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THE PRICE OF EXCLUSION:
DISABILITY AND EDUCATION

THE CHALLENGE OF INCLUSIVE EDUCATION IN SUB-SAHARAN AFRICA

QUENTIN WODON, CHATA MALE, CLAUDIO MONTENEGRO, AND ADA NAYIHOUBA
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BACKGROUND TO THIS SERIES

More than one billion people may experience some form of disability. Of those, up to one in five may experience significant disabilities. Individuals with disabilities have on average worse socioeconomic outcomes than those without disabilities. They often have poorer health, lower levels of employment and earnings, and higher poverty rates. In developing countries, the prevalence of disability and its impacts on a wide range of development outcomes are typically larger.

Children with disabilities are especially at a disadvantage in terms of school enrollment, educational attainment, and learning. This is especially the case in low income countries and sub-Saharan Africa, the region on which this note focuses where disability gaps in educational attainment are increasing and affordability and other constraints lead many children with disabilities to never enroll in school or drop out prematurely. They also often learn less while in school. Ensuring that these children have the same opportunities as other children is a challenge, but also an opportunity, in that inclusive education may bring benefits to all children, and not only those with disabilities.

Awareness of the need for inclusive education systems is increasing. The United Nations Convention on the Rights of Persons with Disabilities has been ratified by 177 countries. It calls for full integration of persons with disabilities in societies. Several targets in the Sustainable Development Goals are related to disabilities, including with respect to inclusive education. However, at the country level, and especially in low and middle-income countries, resources are often lacking to effectively promote inclusive education.

This note is part of a series on The Price of Exclusion: Disability and Education prepared as part of broader work program on children with disabilities that benefited from funding from USAID. Previous global work for this series benefited from support from the Global Partnership for Education. The series documents gaps in education outcomes between children with and without disabilities. It also showcases examples of programs and policies and lessons from the literature on how to improve inclusion in education systems.

KEY MESSAGES

The challenge of achieving inclusive education for sub-Saharan Africa is massive, but conversely the opportunities that inclusive education could provide are major as well. This note provides an analysis of gaps in educational opportunities for children with disabilities in sub-Saharan Africa. Five main outcomes are considered: whether children ever enroll in school, are literate, complete their primary education, complete their secondary education, and perform well in school. In addition, the note measures the coverage of a small number of programs in schools towards inclusive education, and it measures the returns to investing in the education of children with disabilities. These returns are high. Therefore, apart from the fact that all children have a basic right to education, the economic case for investing in the education of children with disabilities is strong as well. Key findings are as follows.

ENROLLMENT IN SCHOOL, EDUCATIONAL ATTAINMENT, AND LITERACY

- › The Sustainable Development Goals (SDGs) call for ensuring inclusive and quality education for all and promoting lifelong learning (Goal 4). The SDGs explicitly mention equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities. Unfortunately, gaps in education outcomes between children with and without disabilities are large, and they appear to have increased over time.
- › For children without disabilities, completion rates at the primary level have increased substantially over the last few decades. Smaller gains have been observed for children with disabilities. As a result, the gap in primary completion rates between children with and without disabilities has increased over time, reaching 13 points for boys and 10 points for girls according to the latest publicly available census data for 11 countries.
- › Many children with disabilities are never enrolled in school. Among children aged 12, the likelihood of having ever enrolled in school was 10 percentage points lower for children with disabilities versus children without disabilities at the time of the latest available census data. As for primary education, the disability gap in ever enrolling has increased over time.

- › Large gains in secondary completion rates have also been achieved for boys and girls without disabilities, but gains are again smaller for children with disabilities, leading to disability gaps in completion rates of close to 11 points for boys and 7 points for girls.
- › The last indicator considered for the analysis of trends over time is literacy. In part, as a result of differentiated trends in educational attainment by disability status, the disability gaps for literacy also grew over time, reaching 13 points for boys and 12 points for girls.
- › When looking through regression analysis at the marginal effects of exclusion associated with disabilities, findings are similar to the results from simple statistical comparisons. This suggests that statistical differences in educational outcomes are indeed due to exclusion related to disabilities as opposed to other (observable) characteristics of children with disabilities.
- › After controlling for other factors affecting educational outcomes, the average reductions at the margin for children with disabilities in the probabilities of ever enrolling in school, completing primary schooling, completing secondary schooling, and being literate are estimated at 8 points, 10 points, 7 points, and 14 points respectively (the first three effects are statistically significant, but the fourth for literacy is not).
- › The effects on education outcomes of exclusion related to disabilities are often larger than the effects of other child or household characteristics. For example, the effect of a disability is often larger than that of the quintile of wealth of the child's household.

PERFORMANCE IN SCHOOL, SCREENING FOR DISABILITIES, SCHOOL FACILITIES, AND TEACHER TRAINING

- › Among children who are in primary school, children self-reporting hearing or seeing difficulties tend to do worse on standardized mathematics and reading tests in all but one of ten countries that participated in the latest PASEC assessment implemented in primary schools.
- › The negative impact associated with hearing and seeing difficulties is confirmed in regression analysis after controlling for a wide range of other factors that affect student performance on PASEC. The loss associated with hearing and seeing difficulties is at up to three

percent of mean performance, which is larger than the effects of many other variables in the regression analysis.

- › PASEC data also suggest that the lack of infrastructure for pupils with special needs is a reason for children to drop out. While other reasons related among others to cost, poverty, health and nutritional status, and early marriages or pregnancies are mentioned more often by teachers as major reasons for children dropping out, the lack of adequate infrastructure comes up as well.
- › While slightly more than one in four teacher mentions that medical check-ups for students are in place in their school, less than five percent mention that students benefit from hearing or eye tests. This suggests that disability screening among students remains very rare in schools.
- › PASEC data finally suggest that less than one in ten teachers benefit from in-service training aiming to promote inclusive education. Among a dozen categories of in-service training, this is the category with the lowest coverage rate among teachers across countries.
- › These estimates are symptomatic of a much larger issue related to the lack of comprehensive programs and policies towards inclusive education not only in sub-Saharan Africa, but also in the developing world and even some developed countries more generally. Interventions often tend to be piecemeal as opposed to comprehensive, and they often have low coverage rates.

RETURNS TO EDUCATION FOR INDIVIDUALS WITH DISABILITIES

- › Overall, the analysis demonstrates that children with disabilities are being left behind by efforts to improve education opportunities for all. The rising gaps between children with and without disabilities in sub-Saharan Africa call for stronger policies and interventions to achieve the target of inclusive education adopted under the Sustainable Development Goals.
- › Analysis of earnings data from household surveys suggests that the returns to education for individuals with disabilities are large and similar in magnitude to those observed for individuals without disabilities. Investing in the education of children with disabilities is therefore not only the right thing to do, it is also a smart investment with high returns.

INTRODUCTION

Children with disabilities are at a disadvantage in terms of school enrollment, educational attainment, and learning. Many never enroll in school or drop out prematurely. They also often learn less while in school because of their disabilities and the lack of inclusive education policies and programs. In many ways, exclusion from education systems due to disabilities contributes to multidimensional poverty.

Children with disabilities should have the same opportunities as other children. To make the case for investments towards inclusive education in sub-Saharan Africa, this note measures gaps in educational outcomes between children with and without disabilities, including in terms of whether children ever enroll in school, complete their primary education, complete their secondary education, are literate, and perform well in school. The note also measures the returns to investing in the education of children with disabilities. These returns are high. Apart from the fact that all children have a basic right to education, the economic case for investing in the education of children with disabilities is strong.

There are interesting experiences in sub-Saharan Africa on how to make schools inclusive, including initiatives in the grassroots level. However, country governments, bilateral and multilateral development agencies, and other stakeholders are only starting to place a larger emphasis on ensuring access to education for children with disabilities. Reaching marginal groups, and especially children with disabilities, is often a key priority of Ministries of Education, but this has often been less the case for children with disabilities than for other groups of vulnerable children. Unfortunately, adequate data and the capacity to analyze existing data to suggest and implement appropriate policies are lacking. To indicate the need for better data and capacity building related to education for children with disabilities are, findings from a **Global Partnership for Education (GPE, 2018)** study are instructive. The analysis was conducted in 2017 and is based on data available at the time for 51 countries benefitting from GPE investments, most of which are in sub-Saharan Africa. For this note, two findings stand out (some progress may have been achieved since the analysis was conducted):

- › **Commitment to children with disabilities but lack of specific strategies and targets: Some 38 GPE developing country partners have signed and ratified the Convention on the Rights of Persons with Disabilities**

and all countries but three either state or guarantee within their Constitution the right to primary education for all children, including those with disabilities. Some 33 countries have a national disability law or policy, but at the time of drafting the report only three countries had an established policy on inclusive education, and six countries have drafted one. There is a long way to go to make inclusive education operational.

