

Prologue

Optimizing Education Outcomes: High-Return Investments in School Health for Increased Participation and Learning was developed by the Global Partnership for Education and Disease Control Priorities and published by the World Bank to increase access within the education sector to the latest child-centered evidence about how health affects education outcomes in poor countries—and what to do about it.

This book has its origins in a 30-year effort by the global health sector, initiated at the World Bank, to identify the highest return investments in health in low- and middle-income countries (LMICs), informing the publication of the *Disease Control Priorities* series. The third edition (*DCP3*), published in 2015–18 and supported by the Bill & Melinda Gates Foundation, notably includes volume 8, *Child and Adolescent Health and Development* (Bundy and others 2017). It provides for the first time an expanded analysis of how health status affects the development of school-age children, how ill health affects children’s ability to benefit from education, and how this might manifest differently for girls and boys at different ages.

This new book brings together the key chapters of volume 8 that are of particular relevance to the global education sector, providing the latest evidence to inform financing decisions for better education results. The chapters show that health is important to optimize educational outcomes. While the prospects for synergy between health and education are great, they are currently undervalued and underexploited.

Approximately US\$210 billion is spent annually on educating school-age children in low- and lower-middle-income countries. From the work of the International Commission on Financing Education Opportunity, it is apparent that this expenditure is woefully inadequate to enable every girl and boy to receive a quality education

through a full cycle of schooling. Financing from all sources, including domestic resources and official development assistance, must increase. Of current spending, only about US\$2 billion addresses the health needs of children ages 5 to 19 years, whereas some US\$29 billion is invested in children under age 5. It is therefore clear that resourcing for the health of school-age children and adolescents must also increase substantially.

BUILDING ON THE SUCCESSES IN EDUCATION

The purpose of this education version of volume 8 is to help policy makers, planners, and practitioners build on the remarkable successes achieved in education during the 15 years of the Millennium Development Goals (MDG) era. It also aims to support rational and informed choices about high-return investments to optimize outcomes during the era of the Sustainable Development Goals (SDG) through 2030 and beyond.

Children entering school now will become adults by 2030. The investments made between now and then in education, health, and nutrition will do much to determine how well these young women and men are equipped and prepared to fulfill their potential in life, for the betterment of themselves, their families, their nations, and the world.

The benefits of a quality education are numerous, well researched, and well documented; they include a broad range of private and public returns to investments. Educating girls in particular has been shown to have a multiplier effect, not only on their own health and economic prospects, but also on the survival, health, education, and well-being of their children, with positive intergenerational impacts on poverty reduction. Educating girls and young women has contributed to

one-third of the reductions in adult mortality over the past five decades.

Chapter 30 in this volume specifically focuses on the health returns to education and draws some important conclusions. First, returns to education are substantially higher than generally understood, and it is important for donors and countries to reflect this in their investment decisions. Second, the results strongly indicate that female education matters more than male education in achieving health outcomes. Overall, investments targeted to girls' education yield a substantial return on health, and increased efforts are needed to close remaining gender gaps. It is vital to invest in what works at scale and what is affordable, to ensure that all girls and boys, young women and young men, everywhere, receive a quality education.

In 2000, at the World Education Forum in Dakar, Senegal, there was formal recognition that health was a key determinant of the ability of children to respond to education, and there was a commitment from many countries to improve school health programs (Barry 2000). The expanded commentary on the Dakar Framework for Action describes three ways that health relates to Education for All (EFA): as an input and condition required for learning, as an outcome of effective quality education, and as a sector that can and must collaborate with education to achieve EFA.

In 2015, at a World Education Forum (WEF) event in Incheon, the Republic of Korea, participants affirmed the growing understanding of the key interactions between education and health. They called for countries to ensure that school health is included in follow-up planning and action. They also called for the mainstreaming of school policies and school health needs in costed and budgeted national education sector plans (FRESH 2015).

HEALTHY, WELL-NOURISHED STUDENTS LEARN BETTER

In low-income countries (LICs) in particular, illness and malnutrition prevent children from getting into school, participating regularly, and reaching their learning potential. The report entitled “The Learning Generation: Investing in Education for a Changing World” (International Commission on Financing Global Education Opportunity 2016) estimates that students miss 500 million school days because of ill health in LICs, often from preventable conditions. Late enrollment and entry to school, patchy attendance, dropping out, repetition of grades, and poor performance all contribute to educational system inefficiencies and undermine education investments.

