Understanding Children's Work Project Working Paper Series, November 2006 - Revised 2008

Understanding Children's Work
An Inter-Agency Research Cooperation Project

Child labour and Education For All: an issue paper

L. Guarcello
S. Lyon
F. C. Rosati

Child labour and Education For All: an issue paper

L. Guarcello[*]
S. Lyon[*]
F.C. Rosati[**]

Working paper
November 2006
Revised June 2008

Understanding Children's Work (UCW) Project
University of Rome "Tor Vergata"
Faculty of Economics
Via Columbia 2 , 00133 Rome
Tel: +39 06.7259.5618
Fax: +39 06.2020.687
Email: info@ucw-project.org

As part of broader efforts towards durable solutions to child labor, the International Labour Organization (ILO), the United Nations Children's Fund (UNICEF), and the World Bank initiated the interagency Understanding Children's Work (UCW) project in December 2000. The project is guided by the Oslo Agenda for Action, which laid out the priorities for the international community in the fight against child labor. Through a variety of data collection, research, and assessment activities, the UCW project is broadly directed toward improving understanding of child labor, its causes and effects, how it can be measured, and effective policies for addressing it. For further information, see the project website at www.ucw-project.org.

This paper is part of the research carried out within UCW (Understanding Children's Work), a joint ILO, World Bank and UNICEF project. The views expressed here are those of the authors' and should not be attributed to the ILO, the World Bank, UNICEF or any of these agencies' member countries.

---

[*] UCW-Project
[**] UCW-Project and University of Rome "Tor Vergata"

Child labour and Education For All: an issue paper

Working Paper
November 2006
Revised June 2008

ABSTRACT

Education is a key element in the prevention of child labour; at the same time, child labour is one of the main obstacles to Education for All (EFA). Understanding the interplay between education and child labour is therefore critical to achieving both EFA and child labour elimination goals. This paper forms part of UCW broader efforts towards improving this understanding of education-child labour links, providing a brief overview of relevant research and key knowledge gaps. The study largely confirm the conventional wisdom that child labour harms children's ability to enter and survive in the school system, and makes it more difficult for children to derive educational benefit from schooling once in the system. The evidence also suggested that these negative effects are not limited to economic activity but also extend to household chores, and that the intensity of work (in economic activity or household chores) is particularly important in determining the impact of work on schooling. As regards the link between education provision and child labour, it pointed to the important role of inadequate schooling in keeping children out of the classroom and into work. This evidence indicated that both the school quality and school access can play an important role in household decisions concerning whether children study or work.

Child labour and Education For All: an issue paper

Working Paper
November 2006
Revised June 2008

CONTENTS

1. INTRODUCTION

1. The international community's efforts to achieve Education For All (EFA) and the progressive elimination of child labour are inextricably linked. Education – and, in particular, education of good quality up to the minimum age for entering into employment – is a key element in the prevention of child labour. There is broad consensus that the single most effective way to stem the flow of school age children into work is to extend and improve access to school, so that families have the opportunity to invest in their children's education and the returns to such an investment are greater than those associated with involving children in work. Conversely, when the expected returns to education are low or education costs are high, schooling is likely to be seen by households as a less attractive alternative to work for their children.

2. At the same time, child labour is one of the main obstacles to EFA, as involvement in child labour is generally at a cost to children's ability to attend and perform in school. According to UNESCO, there were 104 million children of primary-school going age not enrolled in school at the turn of the millennium, the majority of whom are working children. Child labour also adversely affects the academic achievement of the considerable number of children who combine work and school, often resulting in these children leaving school prematurely and entering into work.

3. Understanding the interplay between education and child labour is therefore critical to achieving both EFA and child labour elimination goals. This paper forms part of UCW broader efforts towards improving this understanding of education-child labour links, providing a brief overview of relevant research and key knowledge gaps.

4. The paper is structured as follows. The next section examines child labour as an obstacle to achieving EFA, reviewing descriptive and econometric evidence of the costs of child labour in terms of school entry, school survival and learning achievement. Section 3 then looks at education provision as a factor in child labour, reviewing empirical evidence of how school access and quality influence household decisions on the allocation of children's time between work and school. Section 3 also looks at information gaps that need to be filled in order to assess the potential of transitional education and flexible schooling initiatives in supporting national efforts towards EFA and child labour reduction. Section 4 concludes.

2. CHILD LABOUR AS AN OBSTACLE TO EDUCATION FOR ALL: HOW WORK AFFECTS CHILDREN'S ABILITY TO ATTEND AND BENEFIT FROM SCHOOLING

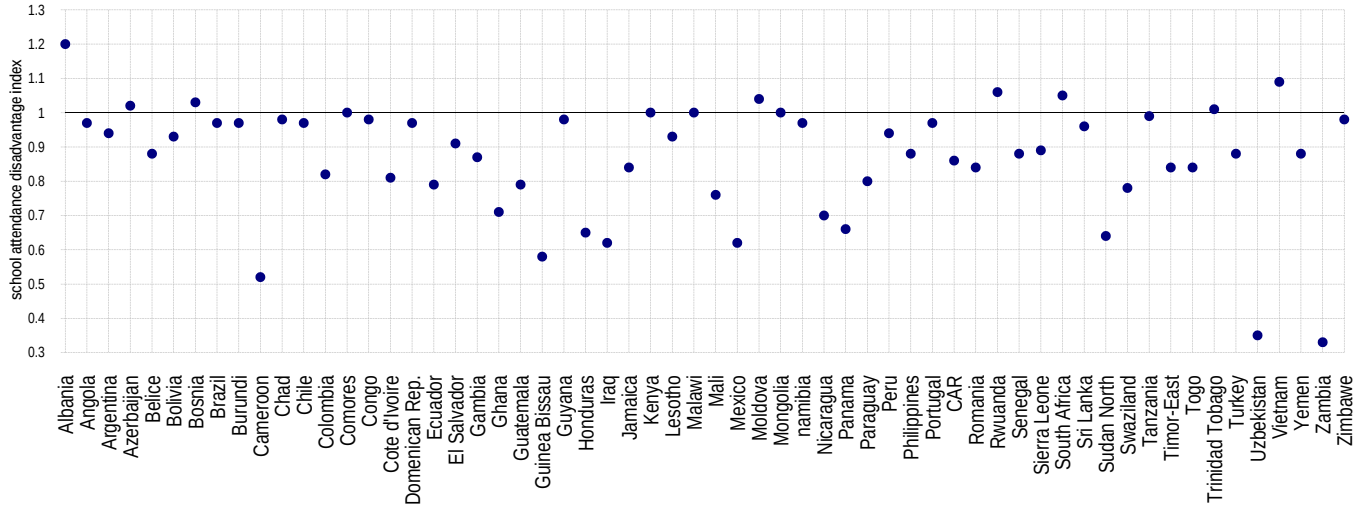
5. This section reviews evidence relating to the impact of work on school attendance, learning achievement and school life. It highlights the constraint that child labour poses to achieving Education For All. The section looks firstly at the effects of child labour on children's ability to enter and survive in the school system, and secondly at the effect of child labour on children's ability to derive educational benefit from schooling once in the system. Obviously, the two issues are closely related, but a distinction is useful for expositional purposes.

2.1 Child labour and school attendance: descriptive evidence

6. Working children are disadvantaged vis-à-vis their non-working counterparts in terms of their ability to attend school in many of the countries where child labour is common. As shown in Figure 1, in a sample of 60 developing countries from the UCW Country Statistics,[2] working children face an attendance disadvantage of at least 10 percent in 30 countries, of at least 20 percent in 16 countries and of at least 30 percent in 10 countries. In seven countries, on the other hand, working children actually have a slight attendance *advantage* and in five others the attendance rates of working and non-working children are virtually equal.

7. The wide cross-country variation in terms of the relative success of working children in attending school could reflect underlying differences in the nature or intensity of work carried out by children as well as structural differences in the way that education systems accommodate the exigencies of children's work.[3] To the extent that the latter explanation holds, the large cross-country variation suggests substantial scope for policy intervention aimed at bringing and retaining working children in school.

Figure 1. School attendance disadvantage[(a)] of working children, 7-14 years age group, selected countries



Notes: (a) School attendance disadvantage index refers to the school attendance rate of economically-active children expressed as a ratio of the school attendance rate of non-economically active children. The smaller is the index value, the higher is the disadvantage faced by economically-active children compared to children not involved in economic activity.

Source: UCW calculations based on household survey datasets

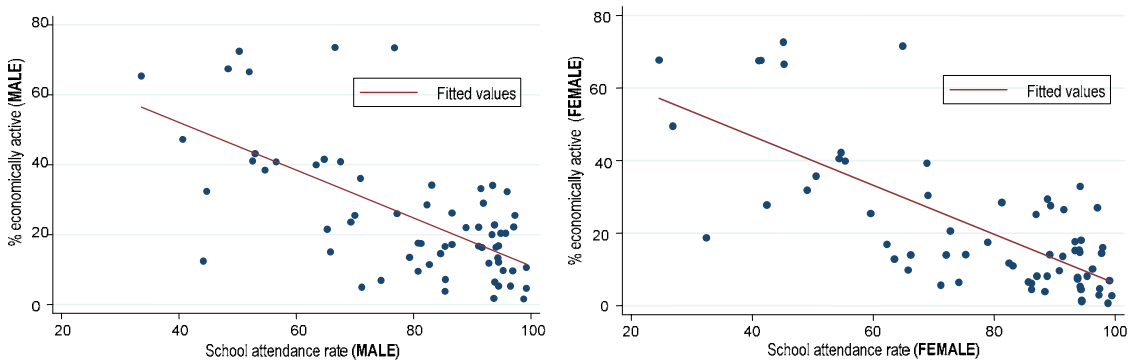
8. High levels of child labour therefore translate into large numbers of out-of-school children in many national contexts, which in turn means lower overall attendance rates and slower progress towards achieving Education For All (EFA). This negative correlation between child labour and overall school attendance is illustrated in Figure

[2] UCW Country Statistics consist of a core set of child labour and schooling indicators for over 70 countries. They are based on nationally-representative household surveys conducted as part of ILO/IPEC SIMPOC, UNICEF MICS, World Bank LSMS and national household survey programmes. The Country Statistics can be found at the UCW website (ucw-project.org).

[3] Readers should also note that differences in data sources and survey instruments mean that cross-country comparisons must be made with caution).

2, which plots rates of child economic activity and school attendance for boys and girls for countries included in the UCW Country Statistics.

Figure 2. School attendance[a] and child labour, children aged 7-14 years, by sex



Notes: (a) School attendance rate refers to the number of 7-14 year-olds attending school expressed as a percentage of total children in this age group.