- › **Lack of disability-disaggregated data:** Ministries identify the need for robust, reliable data regarding the education of children with disabilities as a high priority. Today, only 29 countries include an estimated percentage or number of children with disabilities enrolled at any level in the school system. Only 12 countries have data disaggregated by disability domain (such as mobility, cognition, sight, hearing, and communication). The lack of data on disability is the most commonly cited barrier for policy. The second-most cited barrier identified in Education Sector Plans is a widely held negative attitude toward people with disabilities. Lack of infrastructure, learning material, and strategies on inclusive education, as well as the lack of financial resources, the lack of inter-ministerial coordination and economic barriers are also cited as barriers to education.

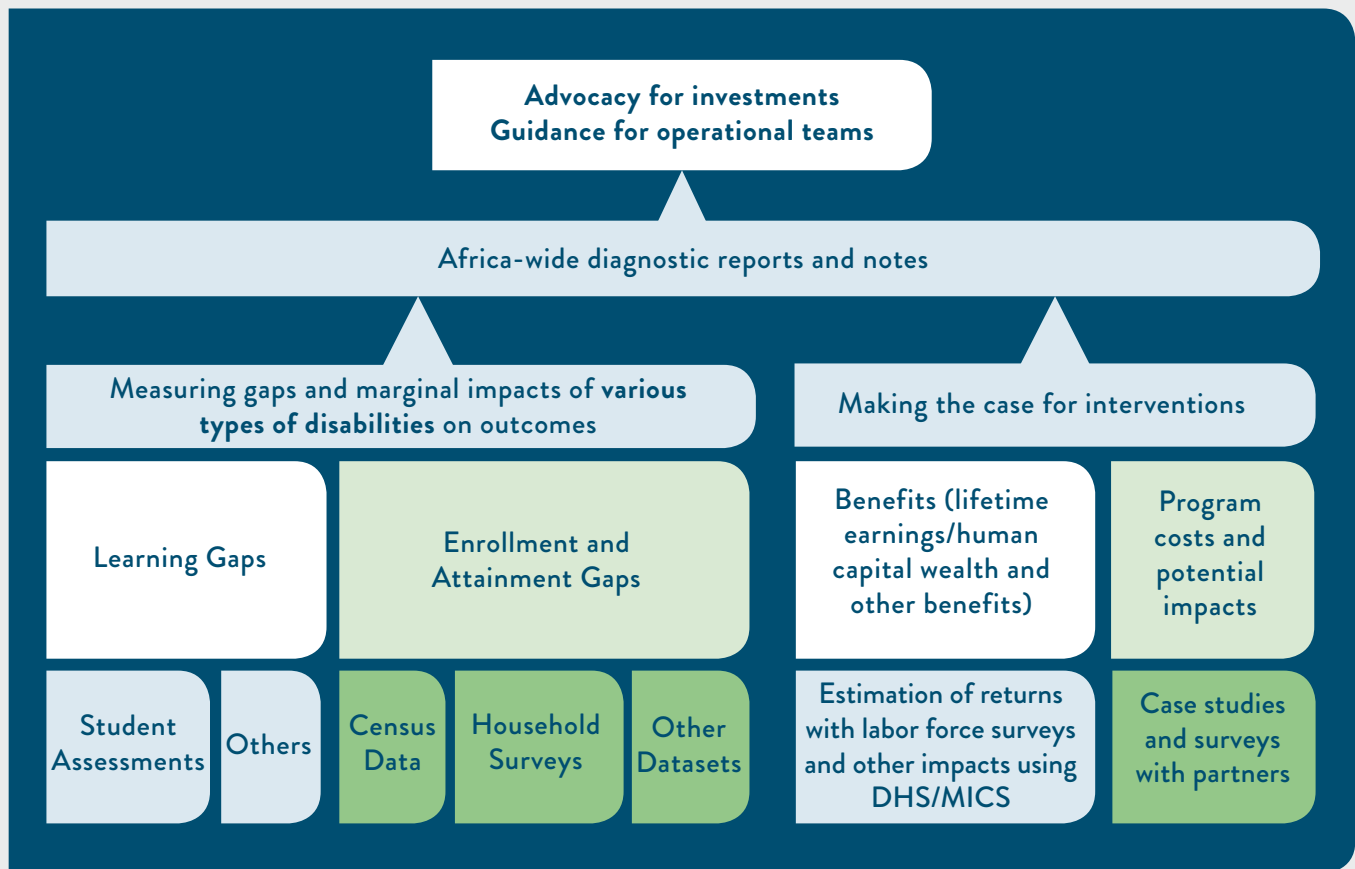
Ministries of Education clearly have a particular stake in ensuring that children with disabilities have access to education since ensuring that children with disabilities are able to go to school could dramatically improve educational attainment and learning in low income as well as other countries. Supporting and providing technical assistance to help countries invest in the education of children with disabilities is also a major new priority for the World Bank and other donors. In July 2018, the World Bank announced ten corporate commitments at the Global Disability Summit co-hosted by the United Kingdom Department for International Development (DfID), the Government of Kenya, and the International Disability Alliance. These commitments include (1) Ensuring that all World Bank-financed education programs and projects are disability-inclusive by 2025; and (2) Scaling up disability data collection and use, guided by global standards and best practices, such as using the

Washington Group's Short Set of Questions on Disability (as explained in more details below). As part of its engagement in the Summit, the World Bank signed the **Charter for Change** along with DfID and other Summit participants. The global commitments laid out in the Charter reinforce the World Bank Group Commitments on Disability-Inclusive Development. There is clear momentum going forward towards disability inclusive education. The goal should not be to only concentrate on access but to ensure learning of all by supporting the social inclusion of children with disabilities and systemic change. This is also why in this note the focus is not only on access to school and educational attainment, but also on learning, and some of the interventions that could be implemented in school towards inclusive education.

To make the case for investments in the education of children with disabilities, a simple theory of change suggests that three components are needed: (1) showing that there is a need for interventions by documenting gaps in education outcomes between children with and without disabilities; (2) arguing that better educational outcomes for children with disabilities can make a major difference not only for them but also for society as a whole – including in economic term; and (3) demonstrating that successful interventions are feasible and affordable. Building on **Male and Wodon (2017)**, this note contributes to the first two tasks. Its aim is simple: by showing how large disability gaps in education outcomes remain in sub-Saharan Africa, and by showing that investments in education for children with disabilities can have high returns, the note contributes to enabling Ministries of Education to prepare country diagnostics based on this theory of change (country profiles will be prepared separately apart from this note focusing on the region as a whole).

The broader analytical framework that informs this work and the series of notes more generally is provided in Figure 1. At the bottom are the data sources used for various components of the work. In the middle are the areas of focus of the work, with the aim of generating a series of reports and notes. The overall aim of the work is to advocate for investments in inclusive education and provide guidance to operational teams on how to implement appropriate programs and policies. This note is but a first attempt at measuring gaps and marginal impacts and illustrating some of the potential benefits from investments.

Figure 1: Analytical Framework



Source: Authors.

The note is structured as follows. The first sections document disability gaps in educational attainment and literacy based on census data. The focus shifts thereafter to gaps in learning for students in school based on student assessment data (**PASEC**, which stands for *Programme d'analyse des systèmes éducatifs de la Confemen*) for ten Francophone countries. The last part of the note estimates the returns to education for children with disabilities. These returns are similar to those for other children, helping to make the case that investments in the education of children with disabilities make economic sense apart from being the right thing to do. A brief conclusion follows.

The analysis is based on censuses, household surveys, and student assessments (see Box 1 on the advantages and limits of various data sources). While census data especially are known to underestimate the extent of disabilities and may thereby capture for the most part severe disabilities, they are nevertheless useful – given their large size –, including to look at trends over time in educational outcomes for children with and without disabilities. Census data are also useful to measure the impact at the margin of exclusion related to disabilities on education outcomes for various types of disabilities, something that is more difficult to do with surveys given limited sample sizes.

BOX 1: ANALYZING DISABILITY AND EDUCATION OUTCOMES WITH VARIOUS DATA SOURCES

This note relies in part on census data. The use of censuses for work on disability and education has some advantages. The number of observations is large even when only a subsample is available for the analysis. This makes it feasible to measure trends over time in education outcomes and the impact at the margin (controlling for other factors) of exclusion related to disabilities. Marginal impacts can be estimated for all children with disabilities as well as by type of disability. By contrast, the sample size of household surveys is often insufficient to perform a similar analysis. But there are also limitations when using census data for such analysis. First, the data tend to underestimate the prevalence of disability. Second, despite efforts to improve questionnaire, the only information that is typically available relates to whether a child has a disability or not, and not whether the disability is severe or mild.

