

EDUCATION IN LIBERIA: BASIC DIAGNOSTIC USING THE 2007 CWIQ SURVEY

Little has been written on the education system in Liberia since the start of the conflict in large part because of lack of good data. This paper provides a diagnostic of Liberia's education system as seen from the point of view of households using the new nationally representative Core Welfare Questionnaire Indicator survey implemented in 2007. The analysis covers school enrollment rates as well as the reasons for not going to school, and the degree of satisfaction of households with the services received, in each case looking at various age groups and boys and girls separately, as well as at different types of facilities providing education services. Data are also presented on household private spending for education, as well as on distances to facilities. A benefit incidence analysis of public spending for education is conducted, and regression analysis is used to assess the determinants of school enrollment.

1. Introduction

As Liberia emerges from civil war, a renewed emphasis is being placed by the country's government as well as by donors on improving the quality of education and health services provided to the population, and on ensuring that more children go to school, and more persons in need of care receive it. Improving the delivery of basic services is one of four key pillars of the Interim Poverty Reduction Strategy (Republic of Liberia, 2006) that was adopted in 2006. In order to inform the preparation of Liberia's full Poverty Reduction Strategy, the objective of this paper is to provide a basic diagnostic of education services as seen from the point of view of users.

Very little has been written on the education system in Liberia since the start of the conflict, in large part because of lack of good data. A few recent reports provide a partial diagnostic of the education sector and suggestions for priority actions are available in these reports (Ministry of Education, 2007; Ministry of Education and UNICEF, 2004; and Heninger et al., 2006; see also UNDP, 2006, and Humphreys and Richards, 2005, for a broader discussion related to the Millennium Development Goals in Liberia). However, these reports are not based on recent household survey data that provide detailed more descriptive information on whom benefits from education services, what households think about the quality of the services that they receive, or why they do not use those services, whether due to their cost or the distance to facilities for example.

The objective of this paper is to provide a basic diagnostic of the education system in Liberia as seen from the point of view of households. The diagnostic is based on the newly available nationally representative CWIQ (Core Welfare Questionnaire Indicator) survey that was implemented in 2007 by the Liberia Institute of Statistics. The survey includes detailed data on school enrollment as well as the reasons for not going to school, and the degree of satisfaction of households with the services received. Data are also available on private spending for education, as well as on distances to facilities.

As in other Anglophone countries in West Africa, Liberia's education system consists of four main levels: primary schools (6 years of study), junior secondary schools (3 years), senior secondary schools (3 years), and tertiary education. Enrollment rates in pre-schools are very low, so that pre-schools are not discussed here. Vocational and technical education and training is available at the secondary and in some cases tertiary levels, but we do not have good data on that in the 2007 CWIQ survey, hence we do not discuss this segment of the education sector either. In this paper, we focus therefore for the most part on primary and secondary education indicators, given that the share of youths pursuing post-secondary education is very low, but we do discuss

some aspects of tertiary education as well, especially in terms of satisfaction rates with the services provided as well as in terms of the benefit incidence of public spending for education.

The paper is structured as follows. Section 2 provides descriptive statistics on school enrollment rates (gross and net), the reasons for not enrolling children (either for children who were never enrolled or for children who were once enrolled but have dropped out of school), and satisfaction with schools services. Section 3 is devoted to a benefit incidence analysis of public spending for education. Section 4 discusses the determinants of school enrollment. A brief conclusion follows.

2. School enrollment, reason for not enrolling and satisfaction with schools

2.1. School enrollment rates and types of schools attended

Table 1 provides measures of net and gross enrollment rates as obtained from the 2007 CWIQ survey. At the national level, in primary schools the net enrollment rate is 37.3 percent, while the gross enrollment rate is a much higher 86.3 percent. In secondary schools, the corresponding figures are 15.2 percent and 51.3 percent. Enrollment rates are lower in rural areas than in urban areas, and they are also lower among poorer households identified here according to five quintiles of consumption per equivalent adult (for an analysis of poverty in Liberia based on the 2007 CWIQ survey, see Backiny-Yetna et al., 2008). The first quintile “Q1” represents thus the poorest 20 percent of the population, and the top quintile “Q5” the richest 20 percent. Enrollment rates also remain slightly lower for girls than for boys, but recent efforts to improve girls’ education have helped in reducing the gap so that differences now are relatively small, at least at the primary level (differences remain substantially larger at the secondary level).

Table 1: Net and Gross Enrollment Rates in primary and Secondary Schools, 2007

	Residence Area		Quintile					Total
	Urban	Rural	Q1	Q2	Q3	Q4	Q5	
Primary enrollment rates								
Net enrollment (6-11)								
Total	47.5	32.8	28.8	32.1	36.1	41.8	49.5	37.3
Male	48.0	33.2	32.8	33.9	33.3	40.0	50.9	37.5
Female	47.1	32.3	23.8	30.0	39.1	44.0	48.3	37.1
Gross enrollment								
Total	93.1	83.3	77.8	86.5	87.5	86.6	94.3	86.3
Male	88.7	87.7	86.9	93.8	80.9	81.4	99.3	88.0
Female	97.4	78.2	66.7	78.0	94.4	92.7	90.1	84.5
Secondary enrollment rates								
Net enrollment (12-17)								
Total	25.4	10.1	11.4	12.2	13.0	19.8	21.5	15.2
Male	27.7	11.2	12.6	13.3	15.4	19.1	22.8	16.0
Female	23.4	8.7	9.6	10.7	10.8	20.4	20.3	14.2
Gross enrollment								
Total	74.4	39.7	40.1	43.0	42.8	65.3	71.8	51.3
Male	86.8	44.9	43.4	51.0	54.5	72.5	75.6	57.2
Female	63.7	33.1	35.1	32.6	31.7	59.2	68.0	44.7

Source: Authors' estimates based on 2007 CWIQ survey.

For a country that only recently emerged from conflict, the above enrollment rates, especially in gross terms, are not as low as one might have feared. As noted by the diagnostic prepared by the Ministry of Education in its program document for the Fast Track Initiative (Ministry of Education, 2007: 7-10), the lack of proper infrastructure and teachers, the lack of security in the country and the high cost for families of education linked to user fees led to a sharp decline in enrollment in the early part of this decade, especially for girls (National Policy of Girls Education, MOE, Government of Liberia, 2005). To stem this decline, an Education Law was adopted in 2001 to make primary education free and compulsory, but resources had been lacking to implement this policy.

Renewed efforts by the administration of President Ellen Johnson Sirleaf since 2006 to promote school enrollment as well as a return to peace have led according to administrative data to a dramatic increase in public primary school enrolment of 24 percent for girls and 18 percent for boys between 2006 and 2007. As a result, many children and youth with limited previous exposure to formal education have now returned to school, which also explains the large differences between net and gross enrollment rates observed in table 1. A school census implemented in 2006 suggested that only 15 percent of students in the first year of primary school were of the right age (six to seven years of age), and half of the students were between 11 and 20 years of age.

Table2: Type of school attended, 2007

	Residence Area		Quintile					Total
	Urban	Rural	Q1	Q2	Q3	Q4	Q5	
Primary								
Government	25.8	71.1	73.7	66.3	56.4	47.3	40.4	57.0
Religious Organization	8.0	1.5	2.0	2.2	1.5	6.7	5.6	3.6
Private	63.0	18.0	19.4	22.0	30.7	40.3	49.0	32.1
Community	2.9	8.0	3.0	8.9	10.4	4.9	4.4	6.4
Other	0.2	1.3	2.0	0.5	1.0	0.8	0.5	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Secondary								
Government	28.3	65.0	66.1	67.7	47.5	31.6	33.7	47.3
Religious Organization	6.0	2.7	2.5	0.8	2.4	8.6	5.4	4.3
Private	65.0	28.4	30.2	30.2	45.0	57.3	59.3	46.1
Community	0.5	3.4	0.8	0.9	4.9	2.0	1.5	2.0
Other	0.1	0.5	0.4	0.4	0.1	0.5	0.2	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Post secondary								
Government	52.3	19.7	63.6	23.5	53.1	34.5	53.4	46.1
Religious Organization	3.9	16.5	0.0	0.0	8.6	6.2	7.0	6.3
Private	42.1	63.5	19.6	76.5	38.2	59.0	38.1	46.2
Community	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	1.7	0.3	16.8	0.0	0.0	0.3	1.4	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Boys – all levels								
Government	33.7	72.0	74.2	69.0	59.2	46.2	43.4	58.7
Religious Organization	7.0	1.8	1.8	1.6	1.5	7.3	6.2	3.6
Private	57.6	19.0	20.4	22.6	31.0	42.1	47.2	32.4
Community	1.6	6.3	2.6	6.4	7.8	3.9	2.7	4.7
Other	0.1	0.9	1.0	0.4	0.6	0.6	0.5	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Girls – all levels								
Government	23.8	65.9	68.1	62.1	49.0	38.6	35.9	48.9
Religious Organization	7.1	2.1	2.6	2.4	2.4	7.0	5.2	4.1
Private	66.2	22.7	24.3	26.8	37.5	49.8	54.6	40.3
Community	2.3	7.9	2.2	8.0	10.0	3.9	3.9	5.6
Other	0.5	1.4	2.9	0.6	1.1	0.7	0.4	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All respondents								
Government	28.8	69.3	71.8	66.2	54.3	42.4	39.6	54.2
Religious Organization	7.1	1.9	2.1	1.9	1.9	7.2	5.7	3.8
Private	61.9	20.6	21.9	24.3	34.1	45.9	51.0	36.0
Community	1.9	7.0	2.4	7.1	8.9	3.9	3.3	5.1
Other	0.3	1.1	1.8	0.5	0.8	0.7	0.5	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' estimates based on 2007 CWIQ survey.