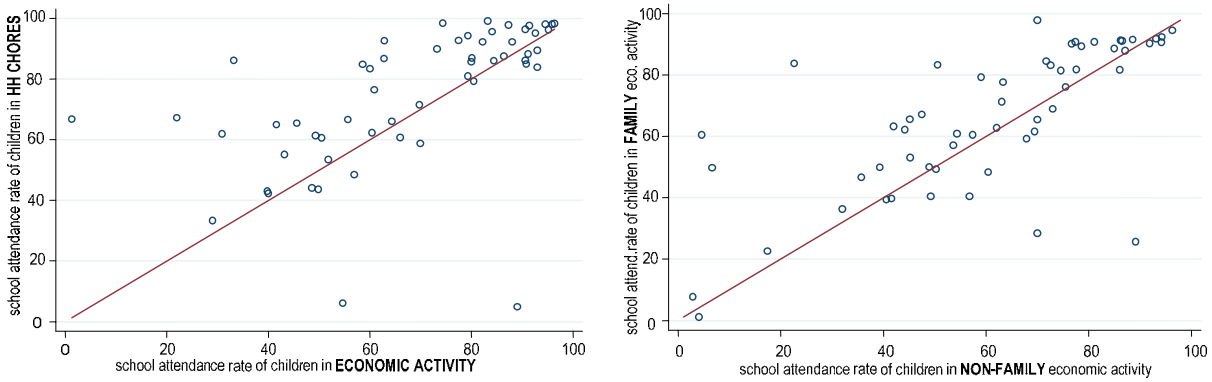
Sources: UCW calculations based on household survey datasets, various countries

9. The preceding figures make clear that reducing child labour will be critical to achieving EFA in many national contexts. But it is important to identify which work categories or work settings are most detrimental to children's school attendance in order to guide policy towards EFA. Figure 3 looks at differences in school attendance by general work category (i.e., economic or household chores) and by work setting (i.e., family or non-family). The figure suggests that both distinctions are potentially important.[4] Household chores appear to pose a lesser barrier to school attendance than economic activity, and family-based economic activity appears to interfere less with schooling than similar work performed outside the family. This may be because family work is more flexible to the exigencies of school, or because families have a greater interest in safeguarding their children's education.

10. But this evidence is only suggestive of possible differential impact of various forms of works on attendance and therefore should be interpreted with caution. Some of the children, for example, might be performing both economic and non economic activities or both family and non family work. It could also be that household chores and family-based economic activity are performed for fewer hours each week, leaving more time for going to school (the issue of work intensity and school attendance is looked at in the next section). More detailed evidence is required on the links between work category/setting and school attendance in order to draw firmer conclusions. Some of this evidence is presented later on, but more research is needed in this area.

[4] The left hand graph plots the school attendance rate of children involved in economic activity versus that of children involved in household chores, and right hand graph plots the school attendance rate of children in family work versus that of children in non-family work. For each graph, observations lying along the 45 degree line indicate that the attendance rate of the two groups being plotted is the same. If the observations lie above the 45 degree line, the attendance of the group plotted on the vertical axis is higher than the attendance of the group on the horizontal axis, while if the observations lie below the 45 degree line, the opposite holds true.

Figure 3. School attendance, work type (economic or household chores[(a)]), and work setting (family or non-family), children aged 7-14 years



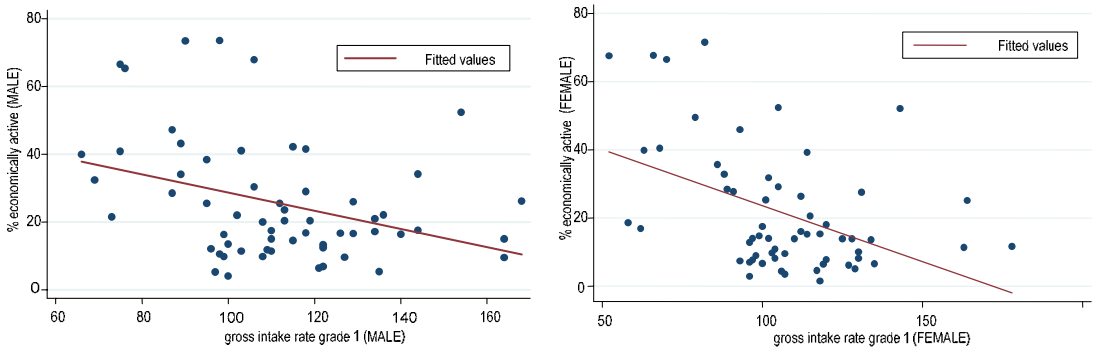
Notes: (a) Children carrying out household chore for at least one hour during the reference week;
Sources: UCW calculation based on household survey datasets, various countries

11. Information on the school history of non-student working children is also important in understanding the links between work and school attendance. Particularly relevant in this context is the distinction among out-of-school working children who are non school entrants (i.e., children never entering school), late entrants (i.e., children not yet enrolled but who eventually will be) and those who are early school leavers. The first group is undoubtedly worst off, denied the benefit of formal education altogether, and therefore constitutes a particular policy priority. As shown in Figure 4, in countries characterized by a relatively high prevalence of children's work in the age group 7-14 years, the ratio of children that enter school at any age is lower. This is an indication that the higher rate of children's work, the higher the number of children that never enter school. For instance, in the case of Ethiopia, 63% of children aged 10–14 have no formal schooling at all, and many more from this age group enter school after the official starting age of six years.

12. Figure 5 and Figure 6 suggest that late entrants and early leavers also form important components of the non-student working children population.[5] Children's work is associated with a smaller proportion of children entering school at the official entrance age (Figure 5) and with a higher proportion of children leaving the schooling system prematurely (Figure 6) All three effects – non-entrance, delayed entrance and early leaving – combine to reduce the total time working children spend in school (Figure 7). These results underscore the fact that attention needs to be given to analysing and addressing the role of children's work at *both ends* of the primary school cycle, i.e., to its role in preventing or delaying school entry and in children leaving school prematurely.

[5] Evidence suggests that the former is often contributing factor to the latter, i.e., late entrance increases the chances that children will also leave the school system prematurely. See, for example, UCW (2005b) Children's work in Cambodia: a challenge for growth and poverty reduction, June 2005

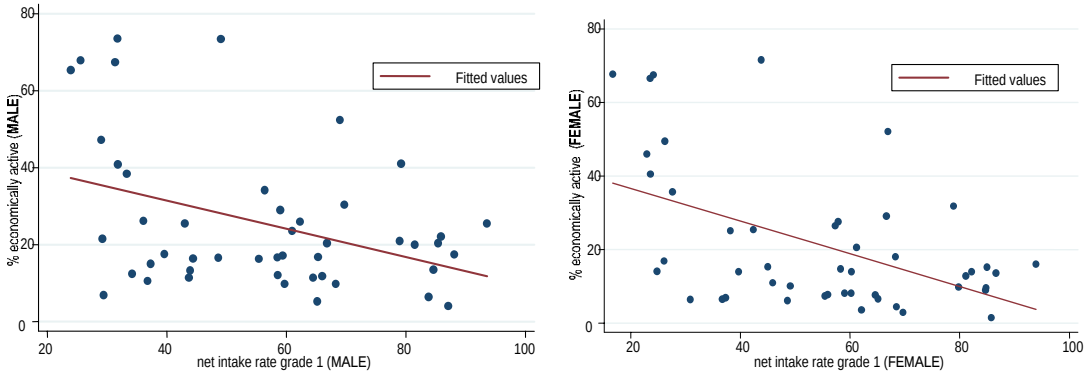
Figure 4. Gross school intake[a] and child labour, children aged 7-14 years, by sex



Notes: (a) *Gross intake rate grade 1* refers to the number of new entrants in the first grade of primary education regardless of age, expressed as a percentage of the population of the official primary school entrance age.

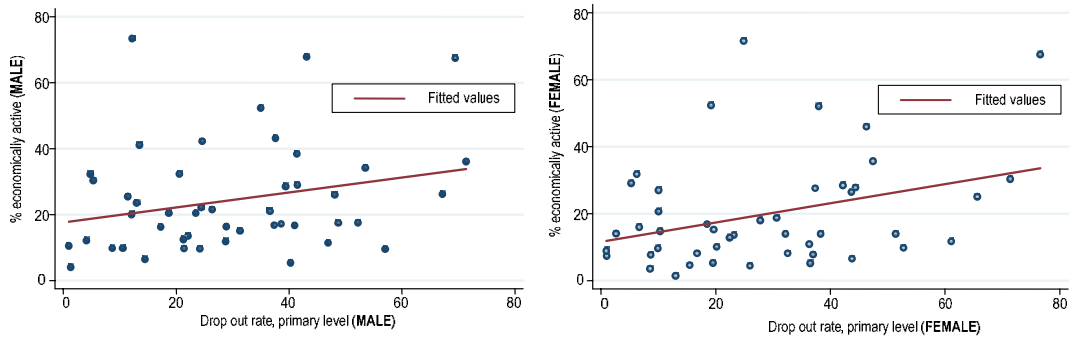
Sources: (1) UNESCO, EFA Global Monitoring Report 2005 (for gross intake rate); (2) UCW calculation based on household survey datasets, various countries (for economically-active children)

Figure 5. Net school intake[a] and child labour, children aged 7-14 years, by sex



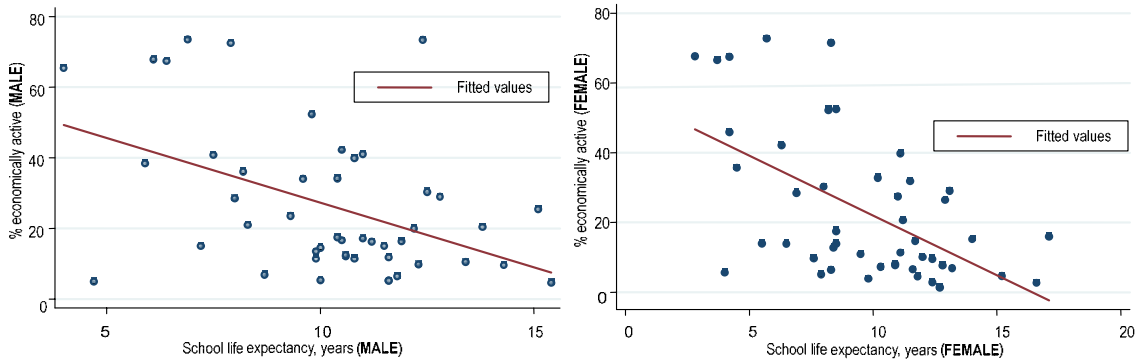
Notes: (a) *Net intake rate grade 1* refers to the number of new entrants in the first grade of primary education of the official primary school entrance age, expressed as a percentage of the population of the official primary school entrance age.
Sources: (1) UNESCO, EFA Global Monitoring Report 2005 (for gross intake rate); (2) UCW calculation based on household survey datasets, various countries (for economically-active children)