The **Washington Group on Disability Statistics** has developed ways to improve census data on disabilities through six questions related to core functional domains (these questions were not yet available in most of the census data used for this note). The functional domains are: seeing, hearing, learning, walking, cognition (remembering or concentrating), self-care (washing all over or dressing), and communicating. For each question, four responses are suggested – the individual has no difficulty, some difficulty, a lot of difficulty, or no ability at all to perform the task. These questions help measure functionality and thereby detect disabilities that may be less severe or apparent. By contrast, when a single question is asked, the result is typically a substantially lower rate of disability identifying only those with the most severe disabilities in the household as having a disability.

Because most censuses have yet to include these questions, readers should be aware that only severe disabilities tend to appear in census datasets used here. In addition, in most countries censuses are implemented only once every ten years, so the data may not account for the latest developments in education systems. The timing of disabilities is also typically not observed (as is the case for most surveys). Especially for older individuals, the disability may have been observed after the individual has left school. Comparisons of educational attainment for individuals with and without disabilities may be less precise in identifying the role of disabilities in affecting educational attainment for older individuals. This is one of the reasons why the regression analysis in this note is performed on younger age groups than the statistical comparisons provided for all age groups. Because censuses tend to identify severe disabilities that are often observed at or soon after birth, the risk of bias may however not be too large.

Despite these limitations, censuses remain a useful source of data for measuring the impact of exclusion related to disabilities on education outcomes by type of disability, especially over time. In addition, for a few countries, the analysis of educational attainment and (subjectively declared) literacy conducted with census data in this note is complemented by additional analysis using household surveys. In addition, the note also relies on household surveys to measure the returns to education for children with disabilities, and on student assessment data for assessing the performance of students with disabilities while in school. The student assessment data is from PASEC and covers 10 Francophone countries.

It should be noted that efforts are underway to improve data on children with disabilities. One effort of note is being undertaken by UNICEF, especially for young children. For these children, the Washington Group questions may not be appropriate. A new module under the MICS (Multiple Indicators Cluster Surveys) is being implemented to better measure child functioning. This new module – **the Child Functioning Module**, covers children between 2 and 17 years of age and assesses functional difficulties in different domains.

PRIMARY EDUCATION COMPLETION

The analysis of the first four educational outcomes is based for the most part on census data. Figure 2 provides primary completion rates for individuals aged 16 to 35 based on the latest publicly available census data for 11 countries (Burkina Faso, Ethiopia, Ghana, Kenya, Liberia, Mali, Malawi, Mozambique, South Africa, South Sudan, and Zambia). Completion rates for children aged 12-15 are not shown because they tend to be too low versus expected lifetime completion rates. This is because some children enter primary school late or repeat grades, which leads them to complete primary school well beyond the normal completion age. Note that since the data from the censuses is not the most recent in comparison to data from household surveys of education management information systems, changes that may have taken place in recent years are not accounted for. Yet it is unlikely under current circumstances that such changes would reverse the long-term trends observed in the census data.

Disability gaps in educational attainment for older individuals could be underestimated. This is because older individuals may have suffered from a disability after leaving school. This would tend to reduce the measures of disability gaps observed for older individuals. To reduce the risk of bias, comparisons are made until age 35 because until that age, disability rates tend not to increase too much.

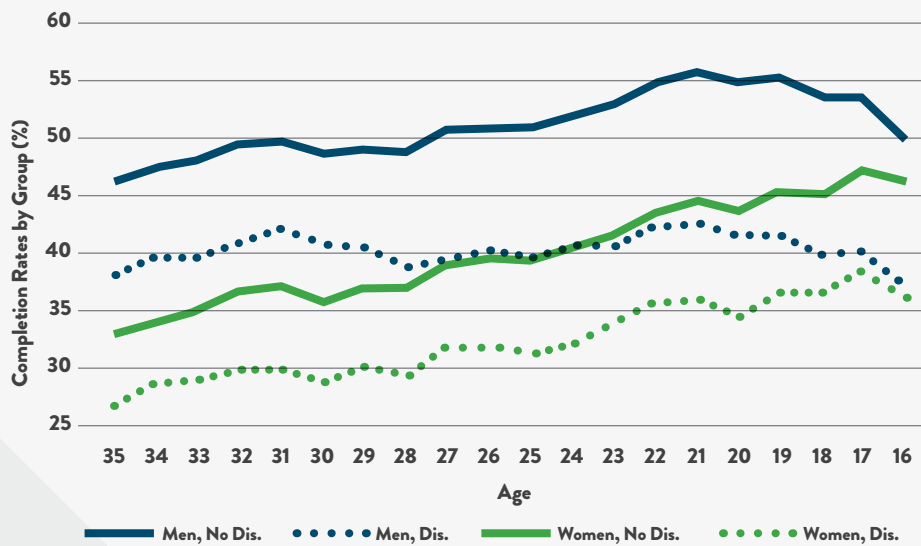
Four groups are considered: boys with no disability, girls with no disability, boys with one or more disabilities, and girls with one or more disabilities. The statistics in Figure 1 are average completion rates for individuals of the corresponding age bracket at the time of the census (three-year moving averages are used to better capture underlying trends

and avoid jumps in the data when too few observations are available for individuals with disability). For children without disabilities, completion rates at the primary level increased substantially. The gain is at 3.6 percentage points for boys and 13.3 percentage points for girls over the time span separating the youngest and oldest groups. Girls have essentially caught up with boys in terms of primary completion. Smaller gains are observed for children with disabilities, at -0.9 percentage points for boys and 9.5 points for girls. For both boys and girls that have disabilities, there seems to be a plateau in terms of the completion rates for primary school, probably in part because few countries have developed strategies to reach these children.

As a result of these trends, the absolute gap in primary completion rates between children with and without disabilities has increased over time. This is visualized in Figure 3. A few decades ago, as fewer children had the opportunity to complete primary school, differences in completion rates by disability status were at only four to six percentage points for boys and girls alike. At the time of the latest available censuses, gaps are at 12.8 points for boys and 10.1 points for girls on average across countries. In short, completion rates have improved for children with disabilities, but more slowly than has been the case for children without disabilities, so disability gaps in primary completion have widened.

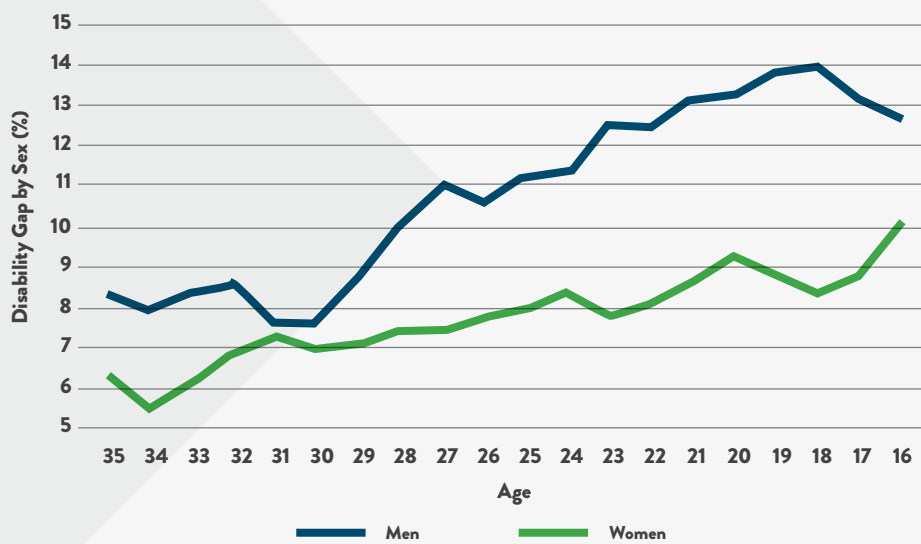
For children without disabilities, completion rates at the primary level have increased substantially. Smaller gains have been observed for children with disabilities. As a result, the absolute gap in primary completion rates between children with and without disabilities has increased over time.

Figure 2: Primary Completion Rates by Age and Group (%)



Source: Authors. Sample: 11 censuses.

Figure 3: Disability Gap for Primary Completion (%)



Source: Authors. Sample: 11 censuses.