Due in part to the inability of the state to provide services during the civil war, non-governmental schools play a very important role in Liberia's education system, accounting for about 40 percent of the enrollment of primary school students and more than half the enrollment of secondary and tertiary levels students. This is shown in table 2, which provides the share of students by level attending different types of schools. Still, government schools remain the primary service providers for rural students, as well as for the poor. For example, more than three fourths of students belonging to the first quintile of household consumption go to government primary schools, while the proportion is only about 40 percent in the top quintile. Among non-governmental primary schools, private schools are chosen mostly by the better off, while community schools tend to serve more the poor. At the secondary and post-secondary level, the role of private schools is even more pronounced, with these schools serving as many children as government schools. There is also an interesting difference between boys and girls, with boys more likely to go to government schools than girls, while the reverse is true for private schools. Overall, only slightly more than half (54.2 percent) of all students go to government schools, with private schools serving more than a third (36.0 percent) of the students, and the rest using community or religious schools for the most part.

2.2. *Reasons for not going to school*

Despite a rapid increase in enrollment since 2006, many children are still not enrolled in school today. Tables 3 and 4 provide the reasons invoked by parents for not sending their children to school. In table 3, we provide data on the children that have never been enrolled in school. This is done by age group. Despite the gratuity of public schools, costs seem to remain the main factors preventing many children from attending schools. The second main reason invoked is the distance separating the children from the nearest school. As expected, the issue of cost is more serious for children in the bottom quintiles, while the issue of distance is similar in both cases (note however that the data is provided in percentage terms of students who never started schooling; clearly that percentage itself is higher among the poorest segments of the population). There are some differences between boys and girls in reasons for never going to school (for example, among the very poor, cost is more an issue for boys than for girls, while age is more of an issue for girls than boys). Yet overall the reasons for never enrolling are similar between the two sexes.

In tables 4a to 4c, we provide data on children who are not any more going to school, but who had been enrolled in the past. This is done by age group as well as by gender. Again, despite the gratuity of public schools, costs is the main reason for not pursuing one's education, apart from the fact that many children are waiting for taking an examination in order to be enrolled. The large share of the students who are not enrolled today due to the fact that they still must take an examination seems to be a situation that is peculiar to Liberia, and may have to do with the large influx of new students of many different ages who are returning to school, after the end of the conflict. Apart from these two reasons, the distance to schools is also one factor preventing children to continue their education, even though they did go to school at some point.

For the various samples considered in tables 4 to 6, the issue of cost is actually more serious in urban than in rural areas, perhaps because a larger share of students tend to go to private schools in urban areas. Interestingly, the issue of cost is cited more for often for urban boys than for urban girls, while in rural areas, the differences are not large. This may be related to the fact that boys may be seen as more likely to be able to contribute to the income of the household in urban areas than girls. By quintiles, the patterns do not suggest in most cases large and systematic differences in the reasons for stopping to go to school. There is however a clear indication in many (although not all) cases that for the bottom quintile, the issue of the distance from the schools matters more than for the other quintiles.

Table 3: Reason for never starting going to school, 2007

	Residence Area		Quintile					Total
	Urban	Rural	Q1	Q2	Q3	Q4	Q5	
Boys aged 6-11								
Too young	8.2	19.7	16.4	15.4	21.1	20.1	19.3	17.9
Too far away	7.5	28.1	31.0	19.9	24.6	26.0	18.2	24.9
Too expensive	72.0	56.5	68.0	70.3	46.1	48.7	45.7	58.8
Working (home or job)	6.5	1.5	3.2	2.1	4.7	0.0	0.1	2.2
Useless/uninteresting	0.0	1.2	0.8	0.6	0.0	3.1	0.4	1.0
Illness	2.9	3.6	2.5	4.2	4.2	1.3	7.1	3.5
Orphaned	0.0	0.8	0.0	2.8	0.0	0.0	0.0	0.6
Other	19.6	15.1	7.3	8.0	21.2	28.3	26.7	15.8
Girls aged 6-11								
Too young	10.0	17.9	25.1	7.3	7.3	18.1	25.2	16.2
Too far away	5.7	31.2	17.7	29.1	30.1	13.3	40.7	25.7
Too expensive	78.2	54.7	56.6	64.6	66.4	65.2	43.3	59.8
Working (home or job)	8.7	2.2	1.7	4.2	7.4	3.7	1.3	3.6
Useless/uninteresting	1.5	0.6	0.1	0.0	1.0	2.6	2.0	0.8
Illness	4.1	1.8	1.9	0.4	4.8	0.4	5.2	2.3
Orphaned	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	10.4	18.3	16.4	15.0	14.0	9.9	29.2	16.6
Children aged 6-11								
Too young	9.2	18.9	20.6	11.3	13.9	19.4	22.4	17.1
Too far away	6.5	29.5	24.7	24.6	27.5	21.4	30.0	25.3
Too expensive	75.5	55.6	62.6	67.4	56.7	54.7	44.5	59.3
Working (home or job)	7.7	1.8	2.5	3.2	6.1	1.3	0.7	2.9
Useless/uninteresting	0.9	0.9	0.4	0.3	0.5	2.9	1.2	0.9
Illness	3.6	2.8	2.2	2.2	4.5	1.0	6.1	2.9
Orphaned	0.0	0.4	0.0	1.3	0.0	0.0	0.0	0.3
Other	14.4	16.6	11.6	11.6	17.4	21.6	28.0	16.2

Source: Authors' estimates based on 2007 CWIQ survey.

Table 4a: Reason for not enrolling for previously enrolled children by age, 2007

	Residence Area		Quintile					Total
	Urban	Rural	Q1	Q2	Q3	Q4	Q5	
Children aged 6-11								
Completed school	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Too far away	0.3	5.6	8.7	0.0	0.9	5.7	3.2	3.7
Lack of money/too expensive	23.6	15.3	17.5	17.3	16.7	14.7	26.0	18.3
Working (home or job)	0.1	0.2	0.0	0.0	0.2	0.0	0.7	0.2
Illness	1.0	1.9	2.1	1.2	1.0	2.2	1.3	1.6
Pregnancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Got married	0.0	0.2	0.0	0.0	0.0	0.8	0.0	0.2
Useless/uninteresting	0.3	1.4	1.6	0.2	0.4	2.7	0.0	1.0
Failed exam	0.1	0.5	0.0	0.3	0.0	1.2	0.3	0.3
Awaiting admission	75.0	74.8	69.8	80.9	79.9	76.7	66.2	74.8
Dismissed	0.1	1.3	1.1	0.0	0.0	2.1	1.2	0.9
Orphaned	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	3.5	10.6	3.9	10.1	17.1	2.1	5.4	8.0
Children aged 12-17								
Completed school	3.3	0.2	1.7	0.0	0.0	5.1	0.1	1.3
Too far away	0.3	2.8	0.2	3.4	3.2	1.9	0.0	1.9
Lack of money/too expensive	24.2	17.4	20.7	20.9	22.1	16.8	17.9	19.9
Working (home or job)	3.1	1.9	1.2	0.0	1.9	6.5	2.4	2.3
Illness	2.4	1.2	0.6	3.2	0.5	3.8	0.0	1.6
Pregnancy	6.5	5.1	5.1	4.9	3.2	8.3	7.5	5.6
Got married	0.4	0.5	0.6	0.1	0.6	0.0	1.1	0.4
Useless/uninteresting	2.3	4.8	2.7	6.0	4.2	2.9	3.5	3.9
Failed exam	0.2	0.5	0.6	0.0	0.0	0.7	0.9	0.4
Awaiting admission	59.5	66.2	65.4	59.9	67.7	58.4	67.4	63.8
Dismissed	0.4	1.5	1.2	2.2	0.0	1.7	0.6	1.1
Orphaned	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	7.6	9.6	6.1	12.8	14.5	3.6	5.0	8.9
All respondents 6-17								
Completed school	0.9	0.1	0.9	0.0	0.0	1.1	0.0	0.4
Too far away	0.2	4.1	5.1	0.8	1.7	4.2	1.9	2.7
Lack of money/too expensive	23.9	14.7	17.2	17.4	18.3	14.7	22.5	18.0
Working (home or job)	1.2	0.3	0.6	0.0	0.3	1.0	1.3	0.6
Illness	1.6	1.7	1.6	2.5	0.8	2.9	0.8	1.7
Pregnancy	2.0	1.5	1.7	1.8	1.2	1.3	2.5	1.7
Got married	0.0	0.2	0.0	0.0	0.0	0.5	0.3	0.2
Useless/uninteresting	1.1	2.7	1.1	3.5	1.9	2.8	1.4	2.2
Failed exam	0.2	0.5	0.3	0.1	0.0	1.1	0.6	0.4
Awaiting admission	69.7	73.4	70.1	71.6	76.1	73.9	67.4	72.0
Dismissed	0.3	1.4	1.3	1.3	0.0	1.7	1.0	1.0
Orphaned	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	4.9	10.4	4.8	12.4	15.6	2.3	5.5	8.5

Source: Authors' estimates based on 2007 CWIQ survey.