Figure 6. School drop-out[a] and child labour, children aged 7-14 years, by sex



Notes: (a) *Primary level drop-out rate* refers to the percentage of pupils or students who drop out from a given grade or grades in a given school year. It is the difference between 100% and the sum of the promotion and repetition rates.
Sources: (1) UNESCO, EFA Global Monitoring Report 2005 (for drop-out rate); (2) UCW calculation based on household survey datasets, various countries (for economically-active children)

Figure 7. School life expectancy[a] and child labour, children aged 7-14 years, by sex



Notes: (a) *School life expectancy (SLE)* refers to the number of years a child of school entrance age is expected to spend at school or university, including years spent on repetition.
Sources: (1) UNESCO, EFA Global Monitoring Report 2005 (for school life expectancy); (2) UCW calculation based on household survey datasets, various countries (for economically-active children)

13. A fourth, frequently overlooked, group of out-of-school working children is comprised of *irregular* school attendees (i.e., children formally enrolled school but not attending for extended periods of time). Little is known about the size of this group, owing to the fact that data on attendance regularity are rarely collected as part of household surveys or government education statistics. But the often large discrepancies between official school *enrolment* estimates (capturing children formally enrolled) and *attendance* estimates (capturing children actually in class) from household surveys suggest that this group of irregular attendees may be considerable in many countries. Evidence from school-based surveys also suggests that working children have more difficulty in attending class regularly in some contexts (ILO/IPEC and UCW, 2005a). It stands to reason, therefore, that at least part of the school attendance disadvantage of working children reported in Figure 1 is a reflection of the fact that working children are forced to miss class more frequently than their non-working counterparts.

2.2 Child labour and school attendance: causal links

14. In the previous section we presented descriptive evidence of the negative link between school attendance and child labour. But for policy purposes it is important to go beyond descriptive evidence to assess to what extent work involvement is a *cause* of low school attendance (and of poor learning achievement, as discussed in next section). While there has been considerable discussion of this issue in the literature [see for example, Grootaert and Patrinos (1999), and Pushkar and Ray (2002)], there have been very few analyses where the causal link between work involvement and school attendance is definitively identified.

15. Establishing causality is complicated by the fact that child labour and school attendance are usually the result of a joint decision on the part of the household, and by the fact that this decision may be influenced by possibly unobserved factors such as innate talent, family behavior and or family preferences. In fact, low returns to education, the poor quality of schooling or high monetary and non-monetary costs of schooling might make school attendance a less desirable than work for children.

Finally, one child's work might help to pay for his own or his siblings' schooling, so again child labor might paradoxically increase school attendance (Manacorda, 2006). This means that on the basis of cross-sectional data alone it is difficult to know, for example, if it is low talent that induces a child not to go to school and hence start to work, or if it is the preference or need to work that then induces a child to drop out of school.

The use of panel data can help to address at least some of these issues and to get firmer results in terms of causality. Panel data unfortunately remain scarce, constituting an important obstacle to informed policy design. Where these data are available, they underscore the importance of children's as an obstacle to schooling.

Table 1. Determinants of school attendance in China (random effects logistic regression)[(a)]

School attendance	Coef.	Std. Err.	z
Female	-0.114	0.082	-1.39
School attendance 1989	0.788*	0.104*	7.61*
Household size	-0.089**	0.035*	-2.54*
Number of children	-0.101	0.090	-1.12
Hours non-market wk	*-0.043**	*0.011**	*-3.89**
Age	0.999**	0.141**	7.1**
Age squared	-0.055**	0.006**	-9.33*
Household head female	0.170	0.132	1.29
Water access	0.255**	0.098**	2.61*

Notes: * statistically significant at the 5% level.

Source: UCW (2005a). *Towards statistical standards for children's non economic work: A discussion based on household survey data.* Guarcello L., Lyon S., Rosati F.C., and Valdivia C.

16. The effects of work on school attendance can also take a more indirect form. Work can lead to late school entry, which, in turn, is often associated with early school drop out and lack of completion of a course of study. Research in Cambodia illustrates this, indicating that work tends to delay school entry (or prevent it altogether), reducing the probability of completing primary school (UCW, 2005b). This effect is strongest for economic activities and for boys in Cambodia. Performing economic activity reduces the probability of entering school (as measured by the probability of entering school by age 14) of boys by 25 percent, and the probability of entering by the official school entry age by 17 percent. Non-economic activity also has a strong influence on school entry, again particularly for boys. Involvement in household chores makes it about 13 percent less likely that boys enter school by age six, and also about 13 percent less likely that boys enter school at all.

Table 2. Effect of work on school entry, by outcome and sex[(a)]

	Economic activity		Non-economic activity	
	Boys	Girls	Boys	Girls
School entry by age 14	-25.11*	-8.95	-12.60*	-4.70
School entry by age 6	-17.37*	-8.90	-13.23*	-5.60

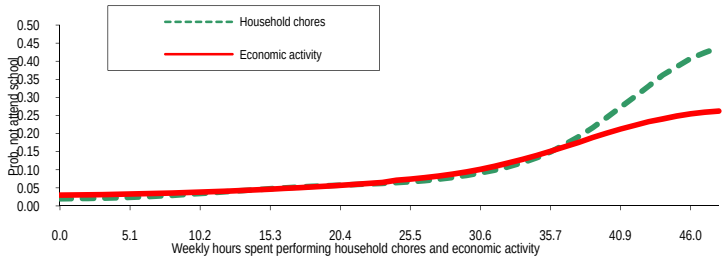
Notes: * statistically significant at the 5% level. (a) Reported figures measure the percentage change (expressed on a 0 to 100 scale) in the probability associated to each school entry outcome as a result of working at each age

Source: UCW (2005b) *Children's work in Cambodia: a challenge for growth and poverty reduction*.

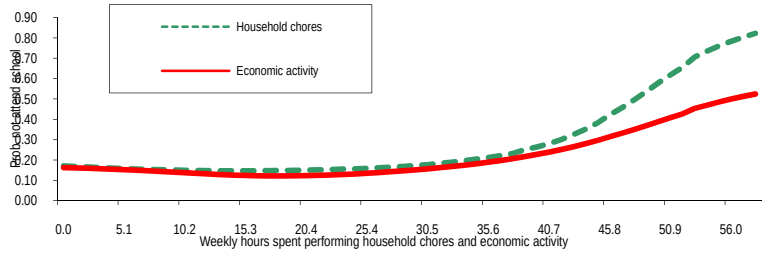
17. As discussed above, data limitations prevent us from presenting an easy replicable approach to identify the causal effects of work and of working hours on education. It is nonetheless possible to make use of synthetic indicators (kernel regression in the examples shown below) to offer a more direct and synthetic view of the relationship between hours of work and schooling for monitoring and policy design purposes. Instruments like these are suitable for describing the probabilistic link between variables, but cannot be used to derive strict causal relationships. They are basically reduced form estimates, and the relationship estimated is subject to change if the underlying structure changes (for example, if the gender distribution of employment changes). They must therefore be interpreted with care.

Figure 8. School non attendance versus hours spent performing household chores and economic activity, selected countries (Kernel regression)

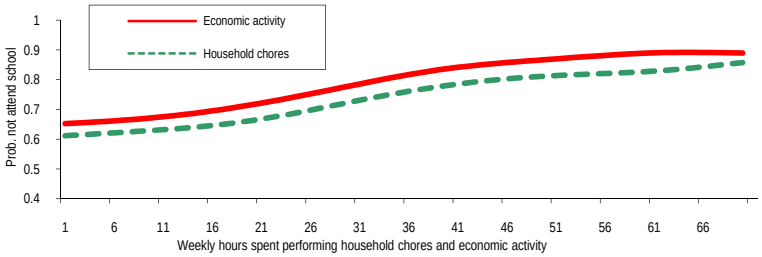
(a) Bolivia



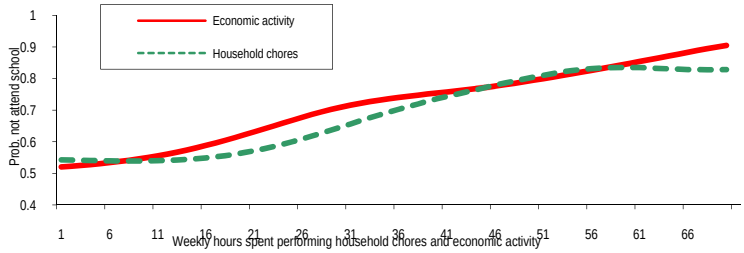
(b) Cambodia



(c) Mali



(d) Senegal



Source: UCW (2005). *Towards statistical standards for children's non economic work: A discussion based on household survey data.* Guarcello L., Lyon S., Rosati F.C., and Valdivia C.

18. Figure 8 presents the results of kernel regressions reflecting the relationship between hours of work and the probability of attending school for four countries (Bolivia, Mali, Cambodia and Senegal) (UCW, 2005a). The results provide further evidence that work and education are competing activities, indicating clearly that the probability of attending school declines with the increase of hours spent at work in both economic activity and household chores. But Figure 8 also indicates that the relationship between working hours and school attendance is very different across countries. For example, in Cambodia there is a reduction in the probability of attending school only if children work more than 30 hours a week, while in Senegal the probability of attending school begin to decrease if the working load exceeds 15 hours per week. More research is needed to assess what generates such differences and how they are related to school achievement (see also the following section).

19. The available evidence indicates that child work does negatively affect school attendance and school survival, and that this negative effect is not limited to economic activity, but extends also to household chores. The evidence also indicates that the length of the working day, in economic and non economic activity, is an essential dimension in assessing the detrimental effect of work on education. But more research is needed to improve understanding of the determinants of the link between child labour and school attendance. The relative importance and interplay of work-related factors (e.g., sector, intensity, setting, work schedule, etc.) and school-related factors (e.g., duration of the school day, flexibility of the school calendar, school distance, etc.) remain poorly understood, constituting an obstacle to identifying forms of work most disruptive of schooling as well as to designing policies aimed at making schooling and (benign) work more compatible. Much of the knowledge gap stems from the lack of adequate data, and specifically the lack of panel and retrospective data. This data gap is beginning to close as new panel surveys are underway or planned (e.g., Tanzania SIMPOC survey) and retrospective questions are increasingly included in SIMPOC and other survey questionnaires. In absence of

appropriate data, information can be gathered by alternative techniques such as the synthetic indicators presented above.