EVER ENROLLING IN SCHOOL

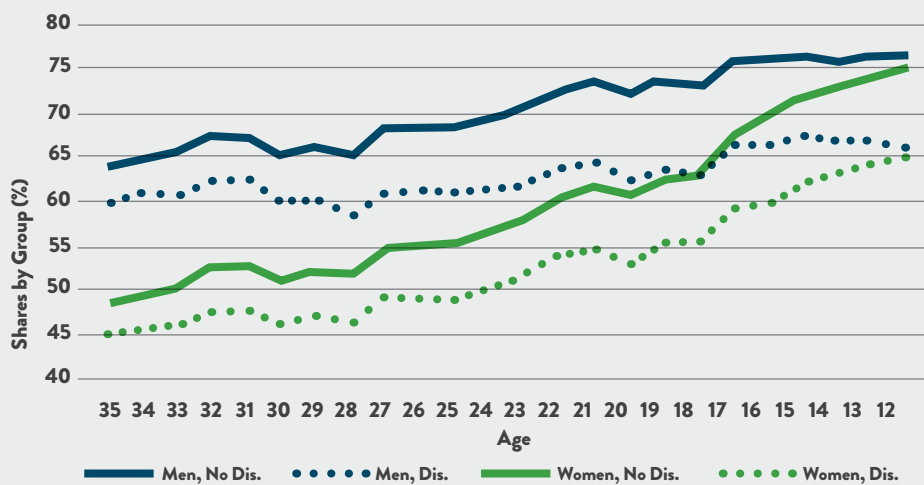
The gaps in primary school completion between children with and without disabilities may be due in part to the fact that children with disabilities are at a higher risk of dropping out before completing the cycle than children without disabilities. However, many children with disabilities never even get to enroll in school. Indeed, the disadvantages faced by these children start in their early childhood years including for

enrollment at the primary level. Figures 4 and 5 provide data on the share of children who ever enrolled in school. Statistics are computed for individuals aged 12 to 35. Statistics for individuals who are younger but in age of primary school are not shown because some of them could still enroll at a later age. This is less likely for children aged 12 and over if they have not yet enrolled by then.

Patterns observed in Figures 4 and 5 for ever enrolling in school are similar to those observed in Figures 2 and 3 for primary completion. For children without disabilities, the likelihood to ever enroll in school increased by 12.6 points for boys and 26.6 points for girls over the time separating the youngest and oldest age groups. Girls caught up with boys, as is the case for primary completion. Smaller gains are observed over the period for children with disabilities, at 6.5 points for boys and 20.3 points for girls. Even if girls with disabilities have caught up with boys with disabilities, absolute gaps in the likelihood of ever enrolling in school between children with and without disabilities have grown over time. This is shown in Figure 5. At the time of the census, the absolute gaps associated with disabilities were at 10.4 points for boys and 9.8 points for girls.

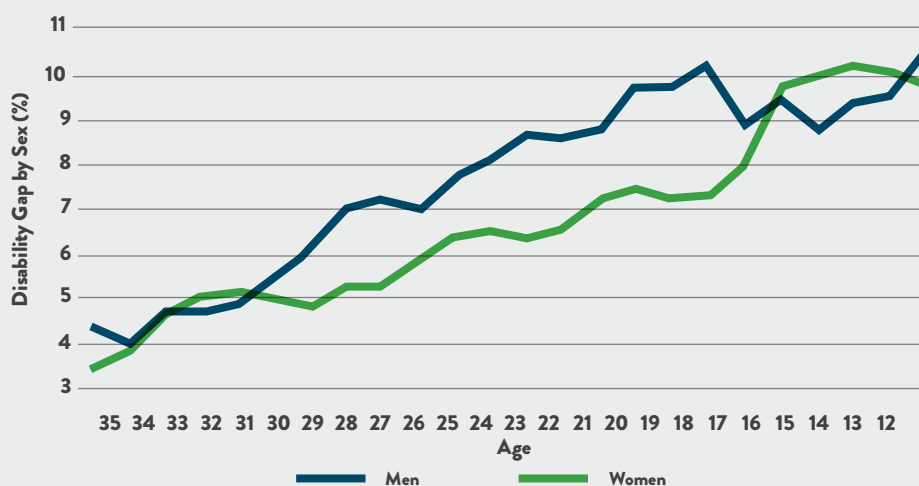
Many children with disabilities are never enrolled in school. At the time of the latest census data, among children aged 12, the likelihood of having ever enrolled in school was 10 percentage points lower for children with disabilities versus children without disabilities. The disability gap has increased over time.

Figure 4: Shares of Children Ever Enrolled by Age and Group (%)



Source: Authors. Sample: 11 censuses.

Figure 5: Disability Gap for Share of Children Ever Enrolled (%)



Source: Authors. Sample: 11 censuses.

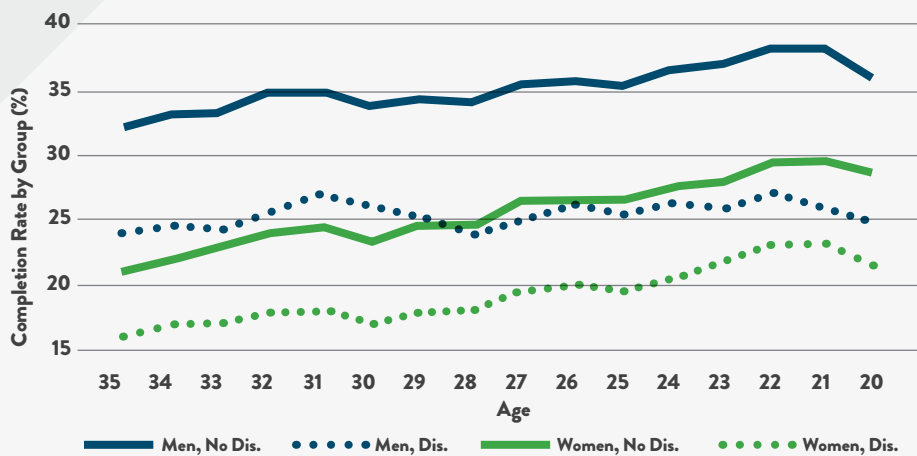
SECONDARY EDUCATION COMPLETION

The analysis is repeated for secondary education completion in Figures 6 and 7. One again, similar patterns emerge, albeit with lower completion rates than for primary education. Estimates are provided for individuals aged 20 and above to allow for a few additional years versus the typical age of on-time completion of 18. For children without disabilities, completion rates at the secondary level increased by 3.9 percentage points for boys and 7.5 percentage points for girls over the period separating the youngest and oldest groups (note that since we look at older individuals, this period of time is shorter than for primary completion). Girls made a lot of progress but still lag slightly behind boys, probably in part due to the risks of child marriage and early childbearing in many countries, both of which lead girls to drop out of school at the secondary level (Wodon et al., 2018). The gains for children with disabilities were once again smaller, at 0.7 points for boys and 5.5 points for girls. While girls with disabilities have caught up with boys with disabilities, gaps in secondary completion rates have widened between children with and without disabilities. They reached 11.1 points for boys and 7.0 points for girls aged 20. As for other indicators, children with disabilities did not benefit as much as other children from the large gains in educational attainment achieved by countries.

Large gains for boys and girls without disabilities were also achieved in secondary completion rates, but gains were once again smaller for those with disabilities. This has led to disability gaps in completion rates of 11 points for boys and 7 points for girls.

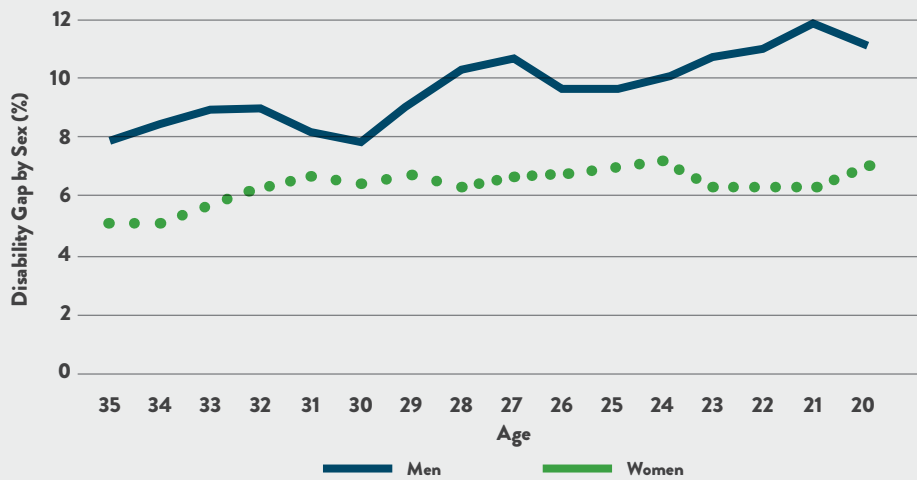


Figure 6: Secondary Completion Rates by Age and Group (%)



Source: Authors. Sample: 11 censuses.