Table 4b: Reason for not enrolling for previously enrolled boys, 2007

	Residence Area		Quintile					Total
	Urban	Rural	Q1	Q2	Q3	Q4	Q5	
Boys aged 6-11								
Completed school	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Too far away	0.0	6.5	11.8	0.0	1.5	1.7	6.2	4.1
Lack of money/too expensive	25.8	10.3	16.3	19.4	16.1	13.5	12.9	15.9
Working (home or job)	0.3	0.5	0.0	0.0	0.4	0.0	2.3	0.4
Illness	2.0	1.4	0.0	2.3	0.5	4.5	1.4	1.6
Pregnancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Got married	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Useless/uninteresting	0.0	2.5	1.7	0.0	0.0	6.2	0.0	1.6
Failed exam	0.3	0.0	0.0	0.5	0.0	0.0	0.0	0.1
Awaiting admission	72.1	78.5	72.4	77.8	80.8	75.2	72.7	76.2
Dismissed	0.3	0.2	0.5	0.0	0.0	0.7	0.0	0.2
Orphaned	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	4.0	13.0	3.2	5.2	21.3	2.6	15.9	9.8
Boys aged 12-17								
Completed school	1.5	0.0	2.1	0.0	0.0	0.0	0.0	0.5
Too far away	0.2	2.9	1.1	2.9	4.9	0.7	0.0	2.1
Lack of money/too expensive	27.1	11.0	18.4	10.1	17.8	16.7	16.7	15.9
Working (home or job)	5.2	0.7	2.2	0.0	0.6	4.9	3.7	2.0
Illness	1.8	1.5	0.7	4.4	0.3	2.6	0.0	1.6
Pregnancy	0.0	0.3	0.0	0.8	0.0	0.0	0.0	0.2
Got married	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Useless/uninteresting	3.0	2.8	0.0	5.5	6.5	0.5	0.7	2.9
Failed exam	0.6	0.6	0.0	0.0	0.0	1.7	1.7	0.6
Awaiting admission	62.8	78.9	75.2	69.8	73.3	76.9	76.4	74.1
Dismissed	0.7	2.1	1.7	4.4	0.0	0.9	1.2	1.7
Orphaned	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	10.2	6.7	4.4	12.6	11.8	0.8	6.7	7.7
Boys-All respondents 6-17								
Completed school	0.7	0.0	1.0	0.0	0.0	0.0	0.0	0.2
Too far away	0.1	4.7	6.7	1.5	3.0	1.3	2.7	3.2
Lack of money/too expensive	26.4	10.7	17.3	14.6	16.9	14.9	15.1	15.9
Working (home or job)	2.4	0.6	1.0	0.0	0.5	2.1	3.1	1.2
Illness	1.9	1.5	0.3	3.4	0.4	3.7	0.6	1.6
Pregnancy	0.0	0.1	0.0	0.4	0.0	0.0	0.0	0.1
Got married	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Useless/uninteresting	1.3	2.7	0.9	2.8	3.0	3.7	0.4	2.2
Failed exam	0.4	0.3	0.0	0.3	0.0	0.8	0.9	0.3
Awaiting admission	68.0	78.7	73.7	73.7	77.4	75.9	74.8	75.2
Dismissed	0.5	1.2	1.1	2.3	0.0	0.8	0.7	0.9
Orphaned	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	6.7	9.8	3.7	9.0	17.0	1.8	10.7	8.8

Source: Authors' estimates based on 2007 CWIQ survey.

Table 4c: Reason for not enrolling for previously enrolled girls, 2007

	Residence Area		Quintile					Total
	Urban	Rural	Q1	Q2	Q3	Q4	Q5	
Girls aged 6-11								
Completed school	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Too far away	0.8	6.3	4.9	0.0	0.0	12.0	2.7	4.1
Lack of money/too expensive	22.2	21.0	14.5	15.3	15.4	21.1	37.2	21.5
Working (home or job)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Illness	0.0	1.8	6.2	0.0	0.0	0.0	0.0	1.1
Pregnancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Got married	0.0	0.7	0.0	0.0	0.0	1.8	0.0	0.4
Useless/uninteresting	0.4	0.4	0.9	0.0	1.2	0.0	0.0	0.4
Failed exam	0.0	1.3	0.0	0.0	0.0	2.9	0.6	0.8
Awaiting admission	76.3	69.9	71.5	84.7	81.5	70.9	57.6	72.4
Dismissed	0.0	2.5	0.0	0.0	0.0	4.3	2.6	1.5
Orphaned	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	2.8	8.5	3.7	19.6	8.8	2.2	0.9	6.3
Girls aged 12-17								
Completed school	2.2	0.4	1.3	0.0	0.0	4.0	0.0	1.1
Too far away	0.0	0.9	0.9	0.0	0.0	2.1	0.0	0.6
Lack of money/too expensive	20.9	18.2	19.4	24.9	23.7	8.6	19.5	19.2
Working (home or job)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Illness	2.3	2.3	0.7	2.1	2.3	4.0	1.9	2.3
Pregnancy	7.2	5.7	7.7	6.0	4.9	4.5	8.7	6.3
Got married	0.0	0.4	0.0	0.1	0.0	0.0	1.2	0.3
Useless/uninteresting	1.4	4.8	1.6	7.6	0.3	4.0	4.4	3.5
Failed exam	0.0	0.4	1.4	0.0	0.0	0.0	0.0	0.2
Awaiting admission	66.8	64.5	58.9	58.0	69.0	73.0	65.6	65.4
Dismissed	0.3	0.9	3.0	0.0	0.0	1.0	0.0	0.7
Orphaned	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	3.5	13.4	8.8	15.2	18.2	3.3	2.1	9.7
Girls-All respondents 6-17								
Completed school	1.2	0.2	0.7	0.0	0.0	2.1	0.0	0.6
Too far away	0.4	3.4	2.9	0.0	0.0	6.8	1.3	2.2
Lack of money/too expensive	21.5	19.5	17.1	21.0	20.0	14.5	28.3	20.2
Working (home or job)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Illness	1.2	2.1	3.3	1.3	1.3	2.1	1.0	1.7
Pregnancy	3.8	3.1	4.0	3.6	2.7	2.4	4.4	3.4
Got married	0.0	0.5	0.0	0.1	0.0	0.9	0.6	0.3
Useless/uninteresting	1.0	2.8	1.3	4.5	0.7	2.1	2.2	2.1
Failed exam	0.0	0.8	0.8	0.0	0.0	1.3	0.3	0.5
Awaiting admission	71.3	67.0	64.9	68.9	74.6	72.0	61.6	68.6
Dismissed	0.2	1.7	1.5	0.0	0.0	2.6	1.3	1.1
Orphaned	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	3.2	11.2	6.4	17.0	14.0	2.8	1.5	8.1

Source: Authors' estimates based on 2007 CWIQ survey.

Table 5 provides data on private education spending by households, for those household who have at least one child enrolled in school (the data are not available for each separate child going to school). The largest expenditure in terms of the share of total spending for education is for school fees at the primary school level. This may sound surprising, given the gratuity of public schools, but it may be due to the fact that a large share of children is enrolled in private schools. Still, the share of total education spending allocated to primary school fees does not vary much by quintile of consumption per equivalent adult, which is a bit surprising given the fact that poorer households tend to send their children to public schools more. Schools fees for secondary education also absorb a large part of the private education budget of families, as do school uniforms.

Table 5: Private household expenditure for education, shares, 2007

	Residence Area		Quintile					Total
	Urban	Rural	Q1	Q2	Q3	Q4	Q5	
School uniforms	30.8	12.3	30.4	28.4	22.3	15.7	13.2	18.6
Raincoats	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.4
School books	3.7	2.3	4.1	2.7	2.1	2.5	3.1	2.8
Files and file folders	0.1	0.5	0.2	0.3	0.4	0.3	0.5	0.4
Stationery for school	1.0	0.8	0.5	1.0	0.8	0.7	1.1	0.9
Notebooks	9.3	4.3	8.2	8.7	7.1	5.2	4.8	6.0
School bags and knapsacks	4.0	3.1	3.3	4.0	3.1	3.4	3.3	3.4
Other school material	1.2	0.7	0.7	1.0	1.2	0.7	0.8	0.8
Writing and drawing materials	0.8	0.2	0.5	0.6	0.4	0.4	0.3	0.4
School fees – pre-school	6.5	8.3	6.3	6.4	7.2	7.7	8.6	7.7
School fees - primary school	20.5	25.6	23.3	24.4	25.3	24.5	22.6	23.9
School fees - general secondary school	15.1	25.5	16.4	16.8	19.6	23.3	25.0	21.9
School fees - technical secondary school	1.2	1.1	1.4	1.4	1.6	1.0	0.9	1.1
School fees - higher education	4.4	13.4	3.9	3.7	7.7	12.0	13.9	10.3
Professional/vocational training fees	1.1	1.5	0.6	0.4	1.0	2.1	1.5	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Share of education in total expenditure	2.1	5.1	3.8	3.5	3.6	4.1	2.9	3.4

Source: Authors' estimates based on 2007 CWIQ survey.