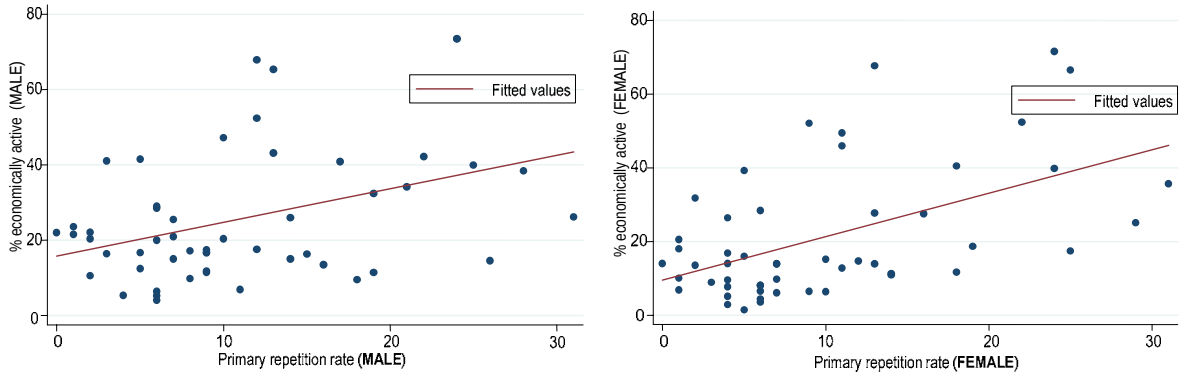
2.3 Child labour and learning achievement

20. The preceding sections presented evidence underscoring the role of child labour as a constraint to school attendance. But child labour is not only an obstacle to getting children into school but also to ensuring they that are able to learn effectively once there. While the group of working students has been subject of relatively little research, it stands to reason that children who are exhausted by the demands of work, or whose work schedule leaves them little time for homework, are less likely to derive educational benefit from their classroom time than their non-working counterparts. Working students may also have their interest directed away from academic pursuits, or be led to place less value on formal learning.

21. For all these reasons, school attendance alone is an incomplete indicator of the educational impact of child labour. There is also a need to measure the effect of child labour on actual classroom learning. Indeed, in terms of policy, it is learning achievement rather than school attendance that is of most relevance: the public or private return to investment in school is not realised if children fail to learn effectively while in the classroom. And school attendance and achievement are of course closely linked. A wide body of evidence indicates that children who perform poorly in the classroom or are forced to repeat grades are much more likely to leave the school system prematurely.

22. Grade repetition rates in the countries covered by the UCW Country Statistics provide indirect evidence of a link between child labour and school performance. Figure 1, which plots economic activity and primary level repetition rates, shows a positive correlation between child labour and repetition for boys and girls alike. This lends support to the conventional wisdom that working children are in a disadvantaged position in the classroom leaving them more prone to repetition, to the detriment of both the children concerned and to the internal efficiency of education systems. But repetition is an imprecise indicator of school performance at best: promotion criteria can differ widely across countries and indeed even across school districts and schools within countries. In addition, causality might run in the opposite direction: Manacorda (2008) using data form Uruguay also shows that school repetition leads to school drop out, hence potentially increasing the incentives for children to work.

Figure 9. Grade repetition[(a)] and child labour, children aged 7-14 years, by sex



Notes: (a) *Primary repetition rate* refers to the number of students enrolled in the same grade as in the previous year, expressed as a percentage of all students enrolled in primary school.

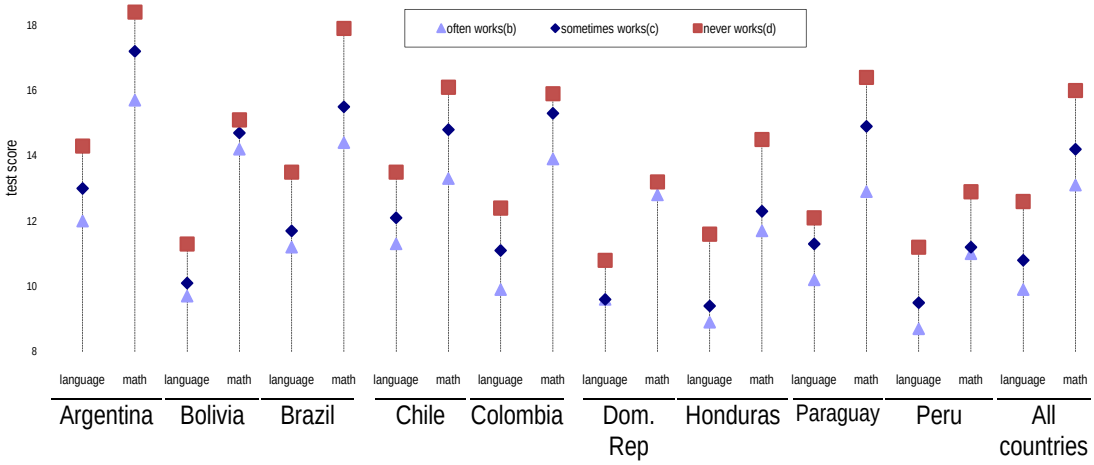
Sources: (1) UNESCO, EFA Global Monitoring Report 2005 (for primary repetition rate); (2) UCW calculation based on household survey datasets, various countries (for economically-active children)

23. Student test scores are for this reason a much better indicator for investigating links between child labour and learning achievement. The First Comparative International Study of Language, Mathematics and Associated Factors (FCIS) and the Third International Mathematics and Science Study (TIMSS) are among the most important of the very limited number of surveys containing information on student test scores matched with student work status. Household survey instruments typically used for analysing information on child labour, e.g., ILO/IPEC SIMPOC surveys, World Bank LSMS surveys and UNICEF MICS surveys, are poorly suited for collecting information on learning achievement, meaning that internationally comparable data beyond FCIS and TIMSS are limited.

24. Calculations by Gunnarsson *et al* (2006) based on the FCIS dataset show a strong and consistent pattern across all the nine countries and the two achievement tests included in the survey: third- and fourth-graders "almost never" involved in paid work outside the family[6] outperformed children involved in this form of work "only some of the time", who in turn outperformed children "often" involved in this work (Figure 10). The differences in performance by work status were very large. In math, for example, children almost never working in the nine countries scored 13 percent higher than children working some of the time, and 22 percent higher than children working often. Differences in language test scores were similarly large. The authors show that the strong negative relationship holds up even when possible child-, family- and school-related confounding factors (i.e., involvement in preschool education, parental education, home learning environment, class instruction time, classroom learning environment, compulsory education legislation, etc.) are controlled for and the possible endogeneity of work is taken into account (Table 3).

[6] The authors explain that they do not include work in the home in their empirical analysis because the lack of meaningful variation in home work meant that the pattern of test scores against home work intensity was unlikely to be reliable.

Figure 10. Third- and fourth-grade test scores,[a] by involvement in paid work outside the family, selected Latin America countries



Notes: (a) Simple mean test score over all children in the child labour group in the county.(b) Child often works outside the home when not in school. (c) Child sometimes works outside the home when not in school. (d) Child never works outside the home.

Source: Gunnarsson V., Orazem P.F. and Sanchez M.A., *Child labour and school achievement in Latin America*, 2006.

Table 3. Impact of paid work outside the home on school performance (least squares and instrumental variables equations on test scores)

Variable	Child Labour Exogenous[a]		Child Labour Endogenous[b]	
	Mathematics	Language	Mathematics	Language
Work outside	-1.184(0.051)*	-1.087(0.036) *	-7.603(1.248) *	-3.980(0.484) *
Beta coefficient[c]	[-0.159]	[-0.204]	[-0.408]	[-0.295]
Child				
Age	0.097(0.027) *	0.045(0.019) *	0.309(0.070) *	0.162(0.024) *
Boy	0.731(0.079) *	-0.165(0.056) *	2.480(0.358) *	0.679(0.155) *
No preschool	-0.256(0.093) *	-0.181(0.066) *	-0.376(0.088) *	-0.079(0.040) *
Parents/Household				
Parent education	0.327(0.036) *	0.280(0.026) *	-0.107(0.106)	0.134(0.042) *
Books at home	0.735(0.061)	0.497(0.042) *	0.196(0.100) *	0.258(0.037) *
School				
Spanish enrolment/100	-0.046(0.008) *	0.022(0.006) *	-0.079(0.010) *	0.007(0.005)
Inadequate classroom environment	-0.329(0.046) *	-0.357(0.031) *	0.073(0.096)	-0.140(0.038) *
Math/week (Spanish/week)	0.027(0.017)	0.022(0.006) *	-0.073(0.016) *	-0.049(0.012) *
Community				
Urban	0.730(0.107) *	0.240(0.076) *	1.847(0.225) *	0.794(0.117) *
Rural	-0.692(0.122) *	-0.893(0.087) *	1.641(0.410) *	0.275(0.202)
Constant	13.778(0.446) *	10.657(0.248) *	14.400(0.453)v	8.045(0.391) *
R^2	0.084	0.127	0.063	0.091
N	20699	20290	20699	20290

Notes: (a) Standard errors in parentheses. (b) Bootstrap standard errors in parentheses. (c) The beta coefficients indicates the number of standard deviation the test score will change from a one standard deviation increase in child labour. Regressions also include dummy variables controlling for missing values.
* statistically significant at 5% level.

Source: Gunnarsson V., Orazem P.F. and Sanchez M.A., *Child labour and school achievement in Latin America*, 2006.

25. Orazen and Gunnarsson (2004) report similar findings using data from 10 poorer countries[7] included in the TIMSS survey. Working more than one hour outside the home lowered seventh- and eighth-grade math scores by at least 10 percent and science scores by between 11 and 15 percent, again controlling for possible confounding factors and the endogeneity of work. Outside jobs performed for less than the one hour per day threshold, however, had only a very small effect on science scores and no effect on math scores, suggesting that it may not be work *per se* but rather the intensity of work that is most damaging to achievement. The study findings also suggest that work setting is an important factor in how work affects achievement: 1-2 hours per day of home-based work had a much smaller negative impact, lowering test scores by only 1-2 percent.

26. Orazen and Gunnarsson (2004) note that the adverse effects of child labour on the seventh- and eighth-graders in the TIMSS sample were much smaller than for the third- and fourth-graders in the FCIS sample, pointing to the possibility that work is more harmful to human capital development at younger ages when the building blocks for more advanced knowledge acquisition are established.