Figure 7: Disability Gap for Secondary Completion (%)



Source: Authors. Sample: 11 censuses.

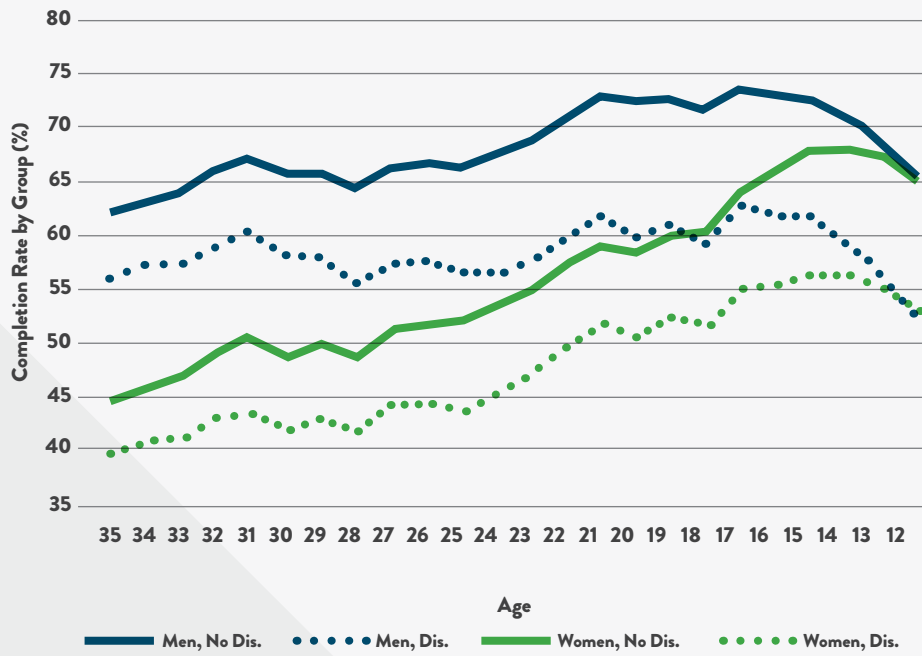
LITERACY

The last indicator considered for the analysis of trends over time is literacy, as declared subjectively by census respondents for their household members. While subjective perceptions of literacy may not necessarily indicate that an individual is indeed literate as a reading and comprehension test would, the data are still useful to conduct a tentative assessment of differences in literacy rates between individuals with and without disabilities. Figures 8 and 9 provide the trends in literacy over time by age groups, considering individuals from 12 to 35 years of age. For children without disabilities, the likelihood of literacy increased by 3.3 points for boys and 20.6 points for girls over the period separating the youngest and oldest age groups. As expected, girls caught up with boys. The gains for children with disabilities were small for boys at -3.4 points, while they reached 13.7 points for girls. As shown in Figure 9, the disability gaps grew over time substantially, reaching 13.0 points for boys and 11.9 points for girls.

The last indicator considered for the analysis of trends over time is literacy. In part as a result of differentiated trends in educational attainment by disability status, the disability gaps for literacy also grew over time substantially, reaching 13 points for boys and 12 points for girls.

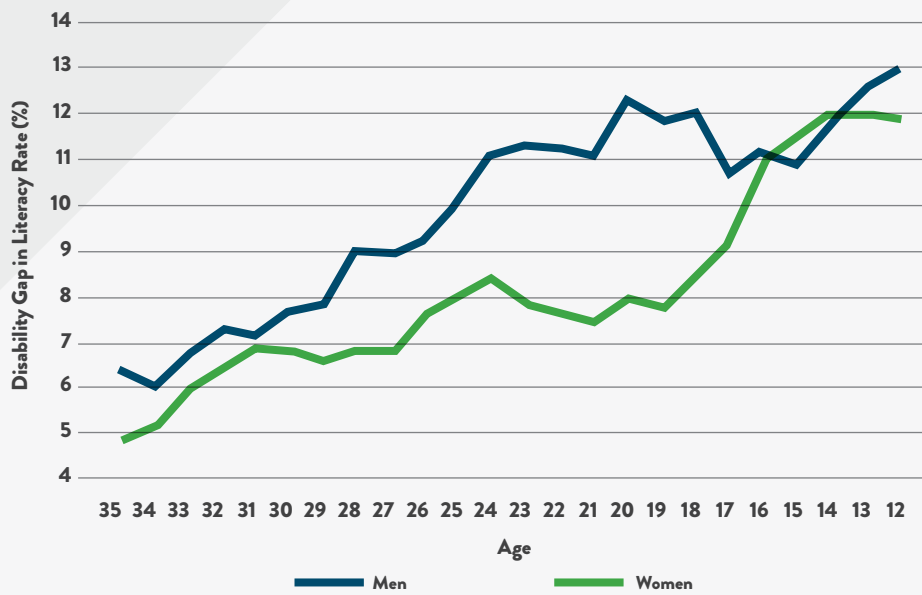


Figure 8: Literacy Rates by Age and Group (%)



Source: Authors. Sample: 11 censuses.

Figure 9: Disability Gap for Literacy (%)



Source: Authors. Sample: 11 censuses.

MARGINAL IMPACTS FOR ENROLLMENT, ATTAINMENT, AND LITERACY

The data presented in the previous sections suggest large and growing gaps in educational attainment and literacy between children with and without disabilities over time. Table 1 summarizes the key estimates for the youngest appropriate age cohorts for each of the four indicators. The last row in the Table displays the disability gaps for the various indicators for both boys and girls. For example, the probability of never going to school at all is about 10 percentage points higher for

children with disabilities versus children with no disabilities among 11 years old. Similar gaps are observed for primary and secondary school completion. For literacy, the gaps are even larger, at 14 percentage points for boys and 12 points for girls of the appropriate age group. These are the average values of the disability gaps observed across the 1 countries for which estimations were carried using census data.

Table 1: Disability Gaps for the Most Recent Appropriate Age Cohorts (%)

Sample: 11 censuses.

	Ever Enrolled (11 Years Old)		Primary Completed (16 Years Old)		Secondary Completed (20 Years Old)		Literacy (12 Years Old)	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
No disability	76.7	75.3	50.0	46.2	36.1	28.6	65.7	65.3
Disability	66.3	65.4	37.2	36.2	25.0	21.6	52.7	53.5
Disability gap	10.3	9.9	12.8	10.1	11.1	7.0	13.0	11.9

Source: Authors' estimation using census data.

Are the current gaps the result of exclusion associated with disabilities, or do they result from other characteristics of children that could be correlated with disabilities? For example, are the disability gaps mentioned in Table 1 the result of exclusion related to disabilities, or could they be related to other characteristics of children that could lead to a higher risk of disability, such as extreme poverty or stunting in early childhood? To assess the likely impact of exclusion related to disability on educational attainment and literacy after controlling for other factors that may affect education outcomes, regression analysis is needed. The term “impact” is used for simplicity (see Box 2 on what is meant by “impact”). The regression analysis for the marginal impacts of exclusion related to disabilities considers the same four education outcomes, but with slightly different age groups mostly for sample size reasons: (1) whether a child ever enrolled in school (the sample for the regression analysis consists of children ages 6 to 11 to account for conditions at the time of the implementation of the census); (2) whether a child completes primary education (sample of children 15 to 18 years old); (3) whether a child completes secondary education (sample of youth ages 19-22); and (4) whether a child is considered by the parents as literate (sample of children ages 15-18). For each regression, the sample of children included is a bit older than the normal threshold to complete a level of schooling or be literate to account for children who may start school late or repeat grades.

While census data have limits in terms of the variables that can be used as controls, a number of important variables known to affect educational outcomes are available in the data. The regression analysis includes the following variables as controls (with minor variations between countries): the sex of the child; whether the child has a birth certificate; whether the child has a disability and the type of disability observed (in addition, an interaction effect is included to assess if a disability has a differential impact for boys or girls); whether the child is an orphan on the side of the mother, the father, or both; whether the child resides in an urban or rural area; the geographic area in which the child resides (these areas clearly differ between countries); the mother tongue of the child; the quintile of wealth of the households to which the child belongs; the religion of the child; the size of the household in which the child resides; the sex of the household head; a number of characteristics for the household head (age according to 10 years intervals, education level, and type of work); the same characteristics for the spouse of the household head; and the leave-out-mean of the dependent variable. This leave-out-mean variable is computed among all other children in the area where a child lives and is meant to capture local conditions that affect education outcomes for children in disaggregated areas where children live.