Educators are well aware that increased spending on education does not, in and of itself, lead to better learning outcomes. Child-centered analyses have shown repeatedly that marked differences exist in outcomes among individuals and different groups of children. The numerous reasons include the impact of student socioeconomic backgrounds on learning potential and achievement. In many countries, the gap in learning between poorer and wealthier students is significant; this gap worsens when the effects of gender, mother's education status, disability, and location are factored in. In LICs, the health of school-age children can be a key factor, and targeted approaches are essential to direct finances most strategically to deliver the strongest results; the current analysis provides evidence to guide decision making on these strategic investments.

OVERCOMING THE LEARNING CRISIS: A CROSS-SECTORAL AND COLLABORATIVE ENDEAVOR

Among the major challenges facing the education sector and education systems globally, broad consensus exists that improving learning achievement and overcoming marginalization and exclusion are top priorities. As the *World Development Report 2018: Learning to Realize Education's Promise* (World Bank 2018) states, schooling is not the same as learning, and schooling without learning is more than a wasted opportunity—it is an injustice. More than 240 million students in school in LICs are not expected to learn much. Just 8 percent will likely learn basic primary level skills and 23 percent basic secondary level skills. By 2030, more than 825 million young people are unlikely to have the basic secondary skills needed to get a job.

Clearly, new thinking and innovative approaches are urgently needed to overcome this learning crisis. Cross-sectoral collaboration, cooperation, and investments can support the achievement of the ambitious SDG goals for education, as well as contribute to the achievement of the health, gender equality, and wider SDG goals. Planning for education and health investments together can support the optimization of the full range of societal benefits of education (GPE 2016).

“The Learning Generation” report notes the positive effects of education on students' sexual and reproductive health, mental health, and physical health in terms of lowered risks of noncommunicable diseases in later life and fewer incidents of violence. The report also highlights some of the best-proven health practices for increasing enrollment, attendance, participation, and learning for girls and boys, and it recommends increasing investments in these areas.

School-based interventions have been proven to be effective and cost-effective in several areas, including malaria prevention, school feeding at primary level, nutrition supplementation, water and sanitation, and deworming in high-load areas (Bundy and Schultz 2016). For adolescent girls, in particular, investments in comprehensive sexuality education, reproductive health knowledge and related services, sanitary facilities, and iron supplementation are crucial to support enrollment and retention. Iron supplementation has been found to increase attention, concentration, and intelligence.

WHAT WORKS TO IMPROVE STUDENT PARTICIPATION AND LEARNING

This book sets out the best current evidence about what works in LMICs to increase student participation and learning. The analyses reaffirm the importance of health at school age, and identify key interventions for different age groups, relevant for the different needs of girls and boys, that are now proven to be worthwhile investments.

The key messages from the chapters in this volume include the following:

- Although investments in basic education for girls and boys ages 5 to 14 have been substantial, but still too low, investments in health interventions for children in this age range have been neglected.
- Three key phases of development have been identified: ages 5 to 9, when infection and malnutrition remain key constraints on development; ages 10 to 14, when significant physiological and behavioral changes are associated with puberty; and ages 15 to early 20s, when further brain restructuring and initiation of behaviors are life-long determinants of health.
- A package of essential interventions that is highly cost-effective and has high benefit-cost ratios can address the needs of ages 5 to 14, using a school-based approach.
- A similarly cost-effective package for ages 10 to 19 years is proposed for delivery through both nonschool mechanisms, such as the media and health services, as well as through secondary schools.
- Investments in education and schooling can be leveraged further by well-designed health interventions, and better design of educational programs can produce better health outcomes for students. The potential synergy between education and health is undervalued and returns on co-investments are rarely optimized.
- Age-appropriate and condition-specific health support, delivered through schools, is required for girls and boys to achieve their full potential as adults.

Although this may be the best available evidence, the picture remains unclear. Indeed, one important finding of volume 8 is that school-age children are the focus of less than 10 percent of the research effort on the health of children and that research on the links between health and education is particularly lacking. The global education sector needs to engage in the dialogue and decision making on research priorities and funding to ensure that these areas, and the impact on girls and boys at different ages, are the focus of future research efforts.

Schools as an Effective Platform for Health Interventions

The chapters in this volume confirm that schools are an effective platform for addressing the health needs of children and adolescents, particularly for students in primary and lower secondary grades (sometimes called *basic education*). Valuable, specific policy analyses on the range of interventions, packages, and policies relevant to school-age children and young people are provided. Essential cost-effective intervention packages that can be delivered with and through schools are described, assisting decision makers in allocating limited resources to achieve both education and health objectives. Importantly, the volume focuses on simple, safe, and well-tried interventions shown to be deliverable through schools, without becoming a burden on the primary role of schools as institutions of learning.