As a share of total consumption, table 5 shows that education spending has a higher cost for the poor, but in absolute value, better off households tend to spend significantly more on average. The data on total private spending for education is provided in levels in table 6. On a per capita basis, households in the top decile of the population (ranked according to consumption per equivalent adult) spend ten times as much as households in the bottom. The total private spending for education is estimated at close to L\$1.7 billion (about US\$27 million), which is significantly higher than the total budget of the Ministry of Education (at about \$10 million; see the discussion in section 3 for more details).

In part due to the legacy of the war, the government's education budget is only a fraction of total spending on the public education system. In many cases, NGOs are topping up salaries for teachers, as well as providing other incentives, books, and school supplies directly to public schools. Unfortunately these aid flows are not being tracked well, so that the government does not have a clear idea of how much is currently spent on public education overall (for health, some have suggested that total public health spending may be of the order of US\$60 million for 2007, of which only \$15 million is budgeted government expenditure).

Table 6: Private household expenditure in education, amounts, 2007

Deciles of per eq. adult consumption	Total population	Total students	Total Expenditure (millions of L\$)	Total expenditure in education (millions of L\$)	Per capita expenditure (L\$)	Per capita expenditure in education (L\$)	Per student Expenditure in education (L\$)
1	270469	71053	1234	54	4562	201	765
2	270582	75181	2133	72	7883	267	962
3	270477	77027	2765	91	10222	335	1175
4	270761	83768	3292	119	12158	438	1415
5	269714	83148	3802	155	14096	573	1860
6	271127	76101	4460	140	16451	516	1837
7	270714	82414	5020	202	18544	747	2455
8	269729	90838	5938	249	22013	923	2741
9	271538	74314	7287	222	26834	816	2982
10	270273	94097	13386	384	49526	1420	4079
Total	2705385	807942	49316	1687	18229	624	2088

Source: Authors' estimates based on 2007 CWIQ survey.

In table 7, access is measured by the distance from the nearest school. Remember that in tables 4a-4b, access is not mentioned as one of the two main reasons for not going to school, once a child has already gone in the past. However, in table 3, access was a key reason for never having gone to school. In table 7, we provide data on the average time it takes to reach various types of facilities. At the national level, primary schools are on average within half an hour of where children live, but in rural areas, it takes more than three quarters of an hour to reach the primary school. Secondary schools are located much further away, at more than three hours of a rural household's dwelling on average. These distances to schools are high in comparison of what has been observed in other countries, which justifies an effort on the part of the Ministry of Education as well as donors not only of rehabilitating existing schools, but also of building new schools and classrooms in order to improve access.

Table 7: Average time (in minutes) to the nearest infrastructure, 2007

	Residence Area		Quintile					Total
	Urban	Rural	Q1	Q2	Q3	Q4	Q5	
Supply of drinking water	9.7	8.4	11.4	8.4	8.9	7.5	8.4	8.8
Food market	23.2	179.1	162.8	161.0	167.6	113.5	71.0	129.8
Public transportation	12.8	161.7	145.7	140.4	152.0	77.2	77.5	114.6
Primary school	15.5	46.5	33.4	46.1	46.6	27.3	32.5	36.7
Secondary school	24.3	203.0	114.1	203.0	198.9	116.2	113.3	146.3
Health clinic/hospital	29.6	151.6	124.8	143.4	145.4	99.5	71.0	113.0
All season road	16.7	333.6	167.9	322.8	323.8	227.8	153.2	233.3
Any road (vehicle)	6.1	33.0	31.7	26.6	25.0	21.4	20.5	24.5

Source: Authors' estimates based on 2007 CWIQ survey.

2.3. *Satisfaction with education services and reasons for non-satisfaction*

The gains that have been achieved recently in enrollment at the primary level are impressive, but this has placed a larger burden on an education system that has only limited resources. As a result, while quality was already an issue in the past, it is probably even more of an issue now, especially as many of the new children that have returned to schools have very limited skills in terms of literacy and numeracy.

In addition, many of the schools suffer from dilapidated infrastructure. According to a Rapid Assessment of Learning Spaces by MOE/UNICEF (2004) and a subsequent census of public primary schools conducted by the Ministry of Education (2006), one in five schools in Liberia have been destroyed during the war, with the rest of the infrastructure in need of repair. Many schools lack basic functioning amenities such as water and latrines, and desks are available only for one in four children. The report prepared by the Ministry of Education (2007) for the fast track initiative suggests that the pupil textbook ratio is very low, at 27 to one in public primary schools and nine to one at the secondary level. Furthermore, as many qualified teachers have left the country or have been displaced, and as training of new teachers was affected by the conflict as well, more than sixty percent of teachers today lack the formal qualifications in principle required for teaching. Teacher salaries are very low, of the order of only US\$200 to US\$300 per year, so that teachers are forced to find other means of livelihoods, among others by raising user fees (although this practice has been reduced in recent years).

Under such conditions, one might expect satisfaction rates with education services to be low in Liberia. This is indeed the case, especially for children enrolled in public schools as shown in tables 8 to 11. At the primary level, only about half of all children enrolled in public schools have parents who are satisfied with the services they receive, versus about 60 percent in private schools. In public schools, the main reasons for the lack of satisfaction are the lack of books or supplies, the fact that there are not enough teachers, the fact that facilities are in poor condition, the long distance to schools, and poor teaching. In private schools, low satisfaction in primary schools is due to high fees and the lack of books or supplies. The rates of satisfaction in secondary schools are of the same order of magnitude, that is not very good, and the complaints are similar in both public and private schools. Satisfaction with tertiary education is also low, but there high fees are one of the main reasons for not being satisfied in both public and private schools (in public secondary schools, slightly less than ten percent of students complain about high fees, versus close to 30 percent for private schools). Clearly, at all levels, there is room for improvements in the quality of the education that is provided to children and youth.

Table 8: Problems encountered at school, primary, 2007

	Residence Area		Quintile					Total
	Urban	Rural	Q1	Q2	Q3	Q4	Q5	
Primary-Public								
None (satisfied)	44.9	50.4	47.6	57.9	42.4	54.4	42.6	49.6
Lack of books or supplies	26.2	20.7	18.1	18.2	25.7	24.4	23.8	21.5
Poor teaching	9.8	9.9	11.2	9.0	7.5	10.6	11.7	9.9
Not enough teachers	8.2	16.3	16.9	13.6	16.6	18.3	9.1	15.2
Teachers often absent	9.8	6.4	9.7	7.6	5.8	4.9	4.6	6.9
Lack of space	3.5	7.0	7.8	5.8	6.8	3.6	9.0	6.5
Facilities in bad condition	6.9	13.6	17.9	11.2	8.8	13.3	10.6	12.6
High fees	4.6	4.4	7.4	1.5	1.8	1.7	12.0	4.4
Long distance to school	14.2	11.6	11.8	9.1	18.1	11.2	9.6	12.0
Other	2.6	2.9	3.2	3.6	1.4	1.2	5.3	2.9
Primary-Private								
None (satisfied)	60.3	60.9	62.2	56.6	59.3	64.6	59.6	60.6
Lack of books or supplies	11.6	17.0	14.4	12.6	15.0	13.6	14.5	14.1
Poor teaching	1.7	4.1	2.4	1.0	3.4	1.5	4.9	2.8
Not enough teachers	1.5	8.2	5.9	4.4	6.1	2.6	4.9	4.6
Teachers often absent	1.4	2.8		3.9	1.5	2.0	2.3	2.1
Lack of space	1.5	8.4	10.9	4.1	6.6	2.9	2.4	4.7
Facilities in bad condition	2.7	9.6	4.1	7.9	9.1	5.2	3.5	5.9
High fees	28.8	11.2	17.5	25.1	21.0	16.0	23.3	20.6
Long distance to school	5.4	6.6	3.7	5.0	9.3	5.4	5.4	5.9
Other	1.0	1.7	5.9	0.3	0.5	1.2	0.7	1.3
Primary-All								
None (satisfied)	56.4	53.4	51.5	57.5	49.7	59.8	52.7	54.3
Lack of books or supplies	15.3	19.6	17.1	16.3	21.1	18.7	18.3	18.3
Poor teaching	3.8	8.2	8.8	6.3	5.8	5.8	7.7	6.8
Not enough teachers	3.3	14.0	14.0	10.5	12.1	10.1	6.6	10.6
Teachers often absent	3.6	5.4	7.1	6.3	3.9	3.4	3.3	4.8
Lack of space	2.0	7.4	8.6	5.2	6.8	3.2	5.1	5.7
Facilities in bad condition	3.8	12.4	14.3	10.1	9.0	9.0	6.4	9.7
High fees	22.6	6.4	10.1	9.5	10.1	9.3	18.7	11.4
Long distance to school	7.7	10.2	9.6	7.7	14.3	8.1	7.1	9.4
Other	1.4	2.6	3.9	2.5	1.0	1.2	2.6	2.2

Source: Authors' estimates based on 2007 CWIQ survey.