BOX 2: WHAT DO WE MEAN BY “IMPACTS” OF EXCLUSION RELATED TO DISABILITIES?

The aim of this section is to estimate the impact of exclusion associated with a disability on education outcomes for children with disabilities in comparison to children without a disability but with otherwise similar characteristics. The term “impact” is used for simplicity, but one must be careful about not necessarily inferring causality. Estimates of impacts are obtained through regression analysis to control for other variables that may affect education outcomes. What is measured are statistical associations, and not necessarily impacts as could be observed for example with randomized control trials. Since a disability cannot be randomized, we must rely on regression analysis to estimate likely impacts, but there is always a risk of bias in the measures of the impacts on outcomes of exclusion associated with a disability. At the same time, the fact that we observe strong effects that are robust to various specifications does suggest, as expected, that exclusion related to disability is often strong.

Table 2 provides a summary of the results for the impacts associated with exclusion related to disabilities. The interpretation of the marginal impacts is in percentage points. The marginal impacts in Table 2 are almost always statistically significant as well as large (when a coefficient is not statistically significant, the value is not provided and instead a notation NS is mentioned in the Table). After controlling for other factors that may affect outcomes, the reductions at the margin for children with disabilities in the probabilities of ever enrolling in school, completing primary schooling, completing secondary schooling, and being literate are estimated at 8.3 percentage points (this is the interpretation of the coefficient value of -0.083 in table 2), 10.2 points, 6.8 points, and 14.0 points, respectively, in comparison to children with no disability. These estimates are of a similar order of magnitude to the statistical measures mentioned in the previous section, suggesting that most of the differences between children with and without disabilities are indeed associated with the disability status of the children as opposed to other variables that could be correlated with that status.

There are differences in the impacts associated with different types of disabilities. For example, children with cognitive, psychosocial or multiple disabilities often fare worse than children with physical disabilities. This is also shown in Table 2 which provides the marginal impacts in the regression analyses when different types of disabilities are considered separately, as opposed to considering all types of disabilities together.

The reductions at the margin for children with disabilities in the probabilities of ever enrolling in school, completing primary schooling, completing secondary schooling, and being literate are estimated at 8.3 points, 10.2 points, 6.8 points, and 14.0 points respectively.



Table 2: Marginal Impacts of Exclusion by Type of Disability on Educational Attainment and Literacy

Sample: 11 censuses.

	Ever Enrolled (6-11 Years Old)	Primary Completed (15-18 Years Old)	Secondary Completed (19-22 Years Old)	Literacy (15-18 Years Old)
All types of disabilities combined	-0.083	-0.102	-0.068	NS
By type of disability				
Seeing	-0.048	NS	NS	-0.052
Hearing	-0.049	-0.102	-0.084	-0.104
Speech	-0.177	-0.153	-0.152	-0.266
Mental	-0.217	-0.223	-0.111	-0.313
Physical	-0.055	-0.101	-0.057	-0.064
Multiple	-0.235	-0.168	-0.142	-0.281
Other	-0.042	-0.075	-0.098	-0.059

Source: Author's estimations.

Note: All coefficients are statistically significant at the ten percent level except those noted NS for Not Statistically Significant (at the ten percent level).

To provide perspective, it is useful to compare the marginal impacts on education outcomes of exclusion related to disabilities with the impact of other factors affecting those outcomes (this is not shown in Table 2 but based on the full regression results available from the authors). Girls continue to have lower educational outcomes than boys, but the magnitude of the gender gaps is much smaller than for the disability gaps. Being an orphan is also associated with a lower likelihood of completing various levels of schooling as well as being literate, but with smaller effects than exclusion related to disability. There are also wealth effects at work, with children from better off households more likely to do well. When comparing children from the lowest quintile of wealth to those from the top quintile of wealth, marginal effects can be large, but again, socio-economic differences tend to have smaller effects at the margin that exclusion related to disability. Finally, there are also marginal effects on education outcomes associated with the education level of the household head and the location of the household, but these impacts are smaller again than those associated with disability even if differences between urban and rural areas can be substantial.

The marginal effects on education outcomes of exclusion related to disability are often larger than the effect of other child or household characteristics. For example, the marginal effect of a disability is often larger than that of the quintile of wealth of the households in which a child resides.



STUDENT PERFORMANCE IN SCHOOL

Apart from being less likely to go to school, complete their primary or secondary education, and being literate, children with disabilities tend to perform less well on standardized student assessments when they manage to remain in school. While student assessments in sub-Saharan Africa rarely provide a clear identification of children with disabilities, questions in the 2014 PASEC assessment can be used as proxies for disabilities. Students in grade 6 are asked whether they have difficulties seeing or hearing while in the classroom. These are imperfect proxies for disability because in large classrooms other factors apart from disabilities (for example being far away from the teacher at the back of a large classroom) may lead to difficulties seeing or hearing. The share of students declaring having difficulties hearing or seeing is too large to represent only children with disabilities, and other types of disabilities are not represented by these two simple questions. Still, there is a clear link with disabilities. For example, essentially all children wearing eye glasses declare having seeing difficulties. Therefore, in a tentative way, these two variables are useful for a tentative assessment of the impact of difficulties/disabilities on learning outcomes.

Table 3 provides estimates of the average scores of students with and without hearing and seeing difficulties on PASEC for both mathematics and French. Data are available for the ten countries: Benin, Burkina Faso, Burundi, Cameroon, Chad, Cote d'Ivoire, Congo, Niger, Senegal, and Togo. Note that what is measured is the mastery of core literacy and numeracy skills, not the mastery of specific aspects of the curriculum in each country (for more details on what PASEC measures, see Box 3). A score of 500 indicates that a student is performing at the average level in the sample for the 10 countries. The estimates suggest that there are systematic differences in test scores for both mathematics and reading/language between children with and without hearing and seeing difficulties. The average differences are large for the whole sample with students with hearing/seeing difficulties having substantially lower scores than those without difficulties (Chad is the only exception among the ten countries with a surprising reverse effect). The differences in performance tend to be larger for children with hearing than seeing difficulties. Perhaps this may be because hearing impairment may in some cases be temporary, for example when a child has an ear infection, while visual impairment is typically not temporary (although eye glasses can help).



Table 3: Average Student Performance on PASEC in Grade 6 (Test Score – Mean at 500)

Sample: 10 PASEC countries

	Hearing Difficulties			Seeing Difficulties		
	No	Yes	Difference	No	Yes	Difference
	Mathematics					
Benin	502.9	464.3	38.6	503.5	473.2	30.3
Burkina Faso	544.2	524.1	20.1	541.2	535.5	5.7
Burundi	597.3	571.4	25.9	598.8	584	14.8
Cameroun	494.3	469.1	25.2	495.3	468.6	26.7
Congo (Republic)	485.0	470.7	14.3	485	474.7	10.3
Cote d'Ivoire	481.0	457.5	23.5	483	455.2	27.8
Niger	409.9	397.7	12.2	409.1	403.4	5.7
Senegal	561.7	476.9	84.8	560.3	507.8	52.5
Chad	449.7	464.3	-14.6	448	472.1	-24.1
Togo	523.2	500.2	23.0	519	527	-8.0
Total	508.7	482.8	25.9	505.9	498.6	7.3
	Reading					
Benin	530.3	486.9	43.4	531.8	493.5	38.3
Burkina Faso	538.4	509.0	29.4	535.4	520.8	14.6
Burundi	528.3	509.9	18.4	530	517.8	12.2
Cameroun	524.1	495.5	28.6	523	501.1	21.9
Congo (Republic)	506.0	504.5	1.5	507.6	495.3	12.3
Cote d'Ivoire	524.8	491.5	33.3	525.8	493.4	32.4
Niger	407.5	397.5	10.0	406.8	401.8	5.0
Senegal	564.8	472.4	92.4	563	506.4	56.6
Chad	433.0	433.1	-0.1	429.6	452.1	-22.5
Togo	499.7	481.8	17.9	495.8	506.1	-10.3
Total	511.3	486.2	25.1	509.7	497.4	12.3

Source: Author's estimations.

Note: NS = Not statistically significant at the ten percent level.

BOX 3: INTERPRETING PASEC SCORES

The 2014 PASEC assessment was implemented in grades 2 and 6. The grade 2 test for reading/language assesses three main areas: listening comprehension, familiarization with written language and reading-decoding, and reading comprehension. For mathematics, the grade 2 test measures pupils' core competencies in two main areas: arithmetic, and geometry, space and measurement. For grade 6, the test aims to evaluate student's ability to understand, learn and adapt their knowledge to situations encountered in daily life. The language test assesses pupils' comprehension of informative texts and documents, including the ability to extract information from literary texts. For mathematics, the test considers the ability of students to assimilate concepts and apply them in diverse situations.

