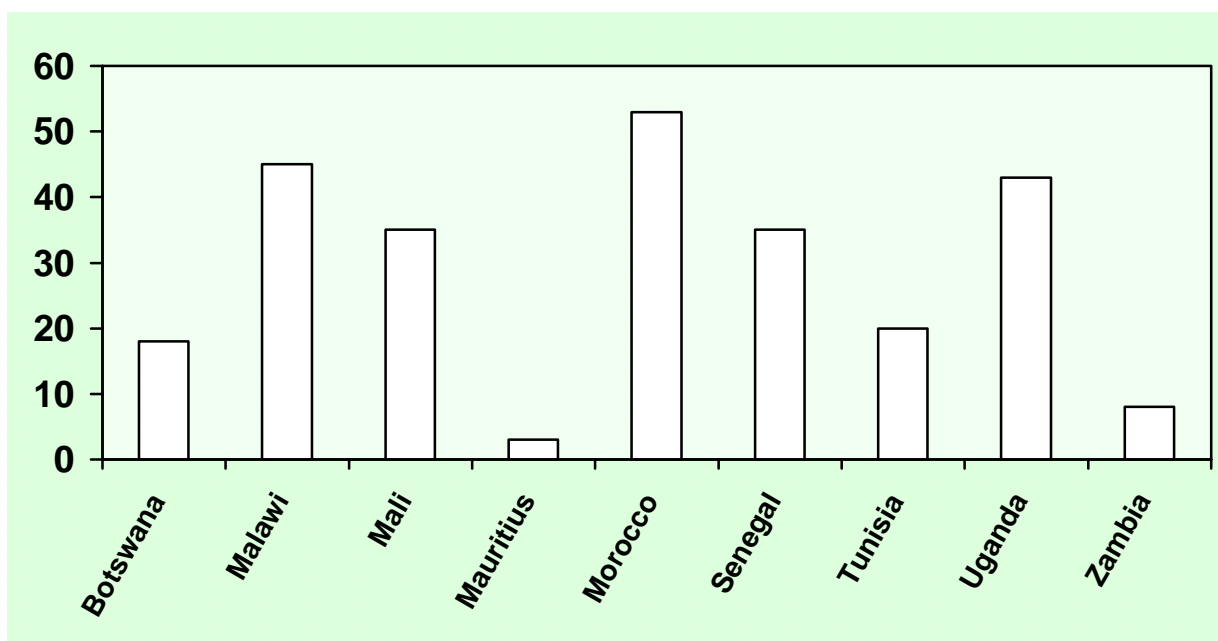
In some countries, where there is a lack of availability of physical resources in relation to school demand, the utilisation of existing school buildings and resources is maximised. This has been done by introducing strategies such as double and even triple

**school shifts**. These strategies put an enormous strain on the physical resources as well as on the learners and teachers themselves depending upon the shift they are allocated to. Resorting to this shift system also tends to limit the possibilities for in-school and out-of-school extra-curricular activities. What is startling is the high number of schools operating on triple shifts in Zambia [49.3%] and Morocco [21.9%] while others have little need for school shifts [Mauritius and Uganda].

### School Size

The size of a school can influence the range and intensity of management demands on the school head. In the participating countries, there was a considerable difference in **school size ranging** from a mean of 358 in Tunisia to 808 for Malawi [Table 4-17]. These observed variations among African countries are quite startling and suggestive of the importance of school size as a factor influencing the capability of schools to deliver quality of learning to all learners.

**FIGURE 4-8: PERCENTAGE OF SCHOOLS WHERE SCHOOL SAFETY IS RATED AS POOR**



## School Safety

Safety aspects are of crucial importance to school managers who wish to generate maximum use of the school facility. If the safety of learners and teachers cannot be guaranteed, especially after normal school hours, then the levels of school and community usage of the facility will remain unacceptably low. Levels of **school safety** are represented as a percentage of all school heads who indicated that school safety was poor [Figure 4-8]. It is clear from the data that school safety is of concern to significant numbers of school heads in several of the participating countries. In Morocco, Malawi, Mali and Senegal significant percentages of school heads rated the safety of their school environment as poor. This information may serve as an indirect measure of the seriousness of countries in promoting quality of education for all.

## CONCLUSION

The analysis of the teaching and learning environments at home and in school of the countries surveyed in 1999 in Africa provides a unique information base for educational policy-making in the years to come. It has also served to identify and to highlight a number of important contextual factors and variables that can directly and indirectly affect the performance of learners. However, it is important to note that the analysis provided in this chapter serves as a preliminary exploration of the vast amount of data that is being collected as part of the MLA exercise. More in-depth analysis will be conducted and presented in further regional, sub-regional and national reports. There is considerable scope to further develop the analysis for between-country differences and within-country differences in order to expose the increasing importance of generating more conducive environments at home, in the community, at school and in the classroom. Out of such analyses further recommendations for providing an education of quality for all in Africa will flow. The importance of these teaching and learning environments on learner performance will be examined in Chapter 5 using path analysis with LISREL.