27. Other, country-specific, studies yield similar conclusions to those emerging from the FCIS and TIMSS survey datasets. ILO/IPEC and UCW (2005) found that while involvement in economic activity *per se* did not affect the school performance of children in Turkey, the intensity of economic activity did significantly influence test scores. Ten additional hours of work per week, for example, raised the probability of scoring "poorly" in mathematics by almost four percentage points. Heady (2000) found that work involvement had a significant negative effect on reading and mathematics learning in Ghana, even after controlling for innate ability as measured by the Raven's Test.

28. World Bank (2005), using test score data from a nationally representative survey of primary schools in Cambodia, reported that work had a significant detrimental effect on learning achievement, particularly among fourth-graders. Estimated models for literacy and numeracy test scores (including children, parental, household and schooling characteristics) indicated that working every day before going to school reduced literacy and numeracy test scores of Cambodian fourth-graders both by about nine percentage points (Table 5).

Table 4. Estimated impact of children's work on learning achievement, Cambodia[(a)]

	Grade 4		Grade 6	
	Literacy	Numeracy	Literacy	Numeracy
No school effects[(b)]	-13.6*	-16.2*	-8.1*	-9.3*
With school effects	-9.1*	-8.5*	-1.3	-1.1

Notes: (a) Reported figures measure the change in percentage points (on a 0 to 100 scale) in test scores resulting from working everyday before going to school.
* statistically significant at 5% level.

Source: World Bank (2005), Cambodia: Quality Basic Education for All.

29. The research evidence reviewed above clearly confirms the conventional wisdom that working students face unique learning difficulties in the classroom. But beyond

[7] The countries included were: Colombia, Czech Republic, Hungary, Iran, Latvia, Lithuania, Romania, Russia, Slovak Republic and Thailand.

this general conclusion, many questions concerning the nature of the relationship between work involvement and learning achievement remain unanswered. Knowledge gaps of particular relevance in terms of policy formulation include the relationship between work intensity and school performance; the extent to which certain types of children's productive activity by their nature are more damaging to school performance than others; the relative importance of work type and work intensity in influencing learning achievement; the degree to which work is more damaging to learning at younger ages; and direction of the causal relationship between work and school performance (i.e., the extent to which a child is a poor student because s/he works, or alternatively works because s/he is a poor student).

2.4 Child labour and schooling: Student and teacher perceptions

30. A series of five recent ILO-supported school-based surveys in Brazil, Kenya, Lebanon, Sri Lanka and Turkey capture the perceptions of teachers and of students themselves regarding how work affects various dimensions of the school experience (ILO 2003, 2004a, 2004b, 2004c, and 2004d). While the interpretation of the survey results is subject to a number of caveats,[8] the information they provide on student and teacher perceptions nonetheless adds another layer to the understanding of the relationship between work and schooling.

31. Survey feedback from students indicated that those working often had greater difficulties in attending class regularly (Brazil, Sri Lanka, Turkey), arriving at class on time (Sri Lanka, Turkey) and completing homework (Brazil, Kenya, Turkey), and that these difficulties generally increased with work intensity. Teachers also saw the learning of children as being frequently compromised by their involvement in work, citing differences between working and non-working children in areas such as class participation, homework completion, extra learning in the home, afterschool study, in addition to the areas listed by students. In Lebanon, where teachers were asked about student's psychological and physical health, they indicated that children working only in economic activity experienced recurring illness and depression more commonly than other groups of children.

32. Using pooled data from the Brazil, Turkey and Kenya school-based surveys, UCW and ILO/IPEC (2005) show that time in economic activity significantly affected the probability of children reporting missing classes and reporting feeling tired in class, even when controlling for child and household characteristics. In both cases, however, the magnitude of the effect was relatively small (Table 5).

[8] The survey results should be interpreted with caution for two main reasons: (1) Sample design: schools and children selected are not always representative at country level, so a selection bias might influence the results; and (2) Characteristics of working children: Children observed in the surveys worked a rather limited number of hours in most of the countries, and work tended to be concentrated in a few days a week. Average working hours are about five per week in Turkey, less than two per hours during weekdays in Lebanon; almost 80 percent of children work not more than 14 hours per week (including weekends) in Kenya. Obviously, there is a problem of endogenous truncation in these cases. We cannot observe children working long hours in school, as they might be out of school having dropped out or not enrolled. So we might not observe those children for whom the working deeply conflicts with schooling.

Table 5. Determinants of attendance regularity, classroom fatigue and drop-out intentions (pooled data for Brazil, Kenya and Turkey), marginal effects after probit estimation

Explanatory variable	Dependant variable			
	attendance regularity(1)		sleepiness(2)	
	dy/dx	z	dy/dx	z
Child age	0.159	1.05	0.2989	1.17
Child age squared	-0.005	-0.98	-0.0113	-1.18
Female child	-0.014	-1.53	-0.0025	-0.12
Mothers education level	0.009	0.56	-0.0106	-0.39
Fathers education	0.020	1.72	-0.0341	-1.06
Weekly hours in economic activity	0.001*	2.29*	0.0037*	5.10*
country_Brazil	0.178	3.9	0.4442*	10.14*
country_Kenya	0.056	3.16	-0.2249*	-9.46*
Weekly hours in household chores	0.000	0.25	0.0019	1.53

Notes: * Statistically significant at 5% level. (1) Dummy variable taking value of 1 if one or more classes missed and value of 0 otherwise. (2) Dummy variable taking value of 1 if student reported ever feeling sleepy in class and value of 0 otherwise.

Sources: UCW calculations based on data from Brazil school-based survey (*Child Labour and Education School Survey*, May 2004); Kenya school-based survey *(Child Work, School Attendance and Performance in Kenya*, April 2004); and Ankara school-based survey (*Light Work, Academic Performance and School Attendance of Children in Turkey*, Ankara, May 2004) as cited in ILO/IPEC and UCW Project, *Impact of Children's Work on School Attendance and Performance*: A Review of School Survey Evidence from Five Countries, March 2005.

33. The perceptions of both students and teachers in the five countries suggested that difficulties associated with work were largely limited to children performing economic activity rather than those performing household chores. Indeed, in many instances, children performing only household chores seemed to actually face fewer learning difficulties than children not working at all. Multivariate analysis also showed no significant relationship between time in household chores and the likelihood of learning difficulties (Table 5). One possible explanation for these findings is that children performing household chores are more responsible than their non-working counterparts and therefore more likely to take their studies seriously. Another is that the time use of children performing chores is supervised more closely by the elders in the home, helping to ensure adequate time is allocated to study.

3. EDUCATION PROVISION AS A FACTOR IN CHILD LABOUR: HOW INADEQUATE SCHOOLING CAN "PUSH" CHILDREN INTO WORK

34. In examining the relationship between school non-enrolment and child labour, the direction of causality is not always apparent. In some cases, children are "pushed" into work by poor quality, irrelevant or inaccessible schools, while in other cases children are "pulled" from school and into work by household poverty or other economic motives. The policy implications of this distinction are clear: where "push" factors prevail, supply-side policy measures targeting the school system hold particular promise for reducing child labour; where "pull" factors are relevant,

demand-side policy measures targeting the household are also needed for an effective response to child labour.

35. This section focuses on the former case, examining the push factors contributing to child labour. It reviews empirical evidence relating to the specific links between education access and quality, on one hand, and child labour, on the other. It also reviews research gaps that need to be filled to assess the potential of transitional education and flexible schooling in supporting national efforts towards EFA and child reduction goals.

3.1 Impact of supply constraints

36. School access has long been recognised as an important element in determining household choices concerning children's time use. A wide range of results are available showing that increased and eased access to school reduces children's work in both economic activities and household chores. The availability of a primary school within the village/community and distance from school in particular have significant effects on child work reduction. When households within the same village are compared though, distance to school appears to affect school attendance but not child labor (Kondylis and Manacorda, 2007, for Tanzania).

37. Even when school access constraints are limited to higher levels of schooling, they can be part of the reason why children do not attend school at all or drop out of the primary school. The most commonly used explanation for this finding is that returns to education tend to be much higher for (lower) secondary than for primary. Parents have hence an incentive to send their children to primary school rather than to work if they know that their offspring will also have access to (lower) secondary education, where the seed of the initial investment in human capital begin to bear fruit.

Table 6. Effects of travel time to school on children's activities[(a)]

Country	Sex/ residence	Work only		School only		Work and school		No Activities	
		Marginal effect	z	Marginal effect	z	Marginal effect	z	Marginal effect	z
Yemen	Male	0.0003*	8.4*	-0.002*	-12.6*	0.00	0.3	0.0017*	11.6*
	Female	0.0005*	8.0*	-0.003*	-17*	-0.00010*	-3.8*	0.0029*	14.8*
	Urban	0.0002*	4.1*	-0.001*	-5.2*	0.00010*	2.3*	0.0012*	4.5*
	Rural	0.0007*	11.2*	-0.003*	-19.5*	-0.00010*	-3.5*	0.0024*	16.0*
Morocco	Urban	.0002	0.96	-.003*	-2.42*	-7.79E-08	-0.22	.003*	2.41*
	Rural	0.001*	2.2*	-0.002*	-1.97*	0.00006	0.62	0.0002	0.26

Notes: * Statistically significant at 5% level.

Source: UCW calculations based on Yemen, NPS 1999; Morocco, LSMS 1998-99

Table 7. Effect of school availability in village/community on children's activity[(a)]

Country	Sex/ residence	School type/level	Work only		School only		Work and school		No Activities	
			Marginal effect	z	Marginal effect	z	Marginal effect	z	Marginal effect	z
Yemen	Male	basic school*	-0.0129*	-6.4*	0.059*	8.2*	-0.005*	-2.2*	-0.041*	-6.3*
		koranic school*	-0.0016	-1.0	0.005	0.7	-0.002	-0.8	-0.002	-0.3
		secondary school	-0.0027*	-2.0*	0.021*	3.6*	0.001	0.6	-0.019*	-3.7*
	Female	basic school*	-0.0058*	-2.0*	0.042*	5*	0.001	1.5	-0.037*	-4.4*
		koranic school*	-0.0162*	-6.0*	0.054*	7.3*	-0.002	-1.8	-0.036*	-4.9*
		secondary school	-0.0170*	-7.1*	0.082*	12.6*	0.001	0.8	-0.065*	-10.1*
	Urban	basic school*	-0.0020	-0.7	0.015	0.7	-0.001	-0.4	-0.012	-0.6
		koranic school*	-0.0003	-0.2	-0.018*	-2.0*	-0.002	-1.3	0.020*	2.3*
		secondary school	0.0015	0.8	0.000	0.0	0.002	0.9	-0.003	-0.2
	Rural	basic school*	-0.0258*	-6.4*	0.073*	9.1*	-0.001	-0.7	-0.046*	-5.7*
		koranic school*	-0.0005	-0.1	0.006	0.7	0.001	0.4	-0.007	-0.7
		secondary school	-0.0091*	-3.1*	0.036*	5.1*	0.001	0.5	-0.028	-4
Morocco	Rural	Primary school	-0.067*	-3.59*	0.123*	5.2*	0.003	1.1	-0.059*	-2.8*
Cambodia	Male	lower secondary school *	-0.005*	-2.0*	0.025*	2.6*	-0.019*	-2.0*	-0.001	-0.8
	Female	lower secondary school *	-0.007*	-2.1*	0.032*	2.3*	-0.024	-1.7	-0.002	-1.3
	Urban	lower secondary school *	0.001	0.3	-0.031	-1.5	0.030	1.5	-0.001	-0.3
	Rural	lower secondary school *	-0.007*	-2.1*	0.029*	2.7*	-0.021*	-2.0*	-0.001	-0.9

Notes: * Statistically significant at 5% level.