Table 9: Problems encountered at school, secondary, 2007

	Residence Area		Quintile					Total
	Urban	Rural	Q1	Q2	Q3	Q4	Q5	
Secondary-Public								
None (satisfied)	52.3	54.2	54.0	51.5	50.3	68.1	46.4	53.6
Lack of books or supplies	27.6	20.3	17.7	29.7	32.9	14.9	14.1	22.4
Poor teaching	9.5	9.5	9.8	9.0	7.7	9.7	11.8	9.5
Not enough teachers	9.7	12.1	13.3	15.8	9.0	8.0	7.8	11.4
Teachers often absent	5.9	5.8	9.3	7.2	3.1	3.5	4.1	5.8
Lack of space	4.3	7.1	4.2	11.4	3.0	4.7	6.6	6.2
Facilities in bad condition	4.5	5.2	4.3	4.3	2.2	8.4	6.8	5.0
High fees	2.6	11.7	6.0	8.7	7.7	1.0	23.1	9.1
Long distance to school	11.1	13.7	12.6	17.0	15.6	4.9	11.9	12.9
Other	1.9	3.0	0.0	2.3	4.0	2.6	5.6	2.7
Secondary-Private								
None (satisfied)	53.1	61.1	57.3	50.6	67.4	49.8	56.3	55.8
Lack of books or supplies	16.9	9.7	12.0	19.7	8.7	16.7	14.7	14.5
Poor teaching	1.0	3.1	0.5	2.5	1.9	1.6	2.0	1.7
Not enough teachers	0.8	5.9	5.6	0.0	2.3	4.5	0.5	2.6
Teachers often absent	0.4	2.8	3.6	1.5	0.5	0.5	1.3	1.2
Lack of space	1.6	2.5	2.1	0.4	2.8	2.0	1.7	1.9
Facilities in bad condition	2.1	6.3	3.2	0.9	7.5	2.6	3.2	3.5
High fees	34.3	20.7	18.7	39.3	24.0	36.5	26.7	29.6
Long distance to school	6.5	10.5	14.5	4.7	7.1	8.1	6.8	7.9
Other	2.6	1.0	3.0	2.5	0.6	2.5	1.9	2.0
Secondary-All								
None (satisfied)	52.9	56.6	55.1	51.2	59.3	55.6	53.0	54.8
Lack of books or supplies	20.0	16.6	15.8	26.5	20.2	16.2	14.5	18.2
Poor teaching	3.4	7.3	6.6	6.9	4.7	4.2	5.3	5.4
Not enough teachers	3.3	9.9	10.7	10.7	5.5	5.6	3.0	6.7
Teachers often absent	1.9	4.7	7.3	5.3	1.7	1.4	2.2	3.4
Lack of space	2.4	5.5	3.5	7.8	2.9	2.9	3.4	4.0
Facilities in bad condition	2.8	5.6	3.9	3.2	5.0	4.4	4.4	4.2
High fees	25.3	14.8	10.3	18.6	16.2	25.2	25.5	19.9
Long distance to school	7.8	12.6	13.2	13.1	11.2	7.1	8.5	10.3
Other	2.4	2.3	1.0	2.4	2.2	2.5	3.1	2.3

Source: Authors' estimates based on 2007 CWIQ survey.

Table 10: Problems encountered at school, post-secondary, 2007

	Residence Area		Quintile					Total
	Urban	Rural	Q1	Q2	Q3	Q4	Q5	
Post secondary-Public								
None (satisfied)	49.1	82.9	100.0	82.5	57.6	48.3	43.7	51.9
Lack of books or supplies	18.8	17.1	0.0	17.5	19.8	23.9	18.2	18.7
Poor teaching	4.6	0.0	0.0	0.0	0.0	5.2	6.1	4.2
Not enough teachers	12.2	0.0	0.0	0.0	2.8	25.8	9.3	11.2
Teachers often absent	5.7	0.0	0.0	0.0	0.0	5.2	8.0	5.2
Lack of space	10.6	0.0	0.0	0.0	0.0	10.3	14.8	9.8
Facilities in bad condition	1.8	0.0	0.0	0.0	0.0	0.0	3.4	1.7
High fees	17.4	0.0	0.0	17.5	34.9	5.7	15.9	16.0
Long distance to school	8.1	11.6	0.0	17.5	2.8	2.2	13.9	8.4
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Post secondary-Private								
None (satisfied)	57.0	75.9	53.7	63.4	74.6	54.7	66.3	62.3
Lack of books or supplies	5.2	2.9	0.0	0.0	0.0	11.8	0.0	4.6
Poor teaching	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Not enough teachers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Teachers often absent	5.1	0.0	0.0	0.0	0.0	3.9	5.7	3.6
Lack of space	3.3	0.0	0.0	0.0	0.0	6.1	0.0	2.4
Facilities in bad condition	0.7	0.0	0.0	0.0	0.0	0.0	1.4	0.5
High fees	31.7	21.2	46.3	36.6	12.9	30.2	29.9	28.8
Long distance to school	6.5	8.8	0.0	0.0	12.5	2.1	12.8	7.2
Other	2.8	0.0	0.0	0.0	0.0	3.4	1.9	2.0
Post secondary-All								
None (satisfied)	52.9	77.3	83.2	67.9	65.6	52.6	54.2	57.5
Lack of books or supplies	12.3	5.7	0.0	4.1	10.5	15.9	9.7	11.0
Poor teaching	2.4	0.0	0.0	0.0	0.0	1.8	3.3	1.9
Not enough teachers	6.3	0.0	0.0	0.0	1.5	8.7	5.0	5.1
Teachers often absent	5.4	0.0	0.0	0.0	0.0	4.4	7.0	4.4
Lack of space	7.1	0.0	0.0	0.0	0.0	7.5	7.9	5.8
Facilities in bad condition	1.3	0.0	0.0	0.0	0.0	0.0	2.5	1.1
High fees	24.3	17.1	16.8	32.1	24.6	21.9	22.4	22.9
Long distance to school	7.4	9.4	0.0	4.1	7.4	2.1	13.4	7.7
Other	1.3	0.0	0.0	0.0	0.0	2.3	0.9	1.1

Source: Authors' estimates based on 2007 CWIQ survey.