Scores for both tests are scaled so that the international average is 500 points and the standard deviation is 100 points when weighting all countries equally. This implies that two in three pupils are in a range of 400 points to 600 points, and most students are in the 250 to 750 range. An average score of 500 does not mean however that a student is doing well. As an example, in 2014, more than 70 percent of students did not achieve sufficient language competency in grade 2. For mathematics, almost half of the students in grade 2 did not reach the sufficient mathematics competency threshold.

To assess how well students are doing versus how they should be doing, students can be categorized by proficiency levels. Pupils below Level 1 are not able to correctly answer a majority of the most basic test questions; these pupils do not display the competencies measured by the test. Students are then categorized according to three other levels (levels 1 to 3 for mathematics, levels 1 to 4 in reading) with increasing degrees of mastery. A sufficient level of proficiency versus the test's standards is achieved by students performing at levels 3 and 4 for reading, and levels 2 and 3 for mathematics.

Source: CONFEMEN (2015).

Another way to look at the data is to group students by levels of proficiency. As noted in Box 3, students below level 1 do not display the competencies measured by the test, while students in levels 1 to 3 for mathematics, and 1 to 4 for reading display increasing levels of competencies. To achieve sufficient proficiency, a student must be at level 3 or 4 in reading, and level 2 or 3 in mathematics. As shown in Table 4, many students do not achieve sufficient levels of proficiency, and students with hearing or seeing difficulties tend to do more poorly in terms of the degree of competency that they display. On average across the 10 countries, a larger share of students with hearing or seeing difficulties tends to be clustered in low proficiency levels as compared to students without hearing or seeing difficulties.



Table 4: Share of Students by Proficiency Level in PASEC, 10 Countries, Grade 6 (%)

Sample: 10 PASEC countries

	Hearing Difficulties			Seeing Difficulties		
	No	Yes	Difference	No	Yes	Difference
	Mathematics					
Level 0	24.2	30.4	-6.2	24.7	26.8	-2.1
Level 1	31.1	37.6	-6.5	32.2	32.5	-0.3
Level 2	28.9	24.3	4.6	28.1	28.2	-0.1
Level 3	15.9	7.7	8.2	15.0	12.5	2.5
All	100.0	100.0	-	100.0	100.0	-
	Reading					
Level 0	6.2	7.6	-1.4	6.7	5.9	0.8
Level 1	19.2	23.7	-4.5	19.7	20.8	-1.1
Level 2	26.8	33.5	-6.7	26.5	33.1	-6.6
Level 3	28.2	25.3	2.9	27.6	27.9	-0.3
Level 4	19.6	9.9	9.7	19.6	12.3	7.3
All	100.0	100.0	-	100.0	100.0	-

Source: Author's estimations.

MARGINAL IMPACTS FOR TEST SCORES IN SCHOOL

As done for educational attainment and literacy, regression analysis can be used to test whether controlling for other factors, hearing and seeing difficulties lead to lower performance on PASEC. The analysis controls for a wide range of student, household, teacher and school characteristics that may affect test scores. The results are provided in Table 5. Hearing and seeing difficulties are associated with substantial reductions in performance even after controlling for other factors. Recall that the average score for students is set at 500. Therefore, a reduction of 15 points is equivalent a loss of about 3 percent versus the average score after controlling for other factors affecting

student performance. The impacts are slightly larger for hearing than for seeing difficulties, but they are broadly similar in magnitude for boys and girls and for mathematics and reading within each type of difficulties.

To provide some perspective, the impacts in Table 5 are larger in magnitude than the benefits from (i) going to a preschool; (ii) having textbooks at home; (iii) having a teacher involved in tutoring; (iv) having small class sizes; and (v) being in a larger school. Impacts for variables that have impacts of a similar magnitude to those observed for hearing and seeing difficulties include those from (i) having homework to do; and (ii) the socio-economic quintile of household well-being to which the child belongs. Impacts that are slightly larger include those from (i) female teachers; (ii) electricity in schools (which may denote a well-developed area effect); (iii) urban location; and (iv) private school provision.

Table 5: Marginal Impact of Exclusion from Hearing/Seeing Difficulties on Performance, Grade 6

Sample: 10 PASEC countries

	Mathematics			Reading		
	All	Boys	Girls	All	Boys	Girls
Hearing difficulties	-14.4	-14.6	-15.2	-15.2	-15.5	-15.4
Seeing difficulties	-9.0	-6.0	-8.9	-10.5	-8.4	-12.0

Source: Author's estimations.

TEACHER PERCEPTIONS ON REASONS FOR DROPPING OUT OF SCHOOL

It should also be noted that exclusion related to disabilities may lead some children with disabilities who enrolled in school to drop out of school prematurely. One of the questions asked to teachers in PASEC related to their perceptions of why students are dropping out. A total of eighteen responses

can be provided by teachers, and each teacher can provide up to five responses. One of the responses relates to the accessibility of the school for children with disabilities, which in most likelihood relates to mobility issues. Tabulations of the most common teacher responses for both grade 2 and grade 6 are provided in Table 6. While the lack of infrastructure for pupils with special needs is not the most frequently cited response (not surprisingly given that most students do not have disabilities), it is mentioned quite often as one of the reasons leading some students to drop out.

Table 6: Teacher Perceptions on Reasons for Students Dropping Out of Primary School (%)

Sample: 10 PASEC countries

	Teacher Responses in Grade 2 (all countries)	Teacher Responses in Grade 6 (all countries)
Pupil's health and nutritional status	65.7	58.1
Child labor	33.8	30.8
Pupil's lack of motivation for learning	55.0	54.2
Families' lack of interest in school	68.4	68.5
Excessive distance between home and school	32.2	24.0
Lack of school canteen	32.2	30.2
Cost of schooling	23.0	19.2
Household poverty	66.9	70.3
Early marriage	18.5	28.8
Pregnancy	13.4	21.1
Teachers' poor educational mentoring	4.5	3.8
Teachers' lack of motivation	4.2	4.7
Teacher absenteeism	5.8	4.6
School's bad reputation	3.5	3.8
Overcrowded classrooms	8.2	5.8
Lack of security at school	4.7	2.6
Negative school climate	2.7	2.3
Lack of infrastructure for pupils with special needs	16.1	20.6

Source: Author's estimations.

LACK OF PROGRAMS FOR INCLUSIVE EDUCATION

There is no doubt that achieving inclusive education is a major challenge in sub-Saharan Africa, as it is in other regions of the world. While this note does not provide by any means a comprehensive assessment of where the region stands, a few statistics again from PASEC are useful to illustrate the challenges that remain. A question is asked in PASEC to teachers in both grade 2 and grade 6 on whether students have benefitted from a medical check-up, a hearing test, and an eye test in the school. Table 7 provides the share of

teachers who answer that this was the case for their students. Only slightly more than a fourth of teachers mention the existence of medical check-ups in both grades. For hearing and eye tests, the proportions are at less than five percent on average across countries. Without such diagnostics tests, it is often very difficult for teachers to be able to support the learning efforts of children who may have disabilities, because the teachers may not know who these children are given that class sizes of 50 students tend to be more the norm than the exception in many countries. The lack of such tests also does not enable the schools to use referral services for hearing aids or glasses.

Table 7: Share of Teachers Reporting Medical Checkups and Eye/Hearing Tests, Grades 2 and 6 (%)

Sample: 10 PASEC countries.

	Grade 2			Grade 6		
	Medical Check-Up	Eye Test	Hearing Test	Medical Check-Up	Eye Test	Hearing Test
Benin	5.4	0.9	0.9	4.9	1.6	0.4
Burkina Faso	19.1	5.6	1.8	18.3	5.3	4.0
Burundi	41.4	2.8	1.9	23.2	5.0	4.0
Cameroun	48.1	6.0	1.3	39.6	4.5	2.6
Congo (Republic)	14.5	7.4	4.5	9.6	2.3	0.4
Cote d'Ivoire	29.1	1.8	1.4	38.4	18.0	10.5
Niger	32.0	3.9	0.0	26.1	2.3	1.1
Senegal	50.1	2.2	7.9	50.7	10.3	8.1
Chad	18.6	8.3	5.2	9.9	4.4	1.8
Togo	19.0	3.9	1.0	16.8	2.4	2.3
Total	28.8	3.8	2.3	27.0	7.6	4.7

Source: Authors' estimation using census data.