Source: UCW calculations based on Yemen, NPS 1999; Morocco, LSMS 1998-99; Cambodia, CSES 2003-2204, Cambodia EMIS 2003-2004

38. Table 6 and Table 7 report estimation results from recent UCW research (2003a, 2003b and 2006) and serve to illustrate the effects described above.[9] The results indicate that the availability of a school has well-defined impact on children's work, with some variation by sex and residence. The differences by sex appear to be country specific, while school availability is not surprisingly especially relevant in rural areas.

39. It should be noted, however, that in several cases increased school availability seems to increase school attendance by reducing the number of "inactive" children (i.e., those neither in school nor working) more than by reducing the number of working children. This seems to indicate that the decision to send children to work is not easy to reverse by reducing only the cost of accessing education. The same comments apply to effect of distance from school: reducing travel time to school does reduce child work, but appears to generate an increase in school attendance mainly by reducing the number of inactive children.

40. While the evidence on the effects to school on child work and on the other children activities is well established in general, more analysis is necessary in order to understand the reasons for the cross country differences by sex in these effects and, especially, the reasons for the differentiated effects on the various children's activities. This information is very important for policy design and for the selection of the appropriate policy mix. In particular, given the amount of existing evidence on the subject, it would be helpful to have it consolidated in a systematic overview aimed at

[9] A more detailed review of the literature on school access and child labour is beyond the scope of this paper.

understanding the difference in terms of impact by sex and by children's activities. It would be important to assess what are the conditions that affect the efficacy of improved access, especially in relation to the characteristics of the country, of the school system, etc.

41. Finally, even more important is to begin to move to the analysis in the direction of comparing the relative efficacy of the different interventions (see also the section on school quality) like access to school, school quality, income transfers etc., and of assessing the factors affecting efficacy. As school enrolment increases, the children (working or inactive) left out become increasingly more difficult to reach and the identification of effective and cost efficient policy mix gains in importance.

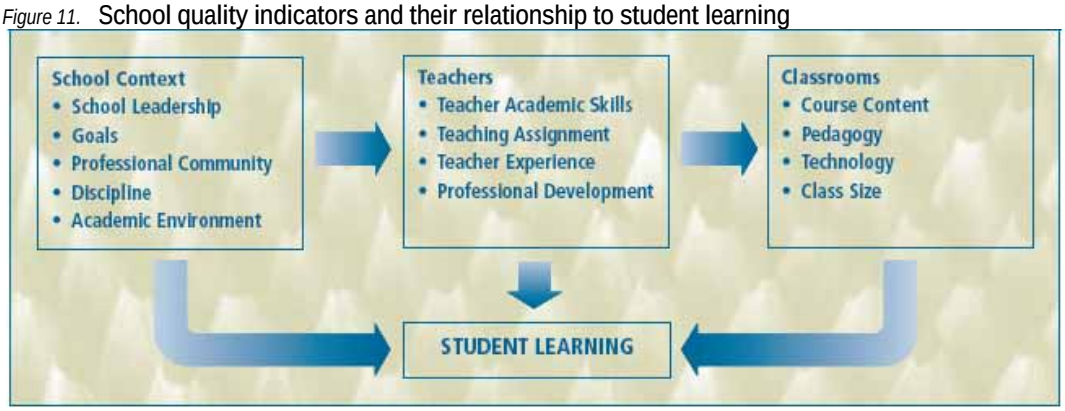
3.2 Impact of school quality

42. The quality of education is currently at the centre of the education reform debate. It also constitutes an important component of the EFA objectives, and an in-depth analysis of the link between quality of education and student achievements is contained in the 2005 EFA Report (UNESCO, 2005). This section discusses the role of school quality in determining school attendance and involvement in child work. Evidence of the effects of school quality on school attendance and, especially, on child labour, is limited. The little existing evidence has been reviewed in the 2005 EFA Report and in a companion paper developed by UCW (2006). This section therefore reports only on some recent results from UCW research and on remaining research gaps.

43. Before proceeding, it is worth noting that the issue of education quality is of particular policy relevance, as underlying it is the question of whether, in order to promote school enrolment and reduce child labour, providing "quality" education is necessary in addition to providing access to education. It is obvious that better quality education is preferable in general. It also clear that without adequate access, little benefits can be derived from improving quality. However, in many countries, a decision must be made on whether, at the margin, to use additional resources for improving access or quality.

44. There is strong evidence that school quality affects expected returns to education, thereby also influencing household decisions concerning investment in children's human capital. But there is much less defined view on what the constituents of school quality are, and on how to measure them for practical policy purposes.

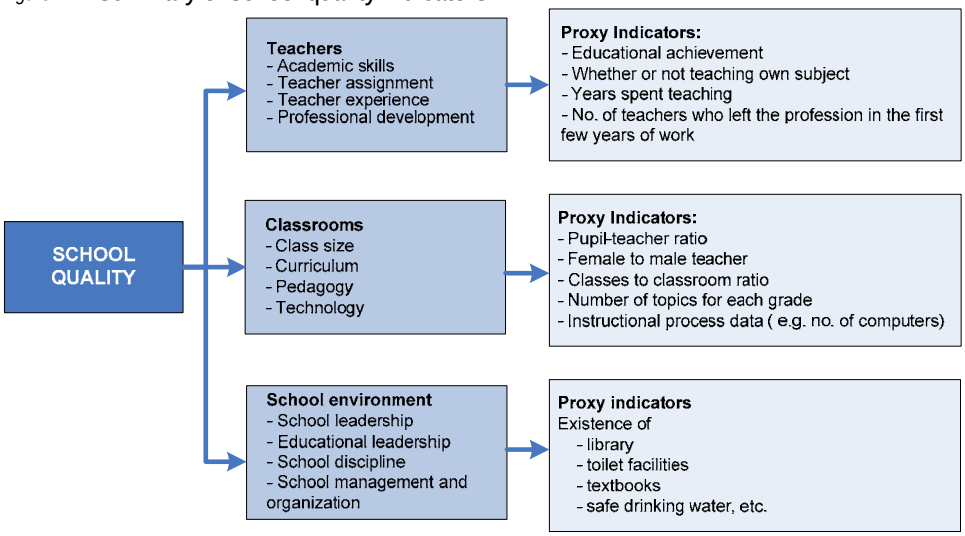
Figure 11. School quality indicators and their relationship to student learning



Source: U.S. Department of Education. National Center for Education Statistics. Monitoring School Quality: An Indicators Report, NCES 2001–030 by Daniel P. Mayer, John E. Mullens, and Mary T. Moore. John Ralph, Project Officer.Washington, DC: 2000.

45. But translating the complex relationships depicted in Figure 11 into measurable indicators is not straightforward. Figure 12 illustrates how a set of commonly-used indicators can be mapped back to this framework. As is easy to see, the proxy indicators used in empirical studies only partially reflect the main elements of school quality. In fact, the limited availability of satisfactory information on school quality is one of the areas that future research should address. Keeping in mind the problem of data availability, some evidence about the relationship between school quality and child labour is looked at below. A full review of the literature in this area is beyond the scope of this issues paper.

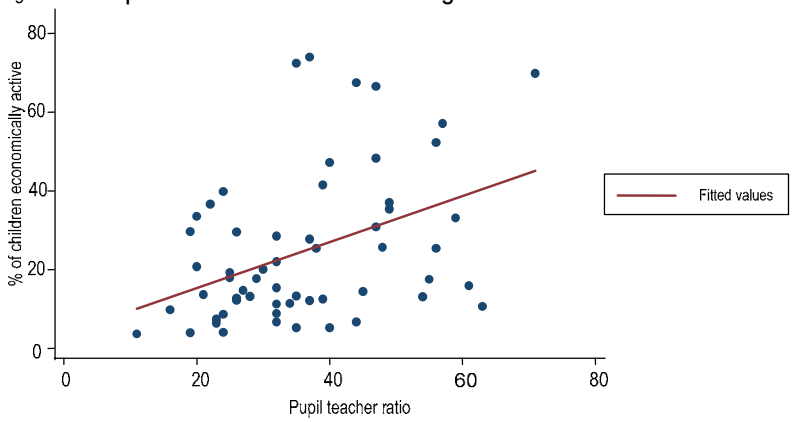
Figure 12. Summary of school quality indicators



46. What are the effects of school quality on child labour and school enrolment? A look at the cross country data for the few available indicators provides a suggestive but not very precise picture. Figure 13 shows that the pupil-teacher ratio is strongly and positively correlated with the percentage of working children. As the number of students per teacher increase, the percentage of working children in each country

rises. Not surprisingly, however, the variation is very large, as numerous other factors are also at play in determining children's work.