Table 11: Problems encountered at school, all levels, 2007

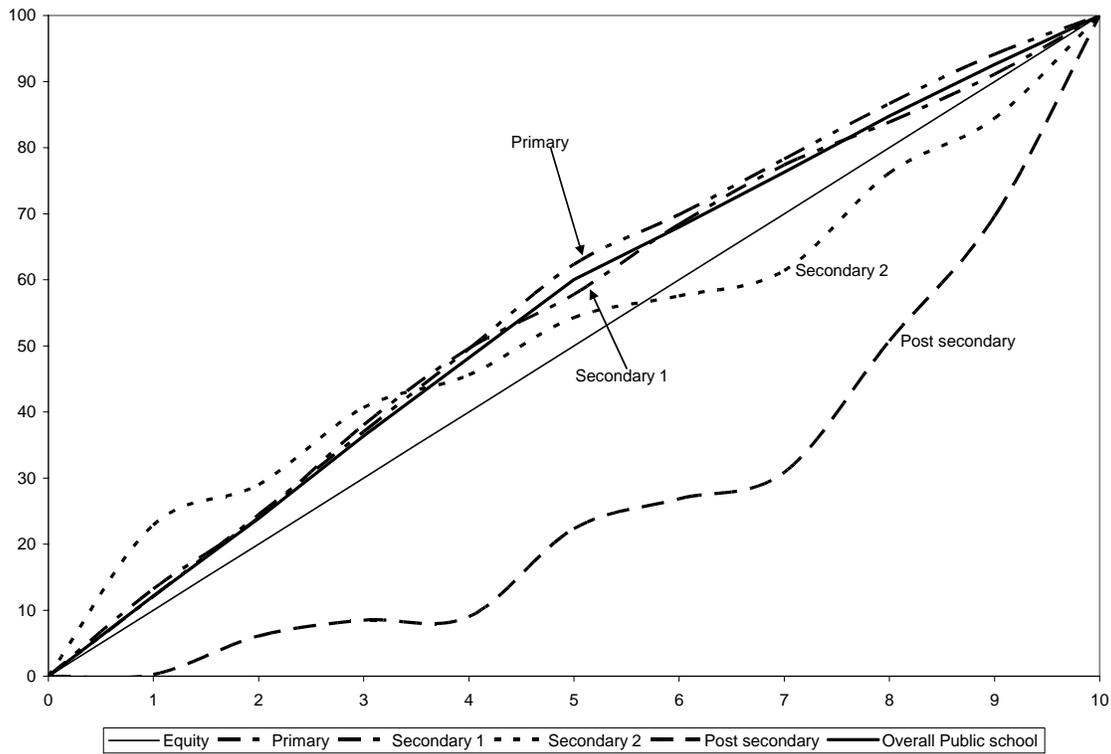
	Public-all							Total
	Residence Area		Quintile					
	Urban	Rural	Q1	Q2	Q3	Q4	Q5	
None (satisfied)	47.9	51.2	49.4	56.6	44.3	56.9	43.6	50.5
Lack of books or supplies	25.6	20.6	17.8	20.7	27.0	22.5	20.9	21.6
Poor teaching	8.9	9.8	10.8	8.9	7.4	10.2	11.2	9.6
Not enough teachers	9.3	15.5	16.0	14.0	14.7	16.6	8.8	14.3
Teachers often absent	7.9	6.3	9.5	7.5	5.1	4.6	4.9	6.6
Lack of space	4.8	7.0	6.9	7.0	5.9	4.1	9.0	6.6
Facilities in bad condition	5.4	12.0	14.8	9.6	7.3	11.7	9.0	10.7
High fees	5.8	5.8	7.0	3.1	3.9	1.7	15.0	5.8
Long distance to school	12.4	12.0	11.9	10.8	17.2	9.6	10.6	12.1
Other	2.0	2.9	2.4	3.3	1.8	1.4	4.9	2.7
	Private-all							
None (satisfied)	57.8	61.3	60.7	55.5	61.8	59.3	59.0	59.3
Lack of books or supplies	12.9	14.9	13.5	13.7	12.9	14.5	13.7	13.8
Poor teaching	1.4	3.7	1.8	1.3	2.9	1.5	3.7	2.4
Not enough teachers	1.2	7.4	5.8	3.4	5.0	3.1	3.3	3.9
Teachers often absent	1.3	2.7	1.0	3.3	1.2	1.7	2.2	1.9
Lack of space	1.6	6.8	8.3	3.3	5.5	2.8	2.1	3.8
Facilities in bad condition	2.4	8.6	3.8	6.3	8.4	4.1	3.3	5.0
High fees	30.7	13.6	18.2	28.2	21.5	23.4	24.7	23.5
Long distance to school	5.8	7.5	6.6	4.9	8.8	6.0	6.2	6.5
Other	1.6	1.5	5.0	0.7	0.5	1.8	1.1	1.5
	Boys							
None (satisfied)	54.8	52.5	52.0	56.0	49.9	57.4	50.7	53.3
Lack of books or supplies	17.4	19.9	16.4	20.6	21.5	18.7	17.8	19.0
Poor teaching	4.5	8.6	9.2	7.4	6.4	5.4	7.5	7.2
Not enough teachers	4.7	13.6	13.1	12.2	10.7	10.5	5.8	10.5
Teachers often absent	3.5	5.6	7.6	6.7	3.5	2.4	4.0	4.9
Lack of space	2.6	7.2	6.1	6.9	6.1	3.9	4.8	5.6
Facilities in bad condition	2.9	11.6	12.5	8.4	8.2	7.5	6.3	8.6
High fees	22.0	9.3	12.5	10.3	11.9	13.7	20.8	13.7
Long distance to school	7.3	11.1	10.0	8.9	13.8	8.0	8.5	9.8
Other	1.2	2.3	2.0	2.4	1.1	1.6	2.7	1.9
	Girls							
None (satisfied)	55.1	56.6	53.6	56.6	55.0	59.1	55.1	56.0
Lack of books or supplies	15.7	17.6	17.0	15.0	19.5	17.0	15.4	16.8
Poor teaching	2.7	7.0	6.7	4.9	4.1	5.0	5.9	5.3
Not enough teachers	2.3	12.3	13.1	7.9	9.8	7.0	5.1	8.3
Teachers often absent	2.9	4.6	6.4	5.2	3.1	3.5	2.5	3.9
Lack of space	2.5	6.7	9.1	4.0	5.3	2.8	4.9	5.0
Facilities in bad condition	3.6	10.0	10.6	8.7	7.4	7.1	4.8	7.5
High fees	25.1	6.7	6.8	13.5	11.9	14.8	20.9	14.1
Long distance to school	8.1	10.0	11.0	8.6	12.9	7.1	7.4	9.2
Other	2.2	2.7	4.9	2.6	1.4	1.7	2.5	2.5

Source: Authors' estimates based on 2007 CWIQ survey.

3. Benefit incidence of public spending for education

In this section, we provide an analysis of the benefit incidence of public spending for education. The key data are provided in tables 12a (for all students) and 12b (for students in public schools) and visualized in Figure 1 in the case of public schools. Tables 12a and 12b provide estimates of the number of children from households belonging to various deciles of per equivalent adult consumption that are attending various levels of schooling. In the case of table 12b devoted to public government schools only, under the simplifying assumption that the unit costs of enrollment are similar for all students attending a given cycle, the estimates of the number of students enrolled provide us with shares of total spending per cycle that are allocated to the various deciles. It can be seen that at the primary, junior secondary, and senior secondary levels, public spending for education seems to be allocated actually more to the poor than to other deciles, while at the post-secondary level most of the public spending goes to students who belong to the wealthier segments of the population. The fact that public spending for education appears to be pro-poor is a somewhat surprising finding, but it is again related to the fact that in Liberia a large share of students are enrolled in private as opposed to public schools, with the poor more likely to use public schools than better off households. Figure 1 is simply a representation in terms of concentration curves of the data provided in table 12b regarding the shares of public spending estimated to benefit various deciles. Note that the columns “total” in table 12a and 12b are not weighted by the shares of public spending allocated to the various levels of spending.

Figure 1: Concentration curve of enrollment in public schools, 2007



Source: Authors' estimates based on 2007 CWIQ survey.

Table 12a: Distribution of enrolled students by grade, all types of schooling, 2007

Deciles	Overall Students					Share				
	Primary	Secondary 1	Secondary 2	Post secondary	Total	Primary	Secondary 1	Secondary 2	Post secondary	Total
1	52205	16326	2305	216	71053	9.0	9.4	10.5	0.7	8.8
2	58397	14786	884	1113	75181	10.0	8.5	4.0	3.7	9.3
3	59846	15209	1156	816	77027	10.3	8.7	5.3	2.7	9.5
4	65185	16649	1028	907	83768	11.2	9.5	4.7	3.0	10.4
5	62712	14824	2482	3129	83148	10.8	8.5	11.3	10.4	10.3
6	56427	16981	1162	1531	76101	9.7	9.7	5.3	5.1	9.4
7	55793	20586	1859	4176	82414	9.6	11.8	8.5	13.9	10.2
8	61652	20306	3435	5445	90838	10.6	11.6	15.7	18.1	11.2
9	50888	15994	2649	4783	74314	8.8	9.2	12.1	15.9	9.2
10	58322	22826	4933	8016	94097	10.0	13.1	22.5	26.6	11.6
Total	581428	174487	21893	30134	807942	100.0	100.0	100.0	100.0	100.0

Source: Authors' estimates based on 2007 CWIQ survey.

Table 12b: Distribution of enrolled students by grade, public schools only, 2007

Deciles	Girls in public schools					Boys in public schools					Overall in public schools				
	Primary	Sec. J	Sec. S	Post Sec.	Total	Primary	Sec. J	Sec. S	Post Sec.	Total	Primary	Sec. J	Sec. S	Post Sec.	Total
Number of students															
1	16455	3586	981	37	21059	23423	7576	929	0	31927	39878	11161	1910	37	52986
2	15052	3263	260	286	18861	25891	5825	253	523	32493	40943	9089	513	808	51353
3	16780	3218	0	211	20209	24521	8673	973	124	34291	41301	11891	973	334	54500
4	18073	2600	228	0	20902	23376	7169	183	71	30798	41449	9769	411	71	51700
5	18774	1764	349	543	21429	23392	5153	375	1309	30230	42166	6917	724	1852	51659
6	11459	4181	65	0	15705	13421	4750	210	623	19003	24879	8931	275	623	34708
7	14064	2624	8	137	16834	13736	4960	311	425	19432	27800	7585	319	562	36266
8	12911	2681	170	210	15972	14665	2791	1063	2546	21065	27576	5472	1233	2756	37037
9	12860	2085	416	654	16014	11810	4031	276	1970	18088	24670	6116	692	2624	34102
10	8779	3641	505	1779	14705	10585	3871	794	2437	17687	19364	7512	1299	4217	32392
Total	145207	29643	2982	3857	181688	184819	54800	5368	10028	255016	330026	84443	8350	13885	436704
Shares (%)															
1	11.3	12.1	32.9	1.0	11.6	12.7	13.8	17.3	0.0	12.5	12.1	13.2	22.9	0.3	12.1
2	10.4	11.0	8.7	7.4	10.4	14.0	10.6	4.7	5.2	12.7	12.4	10.8	6.1	5.8	11.8
3	11.6	10.9	0.0	5.5	11.1	13.3	15.8	18.1	1.2	13.4	12.5	14.1	11.7	2.4	12.5
4	12.4	8.8	7.7	0.0	11.5	12.6	13.1	3.4	0.7	12.1	12.6	11.6	4.9	0.5	11.8
5	12.9	5.9	11.7	14.1	11.8	12.7	9.4	7.0	13.1	11.9	12.8	8.2	8.7	13.3	11.8
6	7.9	14.1	2.2	0.0	8.6	7.3	8.7	3.9	6.2	7.5	7.5	10.6	3.3	4.5	7.9
7	9.7	8.9	0.3	3.6	9.3	7.4	9.1	5.8	4.2	7.6	8.4	9.0	3.8	4.0	8.3
8	8.9	9.0	5.7	5.5	8.8	7.9	5.1	19.8	25.4	8.3	8.4	6.5	14.8	19.8	8.5
9	8.9	7.0	13.9	17.0	8.8	6.4	7.4	5.1	19.6	7.1	7.5	7.2	8.3	18.9	7.8
10	6.0	12.3	16.9	46.1	8.1	5.7	7.1	14.8	24.3	6.9	5.9	8.9	15.6	30.4	7.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' estimates based on 2007 CWIQ survey.