Another interesting question asked to teachers in both grades is whether they have received in-service training in various areas. Teachers need both pre-service and in-service training with respect to inclusive education, but the PASEC data provide information only on in-service training. This information is very instructive about the relatively low priority assigned to inclusive education. Eleven categories of training are included in potential responses by teachers

on how they were trained, one of which is training towards inclusive education (disability or other). As shown in Table 8, less than one in ten teachers in both grade 2 and grade 6 declares having received such training, and this is the category of training that is the least common among the eleven types of training identified. Without such training, it is unlikely that teachers will be able to adequately support children with disabilities.

Table 8: Share of Teachers Reporting Receiving Various Types of Training, Grade 2 and Grade 6 (%)

Sample: 10 PASEC countries

	Teacher Responses in Grade 2 (all countries)	Teacher Responses in Grade 6 (all countries)
Teaching of English	84.0	82.1
Teaching of mathematics	70.2	72.9
Teaching of other subjects (history, science, ICT, etc.)	56.2	62.1
Skills-based approach	61.2	71.5
Situation-based learning approach	18.6	23.8
Multi-grade class management	17.9	22.9
Large group-centered teaching	22.5	23.7
Adaptive dimension	16.2	17.2
Teaching by objectives	37.4	36.3
Child-friendly school	10.3	11.4
Inclusive education (disability or other)	8.2	7.6

Source: Author's estimations.

The data provided in Tables 7 and 8 are symptomatic of a much larger issue related to the lack of comprehensive programs and policies towards inclusive education not only in sub-Saharan Africa, but also in the developing world and even some developed countries more generally. While discussing what such programs and policies should entail is beyond the scope of this note, some guidance is available from a diagnostic tool that UNICEF (2018) developed for service delivery and system strengthening. The tool considers among others whether the following conditions are being met: (i) the existence of appropriate law/policy explicitly mentioning the rights of children with disabilities to receive an education; (ii) the existence of a physical environment in schools that is appropriate for children with disabilities; (iii); the availability of materials and communication that support the inclusion

of children with disabilities; (iv) the availability of appropriate human resources to support inclusive education, covering children with disabilities; (v) the existence of curricula and support from teachers and school administrators that are inclusive of children with disabilities; and (vi) the existence of an EMIS that is inclusive of children with disabilities. More generally, IIEP-UNESCO and UNICEF are currently working on a framework for inclusive education that identifies multiple areas of service delivery as well as enabling factors that should be considered to achieve inclusive education. But clearly, the simple statistics provided in tables 7 and 8 suggest that there is ample scope for improving the coverage of programs and interventions in this area (as well as the quality of those programs and interventions).



LABOR MARKET GAINS FROM EDUCATION

The analysis so far suggests that disability gaps in educational attainment, literacy, and performance on standardized tests are large, and that schools often do not have programs in place to detect disabilities, or train teachers to be able to promote inclusive education. Investing in the education of children with disabilities is the right thing to do from a rights perspective, but it is also a smart investment. Indeed, apart from a wide range of other benefits from educational attainment, the labor market returns to education for individuals with disabilities are typically large and of a similar order of magnitude to the returns observed for other individuals. There is a large body of literature on the potential impact of educational attainment on earnings. The benefits are typically measured through regression analysis whereby the potential effect on earnings of educational attainment and experience is estimated. In some models, the focus is the correlation between years of schooling and earnings, and the implicit gain associated with each additional year of schooling. Other models look at the potential impact on earnings of different levels of schooling, such as having a primary, secondary, or tertiary education.

Apart from educational attainment, whether measured through years of schooling or in levels, the models may also control for other variables that may affect earnings. Apart from education and the level of experience of the workers (and its squared value), the models used here include a dummy variable to identify workers with disabilities when estimations are conducted for all workers together, as well as variables to capture the sex of the worker and his/her location. Models with education in levels typically provide better estimates of the gains from various levels of educational attainment than those based on the number of years of education, so levels of educational attainment are used here. Based on standardized variables available in the World Bank's I2D2 database, all individuals with some primary education or primary education completed but no education at a higher level are combined in a single category for primary education. The same is done for secondary and tertiary education. In other words, no distinction is made as to whether individuals have completed or not a specific cycle of study.

To test for robustness, two types of models are estimated (OLS and Heckman selection model). Models are estimated for the whole sample of workers with earnings, and then only for those workers with a disability to be able to compare the returns to education for both samples. A number of other tests have been performed that suggest that the results tend to be fairly robust to the estimation approach. Table 9 provides the main results for four countries: Burkina Faso, The Gambia, Rwanda and Senegal [additional countries to be added for final version]. Having a disability is associated with lower earnings after controlling for education, experience, sex, and location. In Burkina Faso for example, workers with a disability earn on average 16 percent to 18 percent less than other workers with similar characteristics (this is the interpretation of the coefficients -0.163 in the first column with the OLS model and -0.186 with the Heckman model). But for both the full sample of workers with earnings and for workers with disabilities, the marginal gains in earnings associated with higher educational attainment tend to be large.

For example, again in Burkina Faso, workers with primary education tend to make 50 percent more than those with no education at all, and the gain is similar when looking only at workers with a disability. When testing formally for equality in the gains from educational attainment between the two groups, in most cases the tests suggest no statistically significant differences. This pattern is stable across countries, with the exception of The Gambia where the gains from higher educational attainment for workers with disabilities are often not statistically significant and, in some cases, negative, possibly in part due to small sample sizes that lead to less robust coefficients. Overall though, the analysis suggests that the economic benefits from investing in the education of children with disabilities are likely to be large when they reach adulthood, as is the case for investments in the education of children without a disability.

Table 9: Marginal Gain in Earnings from Higher Educational Attainment and Impact of Disability (%)

Sample: Four Countries

	Full Sample with Earnings		Workers with Disabilities		Full Sample with Earnings		Workers with Disabilities		
	OLS	Heckman	OLS	Heckman	OLS	Heckman	OLS	Heckman	
Burkina Faso					The Gambia				
Primary	0.516	0.520	0.425	0.556	0.543	NS	-0.877	NS	
Secondary	0.803	0.995	1.340	1.318	0.714	NS	-0.671	-0.588	
Tertiary	1.108	1.150	1.466	1.549	1.239	0.724	-	-	
Disability	-0.163	-0.186	NA	NA	-0.315	NS	NA	NA	
Rwanda					The Senegal				
Primary	0.382	0.348	0.468	0.442	0.098	NS	0.266	NS	
Secondary	1.429	1.362	1.587	1.606	0.454	0.573	0.621	0.954	
Tertiary	2.627	2.550	2.273	2.270	1.323	1.412	1.328	1.574	
Disability	-0.166	-0.159	NA	NA	-0.064	NS	NA	NA	

Source: Authors' estimation.

Note: NA = Not applicable. NS = Not statistically significant at the ten percent level.



CONCLUSION

As noted in the introduction, to make the case for investments in the education of children with disabilities, a simple theory of change suggests that three components may be needed: (1) showing that there is a need for interventions by documenting gaps in education outcomes between children with and without disabilities; (2) arguing that better educational outcomes for children with disabilities can make a major difference not only for them but also for society as a whole – including in economic term; and (3) demonstrating that successful interventions are feasible and affordable. This note contributes to the first two components of this theory of change. The note has provided a simple analysis of education outcomes for children with and without disabilities using a range of datasets. Children with disabilities have been shown to be at a substantial disadvantage for ever enrolling in school, completing primary or secondary education, or being literate. The gaps between children with and without disabilities have been increasing over time. In addition, students with hearing or seeing difficulties in the classroom tend to perform less well when in school in comparison to students without such difficulties. Finally, the lack of adequate school infrastructure for children with disabilities is an important reason for children dropping out of primary school according to responses provided by teachers on the factors that lead to such drop-outs.

In essence, children with disabilities are being left behind by efforts to improve education opportunities for all children in sub-Saharan Africa. Questions in student assessments about school policies related to inclusive education suggest that little is done currently for such inclusion. This represents a potentially large loss for countries because analysis of earnings in household surveys shows that the returns to the education for children with disabilities are as large as those for children without disabilities. There is a clear economic rationale in addition to a rights-based approach for investing in the education of children with disabilities in sub-Saharan Africa as elsewhere.

The Sustainable Development Goals call for building and upgrading education facilities that are child, disability and gender sensitive and also provide safe, inclusive and effective learning environments. While progress continues to be achieved to reduce gender and wealth gaps in education, progress is much too slow for children with disabilities. Ensuring that children with disabilities in sub-Saharan Africa have opportunities to go to school and learn while in school should be a top priority to end the persistent crisis of so many of these children remaining out-of-school or dropping out prematurely, and not learning nearly enough while in school, with often dramatic consequences for their prospects later in life.



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