Figure 13. Pupil teacher ratio versus working children

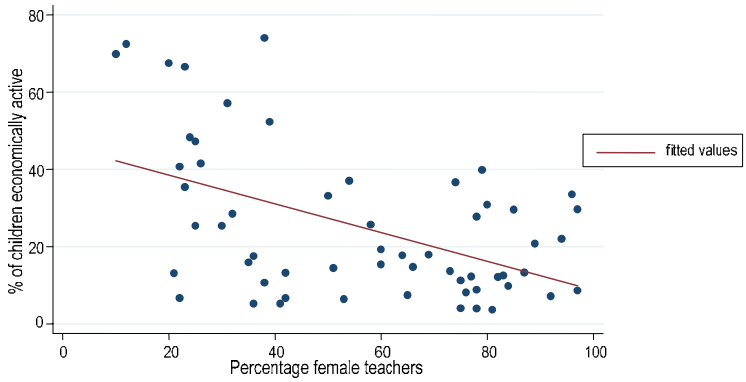


Sources: (1) UNESCO 2005 EFA Report (for pupil teacher ratio); (2) UCW calculation based on household survey, various countries (for working children)

47. The sex of the teacher also has an apparent influence on the level of child labour. Figure 14 depicts a negative relationship between the percentage of female teachers and the percentage of both male working children and female working children. Again, there is a wide range of variation, particularly at low levels of child economic activity. The link between the sex of the teacher and child labor might be explained at least in part by research indicating that pupils taught by female teachers perform better than pupils taught by male teachers (Postlethwaite T. N., 2004), thereby helping to prevent them from dropping out of school and entering work

48. It is interesting to note that in both Figure 13 and Figure 14 the dispersion around the regression line tends to decline as the percentage of working children for each country decrease. This suggests that school quality seems to matter more at relatively high levels of school attendance (and low levels of child work).

Figure 14. Presence of female teachers versus working children



Sources: (1) UNESCO 2005 EFA Report (for % female teachers); (2) UCW calculation based on household survey, various countries (for working children)

These descriptive results are suggestive of a potential role of school quality in addressing child labour. They are, however, far from identifying causal effects and cannot be used for policy formulation with any confidence. In cross country panel

analysis, which also takes into consideration the role of other variables, the results are not clearly defined[10]. In fact, the pupil-teacher ratio seems to be the only indicator, among the few available, for which a causal link with child work can be unambiguously established. While cross country evidence is useful, the lack of data on several relevant determinants of child work and the limited number of observations makes the use of micro data for a single country more robust.

Table 8. Impact of school quality on HH decisions regarding school and work, marginal effects after bivariate probit, Yemen[(a)]

Sex and residence	School quality Indicators	Economic activity only		School only		Combining economic activity and school		Neither in economic activity nor in school	
		Marginal effects	*z*	*Marginal effects*	*z*	*Marginal effects*	*z*	*Marginal effects*	*z*
Total	Male to female teacher ratio	0.0001*	2.6*	-0.0008*	-9.5*	-0.0001*	-3.8*	0.0008*	9.8*
	Classes to classroom ratio	0.0006	0.4	-0.0130*	-2.4*	-0.0014	-1.5	0.0138*	2.7*
Male	Male to female teacher ratio	0.00001	0.8	-0.0004*	-3.8*	-0.0001*	-2.4*	0.0005*	4.8*
	Classes to classroom ratio	-0.0008	-0.6	-0.0148*	-2.3*	-0.0062*	-3.2*	0.0218*	3.8*
Female	Male to female teacher ratio	0.0001*	2.8*	-0.0012*	-10.0*	-0.0001*	-3.8*	0.0011*	9.4*
	Classes to classroom ratio	0.0051*	2.0*	-0.0165*	-2.1*	0.0004*	0.5	0.0110	1.4
Urban	Male to female teacher ratio	0.00001	1.2	-0.0009*	-5.2*	0.00001	-0.9	0.0008*	5.3*
	Classes to classroom ratio	0.0029*	2.2*	0.0019	0.2	0.0037*	2.6*	-0.0085	-0.9
Rural	Male to female teacher ratio	0.0001*	2.1*	-0.0008*	-8.4*	-0.0001*	-4.3*	0.0008*	8.5*
	Classes to classroom ratio	-0.0016	-0.7	-0.0123*	-2.1*	-0.0033*	-2.7*	0.0171*	3.0*

Notes: * Statistically significant at 5 % level.
Source: UCW calculations based on Yemen National Poverty Survey, 1999 and Yemen School-based survey, 2000

[10] UCW (2006), *Does school quality matter for out of school children?,* UCW forthcoming working paper.

Table 9. *Impact of school quality on HH decisions regarding school and work, marginal effects after bivariate probit, Cambodia*

Sex and residence	School quality Indicators	Economic activity only		School only		Combining economic activity and school		Neither in economic activity nor in school	
		Marginal effects	z	Marginal effects	z	Marginal effects	z	Marginal effects	z
Total	Pupil teacher ratio	0.0001*	2.1*	-0.0007*	-3.4*	0.0006*	2.9*	0.00001	0.4
	% of primary schools with parent association	0.0060	1.0	-0.0140	-0.6	0.0056	0.3	0.00230	0.8
	% of primary school with libraries	-0.0161*	-4.2*	0.0311*	2.2*	-0.0085	-0.6	-0.00651*	-3.5*
Male	Pupil teacher ratio	0.0001*	2.0*	-0.0008*	-2.8*	0.0006*	2.3*	0.00002	0.8
	% of primary schools with parent association	0.0035	0.5	-0.0091	-0.3	0.0043	0.1	0.00133	0.4
	% of primary school with libraries	-0.0055	-1.2	0.0216	1.1	-0.0143	-0.7	-0.00178	-0.8
Female	Pupil teacher ratio	0.0001	0.9	-0.0006	-2.0	0.0005	1.8	-0.00001	-0.2
	% of primary schools with parent association	0.0091	1.0	-0.0181	-0.6	0.0053	0.2	0.00366	0.7
	% of primary school with libraries	-0.0278*	-4.5*	0.0412*	2.0*	-0.0011	-0.1	-0.01230*	-3.7*
Urban	Pupil teacher ratio	0.00001	-0.1	-0.0031*	-5.0*	0.0033	5.4	-0.0002*	-2.0*
	% of primary schools with parent association	0.0052	0.9	-0.0121	-0.3	0.0026	0.1	0.0043	0.9
	% of primary school with libraries	-0.0116*	-2.5*	0.0910*	3.1*	-0.0735*	-2.6*	-0.0059	-1.5
Rural	Pupil teacher ratio	0.0001*	2.0*	-0.0004*	-2.0*	0.0003	1.4	0.0000	1.0
	% of primary schools with parent association	0.0043	0.5	-0.0274	-1.1	0.0229	0.9	0.0002	0.1
	% of primary school woth libraries	-0.0178*	-3.6*	0.0098	0.6	0.0153	1.0	-0.0073*	-3.5*

Notes: * Statistically significant at 5% level.
Source: UCW calculations based on Cambodia CSES 2003-04 and Cambodia EMIS 2003-04

49. Table 8 and Table 9 present the results of a recent UCW study on school quality and child labour based on microdata from Yemen and Cambodia.[11] In Yemen, both the male to female teacher ratio and the classes to classroom ratio appear significant in determining the time use patterns of children. Both quality indicators appear to be relevant in determining school attendance in particular. In Cambodia, among the several indicators of school quality which were available, only two appear to be significant: the pupil to teacher ratio and the percentage of primary schools with a library. In sum, the evidence from Yemen and Cambodia indicates that quality of education does indeed matter for child labour and school attendance. However, the effects of school quality appears to be relatively "small", with large improvement in school quality potentially leading to only moderate reductions in child work and increases in school attendance.

50. Several qualifications and further research and analysis is necessary before we can go beyond the general statement that school quality matters for child labour. First, as mentioned above, more and better information is needed on school quality indicators. A systematic effort at the international level should possibly be developed to design and collect such indicators. More analysis is also needed comparing the effects of school access with those of school quality to be able to formulate

[11] UCW (2006), *Does school quality matter for out of school children?,* UCW forthcoming working paper.

recommendations on the appropriate policy mix between the two. Finally, if the results presented above are taken at face value, there is a need for further investigation into the effects of school quality in retaining children in school and in avoiding early drop out. (Preliminary fragmentary evidence seems in fact to indicate that school quality is more effective in retaining children to school rather in attracting them to it for the first time).

3.3 Impact of special transitional education and flexible schooling programme on child labour

51. The previous sections highlighted the important role of school access and school quality in determining school attendance and children's involvement in work. Special transitional education (TE)[12] and flexible schooling (FS)[13] programmes constitute a third important supply-side element influencing child labour and school attendance outcomes in many national contexts. Such programs can take numerous forms, with some serving as a bridge to entry or re-entry into the formal education system and others serving as sources of remedial support or special needs education within the formal system. Still others are designed to make the schooling system for accommodating of children's work exigencies and schedules. They are all based on the premise that child labourers need special support in order to ensure that, once in school, they remain there and are able to learn effectively.

52. Information on transitional education and flexible schooling programmes unfortunately remains very limited. Little is known about the difference they are making in reducing the exclusion from education of working children, about which and how many child labourers are being reached, and with what impact. This limits the lessons that current TE and FS efforts offer in terms of which policy approaches are most effective or are best candidates for broad-scale replication. This section briefly examines some of the research priorities and information gaps that need to be filled in order to assess the potential of transitional education and flexible schooling in supporting national efforts towards EFA and child labour reduction.

---

[12] Transitional education programs are aimed at smoothing the transition of child labourers and other vulnerable children into the formal school system. They are based on the premise that child labourers are often difficult to insert directly (back) into the formal education system because of their age, different life experiences and lack of familiarity with the school environment. International programming experience points to two main policy options for easing the transition of child labourers back into the formal school system (a) remedial education, providing returning children and child labourers with special remedial support within the regular classroom context; and (b) "bridging" education, involving intensive compensatory or "catch-up" courses designed to raise academic proficiency, offered in either non-formal community schools or in school facilities prior to, during or after regular classes.

[13] Flexible schooling programs are targeted specifically to working children, and are designed to make school more accommodating of the exigencies of work. These programs are not therefore aimed primarily at reducing child work per se, but rather at increasing school attendance and reducing drop-out among child labourers. Flexible schooling programs are designed to balance the learning and earning needs of families and children by facilitating fluid work/study schedules. They encompass formal, non-formal and work-based learning arrangements, and, ideally, help children who need or want to work to move back and forth between systems considered to be equally valid, rather than one the "poor cousin" of the other. International programming experience points to three main policy options for helping children to combine work and school more easily: (a) flexible delivery modes, designed to make schooling more accommodative of children's work schedules; (b) adaptive curricula, designed to make course contents more relevant to the lives of working children; and (c) substitute non-formal education, designed to impart basic literacy, numeracy and life skills at times not in conflict with work.

53. A systematic mapping of the wide variety of policy and programmes experiences in both transitional education and flexible schooling is needed as a first step towards the identification of good practices. These programmes have taken a wide variety of forms, either because of trying to address different needs or because of using different approaches to address the same need. There is now a substantial body of programme experience that could be used to compile a set of good practices and/or guidelines for action. Such a mapping would need to bring together information on a wide variety of qualitative and quantitative variables.[14] The mapping of TE and FS programmes would also need to aim at providing an assessment of the relative dimension of the programmes, in order to obtain a picture not only of the instruments used, but also of the distribution of resources invested. It would useful to compare the amount of resources invested in TE and FS programmes with those utilised in other strategies to cope with the needs of working children.