4. Determinants of school enrollment

In this last section, we look at the determinants of school enrollment using standard (probit) regression techniques. The analysis is conducted for children aged 6 to 14, for the sample as a whole and for boys and girls separately. By choosing this age bracket, we are implicitly focusing on primary school enrollment, instead of secondary school enrollment.

The dependent variable is whether the child is enrolled in school or not. The explanatory variables include the following: (a) Characteristic of the child - the age of the child and the age squared, the sex of the child, whether the child is the son or daughter of the household head, whether the child's father is alive, whether the father lives in the household, and whether the child's mother is alive and whether she lives in the household; (b) geographic location variables, including urban versus rural areas and a set of dummy variables for various regions (Greater Monrovia, North Central, North Western, South Central, South Eastern A, and South Eastern B); (c) household demographic variables – the number of children aged 0 to 5 (and its square), the number of children aged 6 to 14 (and its square), the number of male adults aged 15 to 60 (and its square), the number of female adults aged 15 to 60 (and its square), the number of seniors aged over 60 (and its square), the age of the household head (and its square), whether the household head is male or female, whether the head has a spouse or not, and the marital status of the head (single or never married, monogamous, polygamous, widowed, divorced or separated); (d) the education level of the head (none, some primary, primary completed, some secondary, secondary completed, post-secondary) and the same variables for the spouse of the head if there is one; (e) the socio-economic group of the head of household (employment in the public, private formal or private informal sector, self-employment in agriculture or another sector, or inactivity and unemployment, whether the head has a second job), (f) a set of other household variables (the total acres of cultivable land owned, whether the household has migrated due to the war and has been displaced, and whether the household has returned to its place of origin or never moved); and finally (g) a set of variables indicating access to schools (time to nearest primary and secondary schools).

The estimations are done for the sample as a whole, as well as separately for boys and girls, and for urban and rural areas. Only the coefficient estimates are provided to save space, with indication as to their level of statistical significance. The results from the estimations are mostly as expected. First, there is an inverted U relationship between the age of the child and the probability of going to school. When running the regression on the sample as a whole, there is no statistically significant difference in enrollment rates between boys and girls (remember though that we are looking here implicitly at primary school enrollment, and that differences between sexes are larger at the secondary school level, as shown in table 1). When the father is alive, a child is more likely to go to school (increase in probability of enrollment of 4.1 percent at the national level for the joint sample, but this increase comes from an impact that is statistically significant in rural areas only; said differently, orphans are less likely to be enrolled in school in rural areas). Surprisingly, there is a negative association between living in urban areas and going to school, but this is partly offset by the positive impact of being in the greater Monrovia area. Overall, the geographic location effects, when they are present, are of a limited order of magnitude (three to five percentage point difference in enrollment). Many of the demographic variables for the composition of the household are not significant, although having a higher number of male adults in the household does seem in some cases to improve the likelihood for the child to be enrolled. By contrast, having a female household head leads to an increase in school enrollment.

Table 13: Determinants of School enrollment, 2007

	Boys and Girls (6-14 years old)				Boys (6-14 years old)				Girls (6-14 years old)			
	National	Monrovia	Other urban	Rural	National	Monrovia	Other urban	Rural	National	Monrovia	Other urban	Rural
Characteristic of the child												
Age	0.136***	0.151***	0.004***	0.112***	0.129***	0.024***	0.000***	0.106***	0.142***	0.196***	0.000*	0.117***
Age, squared	-0.008***	-0.009	-0.000***	-0.005*	-0.007**	-0.002*	-0.000***	-0.003	-0.009***	-0.012	-0.000*	-0.007**
Girl	-0.003	0.000	0.000	-0.003								
Son/daughter of head	0.017	0.043	-0.004***	0.026	0.000	0.006	0.000	-0.004	0.038*	0.065	-0.000*	0.055***
Father is alive	0.041**	-0.033	-0.005*	0.064***	0.020	-0.027	-0.246***	0.066***	0.047**	0.022	0.000	0.049***
Father lives in household	-0.007	0.008	0.000	-0.019	-0.004	0.001	0.000	-0.025	-0.022	-0.045	0.000**	-0.025
Mother is alive	0.023	0.023	0.000	0.017	0.042	0.000	0.000	0.048	0.001	-0.075		-0.026
Mother lives in household	0.003	-0.008	0.001**	-0.002	0.011	-0.001	0.000**	0.014	-0.005	-0.025	0.000	-0.020
Residence area												
Urban	-0.040***	-	-	-	-0.031**	-	-	-	-0.049***	-	-	-
Rural	Ref.	-	-	-	Ref.	-	-	-	Ref.	-	-	-
Region												
Greater Monrovia	0.038**	-	-	-	0.017	-	-	-	0.063**	-	-	-
North Central	-0.034***	-	0.000	-0.044***	-0.030*	-	0.000	-0.042**	-0.041***	-	-0.000*	-0.041***
North Western	0.003	-	0.005***	-0.016	0.024	-	0.000***	0.011	-0.019	-	-0.000*	-0.031**
South Central	-0.043***	-	-0.001***	-0.044***	-0.042***	-	-0.000**	-0.049***	-0.040**	-	-0.000*	-0.033**
South Eastern A	Ref.	-	Ref.	Ref.	Ref.	-	Ref.	Ref.	Ref.	-	Ref.	Ref.
South Eastern B	-0.001	-	0.002**	-0.011	-0.012	-	0.000***	-0.026	0.011	-	-0.000**	0.006
Household composition												
Children aged 0 to 5	0.010	0.020	0.000	0.016	0.019	0.001	0.000	0.028	-0.011	0.011	-0.000*	-0.005
Children aged 0 to 5, squared	0.000	-0.003	0.000	0.000	-0.002	-0.001	0.000	-0.002	0.004	0.002	0.000*	0.003
Children aged 6 to 14	-0.003	-0.011	0.000	-0.001	0.002	-0.003	0.000	0.000	-0.004	-0.006	0.000	-0.002
Children aged 6 to 14, squared	0.000	0.002	0.000	0.000	0.000	0.001*	0.000	0.000	0.000	-0.002	-0.000*	0.000
Male adults aged 15 to 60	0.025**	0.059**	0.001**	0.016	0.028*	0.008	0.000	0.025*	0.018	0.116**	0.000	-0.003
Male adults aged 15 to 60, squared	-0.004	-0.006	-0.000**	-0.004	-0.004	-0.001	0.000	-0.004	-0.004	-0.013	0.000	-0.002
Female adults aged 15 to 59	0.016	0.050**	0.000	-0.001	0.023	0.015***	0.000	0.002	0.004	-0.006	0.000	-0.005
Female adults aged 15 to 59, squared	-0.005**	-0.009**	0.000	-0.001	-0.005**	-0.003***	0.000	-0.002	-0.003	-0.003	0.000	-0.001
Seniors aged over 60	0.019	-0.075	-0.001	0.022	0.029	0.003	0.000	0.025	0.019	-0.139	0.000	0.018
Seniors aged over 60, squared	-0.009	0.097**	0.001**	-0.020	-0.002	0.011		-0.007	-0.027	0.124*	0.000*	-0.038**
Age of the household head	-0.003	0.006	0.000	-0.003	-0.001	0.002	-0.000**	0.000	-0.006**	0.008	0.000	-0.008***
Age of the household head, squared	0.000	0.000	0.000	0.000	0.000	-0.000*	0.000**	0.000	0.000***	0.000	0.000	0.000***
Female household head	0.042***	0.105***	0.001	0.028	0.048**	0.005	0.000	0.044	0.035*	0.237***	0.000***	0.020
Head has no spouse	-0.017	-0.036	0.002*	-0.028	-0.022	-0.011*	0.000	-0.024	-0.020	-0.054	0.000	-0.033
Marital Status of the head												
Single or never married	0.022	0.004	0.000	0.031	0.006	0.002	0.000	0.015	0.044*	0.011	0.000	0.042
Monogamous	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Polygamous	-0.020	-0.071**		-0.013	-0.005	-0.005		0.003	-0.037**	-0.102**		-0.026
Widowed, divorced or separated	-0.017	-0.039	-0.000*	0.011	-0.001	0.011	-0.000**	0.037	-0.036	-0.085	0.000	-0.024