54. While piloting should ideally be short-term and catalytic, testing models which can then be mainstreamed into national policies and replicated on a broader scale, this mainstreaming and replication does not appear to be occurring in the case of many TE and FS pilot programmes for working children. Why are these programs typically of limited coverage? Answering this question will be critical to assessing the potential of these programmes as vehicles for addressing the education rights of out-of-school working children. The following areas of research seem of particular relevance in this context: identification of the approaches suitable for scaling up, also looking at international experience on the few large scale programs; the challenges of scaling up (bottlenecks, institutional constraints, political constraints, the need for community mobilization, the need for systematic evaluation of pilot experience to guide scaling up, etc); links between non formal education, vocational training and labor market outcomes; and how to address the issue of the links between the formal and non formal education systems when the latter is of large scale.

55. Evaluations of TE and FS initiatives are relatively scarce, and more attention is needed to piloting methodologically-sound evaluation studies. There are two main directions that the researcher could follow: a) look for existing data that, through matching with programme information, would allow reliable estimate; b) try to address the issue at the source by designing and implementing the necessary data collection jointly with the implementation of a programme. While care is necessary in designing such data collection, the costs of the research are not necessarily large. Treatment and control groups can be limited in size, especially if the program is also of limited scope (e.g. limited coverage area, small target group, etc.), but still convey very useful quantitative information on the impact of the program. Evaluation criteria should include the following: programme sustainability, with special attention to the issue of integration with the main education system or through other institutional channels; programme replicability, i.e., the extent to which the approach followed is dependent on local factors, thereby limiting its applicability to other contexts; learning outcomes, i.e., student achievement tests including changes, positive or negative, in the outcomes of other, non-beneficiary students; and school survival, i.e., the extent to which TE and FS programmes succeed in retaining child laborers in the education system.

---

[14] Including, for example, geographical distribution; classification of programme by type of provider (e.g., community/faith-based, private, public or mixed); pedagogical approach; geographic coverage; beneficiary population; number of teachers/instructors; per unit costs; services provided (e.g., accelerated "catch-up" learning, specific skills training, basic literacy and numeracy, etc.); physical facilities and instructional materials; management structure; and stakeholder involvement.

56. Many non-formal TE initiatives have been criticized for creating a second, inferior, education track for working children, and not acting as bridges to (re)entry into the formal system. While stand-alone non-formal education programs may be appropriate for older, long-term drop-outs, there seems to be some consensus that the overarching emphasis of transitional education should be equipping children to enter and succeed in regular schooling. A critical review of the work and experiences that have led to this consensus and, eventually, a critical reappraisal of its main conclusion would be of interest. This could possibly lead to an assessment of the role of nonformal vis-à-vis the formal education system and to a clear identification of the relative roles of the two systems. It would be of interest to identify the situations in which experience and theory shows that the best interest of the children and youth is achieved without mainstreaming non-formal efforts in the formal education system (e.g. older children, children that have suffered severe physical or psychological health damages, children that need reintegration also from traumatic experiences like child soldiers).

4. CONCLUSION

57. The preceding sections provided a brief overview of research evidence concerning the interplay between education and child labour. It also identified areas where further research is needed to help guide policy towards the related goals of EFA and child labour elimination.

58. Evidence reviewed of the impact of work on school attendance and performance underscored the constraint that child labour poses to achieving Education For All. This evidence largely confirmed the conventional wisdom that child labour harms children's ability to enter and survive in the school system, and makes it more difficult for children to derive educational benefit from schooling once in the system. The evidence also suggested that these negative effects are not limited to economic activity but also extend to household chores, and that the intensity of work (in economic activity or household chores) is a particularly important in determining the impact of work on schooling.

59. But beyond these general conclusions, many questions concerning the nature of the relationship between work involvement and education remain unanswered in the research literature. We need first of all more knowledge about the effect of work on school entry and survival. There is a specific need to open the “black box” of child work, and look more closely at the effect of different forms of work on enrolling and staying in school. For example, a lot can be potentially learned by looking at the factors underlying the large cross-country variation in terms of the ability of child labourers to combine school and work, and in particular by looking at the extent to which these differences are institutional or policy related. More research is also needed on learning achievement, and on how both school and work conditions affect the ability of working student to perform in the classroom.

60. Research questions of particular relevance for identifying forms of work most disruptive of schooling as well as for designing policies aimed at making schooling and (benign) work more compatible include the following:

- *work setting and schooling*: the degree to which work performed within a family setting is less disruptive to schooling than work performed outside the family environment;

- *work intensity and schooling*: the degree to which schooling is only compromised by work performed beyond a particular daily or weekly hours threshold (i.e., whether it is work *per se* or only work performing intensively that is detrimental to schooling);
- *work type and schooling:* the extent to which certain types of children's productive activity by their nature are more damaging to school attendance and performance than others;
- *interplay among work characteristics*: the relative importance of different work characteristics (setting, intensity, type, etc.) in influencing schooling attendance and performance, and the interplay among work characteristics;
- *child age, work and schooling*: the degree to which work is more damaging to learning at younger ages;
- *innate ability, work and schooling:* the extent to which a child is a poor student because s/he works, or alternatively works because s/he is a poor student; and
- *cross-country variation in terms of how work effects schooling:* reasons for the large differences across countries in terms of the ability of working children to attend and perform in school.

61. Evidence reviewed in the preceding sections concerning the link between education provision and child labour pointed to the important role of inadequate schooling in keeping children out of the classroom and into work. This evidence indicated that both the school quality and school access can play an important role in household decisions concerning whether children study or work. But again, considerable further research is necessary before it is possible to go beyond the general statement that school access and school quality matter for child labour. Better information is needed regarding how access and quality (and their interaction) affect household decisions in order to identify the best mix between quality and access policy measures. It is also necessary to assess whether the main effect of school quality is in improved retention or higher rates of entry. The analysis of the effects of school quality requires better data reflecting the main elements of school quality.

62. Areas of further research of particular relevance to identifying supply-side policies for reducing child labour and raising school attendance include the following:

- *factors affecting the efficacy of improved schooling access*: reasons for the large cross-country variations in terms of how improved school access affects school attendance and child labour;
- *measuring school quality*: developing proxy indicators reflecting the main elements of school quality, and using these indicators to provide a more complete picture of links between school quality and child labour;
- *impact of access and quality interventions:* assessing the relative efficacy of access and quality interventions in order to formulate recommendations on the appropriate policy mix between access and quality;
- *school quality and retention*: the effects of school quality in retaining children in school and in avoiding drop out, in view of preliminary fragmentary evidence suggesting that school quality might be more relevant in terms of retaining children in school rather in attracting them to it for the first time; and
- *relative importance of "push" and "pull" factors*: the degree to which children are "pushed" into work by poor quality, irrelevant or inaccessible schools, or,

alternatively, children are "pulled" from school and into work by household poverty or other economic motives.

63. The paper dealt with special transitional education (TE) and flexible schooling (FS) programmes as other important supply-side elements influencing child labour and school attendance outcomes in many national contexts. Information on transitional education and flexible schooling programmes unfortunately remains scarce, limiting the lessons that current TE and FS efforts offer in terms of which policy approaches are most effective or are best candidates for broad-scale replication. Further research is needed, *inter alia*, about the difference these programmes are making in reducing the exclusion from education of working children, about which and how many child labourers are being reached, and about why these programmes have for the most part been unable to expand to scale. The role of non-formal education strategies generally in supporting national efforts towards EFA and child labour reduction as needs to be assessed.

REFERENCES

Cigno, A. and F.C. Rosati (2005): "The economics of child labour", Oxford University Press

Guarcello, L., Lyon S. and F.C. Rosati (2006): "Does School Quality matter for Working Children?" *UCW forthcoming working paper.*

Gunnarsson V. Orazem P. and Sanchez M. (2006): "Child labour and school achievement in Latin America". *World Bank Economic Review* , Vol. 20, 1, pp. 31-54, January.

Heady C. (2000): "What is the effect of child labour on learning achievement? Evidence from Ghana." *Innocenti Working Papers*, no. 79.

Kondylis F. and M. Manacorda (2007), 'School Proximity and Child Labor: Evidence from Rural Tanzania', mimeo, London School of Economics, 2007.

ILO/IPEC (2003): "*Child Work, School Attendance and Performance: Case Study, Colombo*." Gunawardena et al, September 2003

ILO/IPEC (2004a): "Brazil Child Labour and Education School Survey", unpublished.

ILO/IPEC (2004b): "Child Work, School Attendance and Performance in Kenya", unpublished

ILO/IPEC (2004c): "Impact of Child Work on School Attendance and Performance in Lebanon." Consultation and Research Institute, unpublished.

ILO/IPEC (2004d): "Light Work, Academic Performance and School Attendance of Children in Turkey", unpublished, Ankara, May 2004.

ILO/IPEC and UCW Project (2005): "Impact of Children's Work on School Attendance and Performance: A Review of School Survey Evidence from Five Countries."

Manacorda, M. (2006), "Child Labor and the Labor Supply of Other Household Members: Evidence from 1920 America", *American Economic Review*, December 2006, 96(5) 1788-1800.

Manacorda, M. (2008), The Cost of Grade Retention', mimeo, London School of Economics, 2008.

Orazem P. and Gunnarsson V. (2004): "Child Labour, School Attendance and Performance: A Review." Iowa State University, *Department of Economics Working Papers Series # 04001*.

Postlethwaite T. N. (2004): "What do International Assessment Studies tell us about the Quality of School Systems? Background paper for EFA Global Monitoring Report 2005."

UCW (2003a): "Understanding Children's work in Yemen." *Inter-agency report to the Government of Yemen,* Sana'a, March 2003.

UCW (2003b): "Understanding Children's work in Morocco." *Inter-agency report to the Government of Morocco,* Rabat, March 2003.

UCW (2005a): "Towards statistical standards for children's non economic work: A discussion based on household survey data."

UCW (2005b): "Children's work in Cambodia: a challenge for growth and poverty reduction." *Inter-agency report to the Government of Cambodia,* Phnom Penh, June 2005.

UNESCO (2005): "EFA Global Monitoring Report – The quality imperative." UNESCO, Institute for Statistics, 2005

U.S. Department of Education (2000): "Monitoring School Quality: An Indicators Report." National Center for Education Statistics. Daniel P. Mayer, John E. Mullens, and Mary T. Moore. Washington, DC, 2000.

World Bank (2005): " Cambodia Education Quality For All." World Bank, Washington DC, January 2005