Source: Authors' estimates based on 2007 CWIQ survey. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 13 (continued): Determinants of School enrollment, 2007

	Boys and Girls (6-14 years old)				Boys (6-14 years old)				Girls (6-14 years old)			
	National	Monrovia	Other urban	Rural	National	Monrovia	Other urban	Rural	National	Monrovia	Other urban	Rural
Education level of head												
None	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Some primary	0.034**	0.006	0.000	0.039**	0.058**	-0.006*	0.000	0.071**	0.011	0.048	-0.000*	0.016
Completed primary	-0.002	0.096	-0.001**	0.001	0.011	-0.005	-0.000**	0.033	-0.019	0.372**		-0.019
Some secondary	0.021*	0.046	0.000	0.016	0.033**	0.005	0.000	0.040**	0.010	0.064	0.000	0.003
Completed secondary	0.056***	0.104***	0.001	0.057***	0.077***	0.014*	0.000***	0.109***	0.041**	0.162**	0.000**	0.030
Post secondary	0.082***	0.190***	0.001	0.067**	0.107***	0.034**	0.000***	0.085*	0.067**	0.259**	0.000	0.061*
Education level of Spouse												
None	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Some primary	0.012	0.010	0.002	0.016	0.003	0.016	0.000	0.005	0.021	-0.013	0.000*	0.029
Completed primary	0.036	0.015	0.008*	0.045	-0.029	-0.004	0.000	-0.025	0.143***	0.355*	0.000*	0.138**
Some secondary	0.060***	0.015	0.002	0.093***	0.048**	0.016*	0.000	0.059*	0.056**	-0.038	0.000*	0.094***
Completed secondary	0.054**	0.004	0.001	0.027	0.055	-0.003	0.000	0.020	0.047	-0.017	0.000	0.020
Post secondary	0.099**	0.086	0.001	0.088	0.056	0.015	0.000	0.079	0.159**	0.116		0.164
Socio-economic group of head of household												
Public	0.020	0.634***	0.000	0.003	0.020	1.000***	0.000*	0.004	0.008	0.358	0.000	-0.007
Private formal	0.008	0.546**	0.000	0.024	0.004	1.000***	0.000	0.046	0.003	0.327	0.000	0.011
Private informal	-0.011	0.610**	0.001	-0.033	-0.035*	1.000***	0.001**	-0.053**	0.028	0.330	0.000	0.012
Self-agriculture	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Self-other	-0.004	0.415**	0.002*	-0.012	-0.001	1.000**	0.000***	-0.024	-0.012	0.110	0.000	0.002
Unemployed	0.002	0.460*	0.002	0.009	0.013	1.000***	0.003***	0.017	-0.016	0.147	0.000	0.004
Inactive, other	-0.014	0.376*	0.000	-0.004	0.001	1.000***	0.000**	0.010	-0.027	0.093	-0.000**	-0.015
Other household variables												
Head has a second job	0.005	-0.052	0.005**	0.016	0.003	-0.005	0.000**	0.014	0.009	-0.079	0.000	0.017
Total Acres of cultivable land owned	0.000	0.011***	0.000***	-0.001	0.000	0.001***	0.000**	-0.001	0.000	0.013**	0.000	-0.001
Migration status due to the war												
Displaced	0.012	-0.066***	0.008**	0.055*	-0.007	-0.007***	0.000***	0.037	0.044	-0.097**	0.000*	0.074
Displaced and has returned to place of origin	0.019*	0.002	0.000	0.030***	0.006	0.003	0.000	0.011	0.033***	-0.035	0.000*	0.044***
Never moved	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Infrastructures accessibility												
Time to primary school (in 1000 minutes)	-0.792***	0.651	-0.018*	-0.843***	-0.732***	0.127	0.000	-0.884***	-0.746***	1.427	-0.000**	-0.680***
Time to secondary school (in 1000 minutes)	-0.001	-2.134***	0.001	0.003	0.007	-0.361***	0.000	0.014	-0.004	-2.192**	0.000*	0.000
Observations	3914	707	507	2686	1942	346	263	1323	1972	360	229	1363

Source: Authors' estimates based on 2007 CWIQ survey. * significant at 10%; ** significant at 5%; *** significant at 1%

The marital status of the head does not affect school enrollment, but the head's (and to a lower extent the spouse's) education do, with large impacts as of the secondary school completed. The impact of the socio-economic group of the head is mild, except in the Greater Monrovia area, where children in households where the head is involved in wage work (whether in the public, private formal, or private informal sector) have a much higher probability of going to school than otherwise. Land ownership is also associated with higher enrollment, but only in urban areas where such ownership is a clear indication of wealth. There is also some indication that if a household has been displaced and lives in the Greater Monrovia area, the probability of school enrollment for the children is lower, while it is higher if the household has been displaced but has now returned to its place of origin in rural areas. Finally, as expected, the longer it takes to go to the nearest school, the less likely a child is to go to school, at least in rural areas.

These regressions provide some useful insights into the determinants of schooling. For policy purposes, the main use of the regressions lies in assessing the potential impact of the construction of new schools on enrollment. For example, the coefficient for the pooled sample of boys and girls of the distance to primary schools is -0.843 in rural areas. Given that the explanatory variable is expressed in 1,000 minutes, this means that a 10 minutes reduction in the time to go to school would increase school enrollment by about 0.008 percentage point. It was mentioned that in rural areas, the average time needed to reach the nearest primary school was approximately 46.5 minutes. If this distance were cut in half, to 26.3 minutes, we would obtain an increase in enrollment of about 2.2 percentage points. While this is not negligible, it is not as large as one is often led to believe, which suggests that policies to increase school enrollment further need to go beyond the simple provision of new schools, even if this is necessary of course.

5. Conclusion

This paper has provided a basic diagnostic of the education system in Liberia on the basis of the analysis of the 2007 CWIQ survey. Several findings show that Liberia stands out in comparison with other countries. First, there are large differences between net and gross enrollment rates due to the fact that many older children have returned to school since the end of the conflict. Second, non-government schools play a major role in the education of children, which is again in part a legacy of the conflict. Third, despite the elimination of school fees for primary education, costs remain an issue for many households, as it is the main reason for never having been enrolled for those students who never went to school. Distance is the second main reason for never having been enrolled. As to the main reason for not continuing one's education when a child has been enrolled in the past, it is related to the need to wait for admission, but cost shows up again as a significant barrier to further schooling among this group.

Public spending for education appears to be pro-poor at the primary and secondary level, at least on the basis of simple statistics on enrollment rates by household consumption deciles. At the tertiary level, public spending does not reach the poor much. While overall public spending seems to be more pro-poor in Liberia than in other countries due in part to the fact that better off households rely heavily on private schools, satisfaction rates with the services received is low, especially in public schools, but also in many private schools. In public schools at the primary level, the main complaints are related to the lack of books or supplies, the fact that there are not enough teachers, the fact that facilities are in poor condition, the long distance to schools, and poor teaching. In private schools, low satisfaction is due to high fees and the lack of books or supplies. The rates of satisfaction in secondary schools are of the same order of magnitude than at the primary level and the complaints are similar

in both public and private schools. Satisfaction with tertiary education is also low, but there high fees are one of the main reasons for not being satisfied in both public and private schools.

The fact that the quality of the education services is limited is not surprising given the fact that in terms of budget, the Ministry of Education does not have adequate resources to provide basic inputs such as desks, textbooks, and pencils and notebooks to students in public primary schools. Thanks to user fees, secondary schools have more resources, but this works to the detriment of the very poor who often lack resources to pay these fees. Today, a large share of the education costs are borne by NGOs and donors, but budgetary pressures on the government are expected to increase in future years both because the government will probably progressively be expected to take on a larger share of the costs of the education system, and because enrollment in secondary schools will increase rapidly once larger cohorts complete their primary education.

Finally, the paper has provided an analysis of the determinants of school enrollment. Many findings are as expected, with orphans less likely to enroll, and children from better families (as proxied among others by the education level of the father) are more likely to enroll. One interesting result to inform policy is that the distances to primary and secondary schools have an impact on the probability to enroll, as expected, but even a substantial reduction in these distances that could be obtained through a program of building new schools would not lead to a dramatic increase in enrollment rates according to our estimations. This type of results underscores the complexity of designing a strategy for further progress in education in Liberia that is both ambitious, and affordable for the government and its partners.

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