BOOSTING BOTH EDUCATION AND HEALTH OUTCOMES WITH MODEST INVESTMENTS

In many LMICs, the ambition to ensure a good quality education for all is tempered by both financial and resource constraints, requiring difficult choices to be made. The book sets out the economic case for leveraging domestic financing and development assistance funding, with practical and affordable health investments for girls and boys ages 5 to 14. It uses cost-effectiveness, extended cost-effectiveness, benefit-cost-analysis, and returns on investment to identify and prioritize investments at different ages. It also uses the school as a platform, to propose elements of an essential package that is costed, scalable, and particularly relevant in low-resource settings.

The chapters provide a detailed breakdown of the cost of components of the proposed essential package to promote the health of school-age children and adolescents. In summary, the aggregate cost in LICs per year is estimated at US\$430 million plus US\$43 million to include the human papillomavirus (HPV)

vaccine; in lower-middle-income countries, the estimate is US\$2,700 plus US\$74 million for the HPV vaccine. The total costs of the school-age package are about US\$10 per child in the 5-to-14 age group and US\$9 per adolescent in the 10-to-19 age group.

Analysis commissioned for “The Learning Generation” report found that for each US\$1 invested in an additional year of schooling in LICs, particularly for girls, earnings increase by US\$5 and earning and health benefits increase by US\$10. In middle-income countries, the increases are US\$3 and US\$4, respectively, for the same investment. For every US\$1 allocated to childhood immunizations, there is a \$44 net return rate on investment.

LMICs have a high proportion of young people in the population. With the successes in education that are due to commitments made during the EFA and MDG eras, more young people are in school than ever before; accordingly, investing in proven and affordable interventions that use schools as the platform to reach a high percentage of the population makes good sense. Modest investments in school-based health interventions can establish firm foundations and set the direction for a healthier and better educated population and a more prosperous and peaceful future. Such investments can benefit all students, particularly girls, children with disabilities, and marginalized groups, and they can help students to expand their life and economic opportunities.

School-Based Health Programs: Affordable and Scalable

Many countries are already implementing school-based health programs that have impact and are sustainable and scalable. These include a range of essential interventions, such as water and sanitation, and health investments, such as deworming and school feeding (Drake and others 2016; Drake, Burbano, and Bundy 2016). For the past 15 years, the use of FRESH (Focusing Resources for Effective School Health) (UNESCO and others 2000), a comprehensive evidence-based framework that promotes better education results through health interventions delivered by schools, has effectively supported collaboration and cross-sectoral planning, financing, implementation, and monitoring (Sarr and others 2017) around a framework of four components for schools. These components for schools are health-related school policies, safe water and sanitation facilities, skills-based health education, and health and nutrition services.

The FRESH framework (UNESCO and others 2000) was first proposed and adopted at the World Education Forum meeting in Dakar in 2000. At that time, an estimated 10 percent of education ministries in Sub-Saharan Africa had policies and activities that recognized the

importance of student health and nutrition for education outcomes. When this topic was reviewed at the ninth meeting of the High-Level Group for Education for All in Addis Ababa in 2010, school health programs had become nearly universal; however, programs varied considerably in terms of the quality and coverage of interventions. The need now is to go beyond the high-level policy implications of the FRESH framework and use available guidance, including the advice in this volume, to help the programs make a real contribution to education outcomes.

Proposed Packages of Interventions

This book provides education policy makers, planners, and practitioners with the latest evidence base and analysis on additional effective school-based health interventions that are both pro-poor and pro-girls. School health and nutrition programs can help level the playing field for the most vulnerable students: the poor, the sick, the disabled, and the malnourished. These are the children who require the greatest support throughout their schooling.

School-Age Girls and Boys

For ages 5 to 14, the essential package includes interventions such as tetanus toxoid and HPV vaccination, oral health promotion, vision screening and treatment, insecticide-treated mosquito net promotion and use, deworming, and school meals and school feeding fortified with micronutrients.

Adolescent Girls and Boys

For ages 10 to 19, the essential package includes interventions such as healthy lifestyle education, comprehensive sexuality education, adolescent-friendly health services within schools, nutrition education, and mental health education and counseling.

A Note on Water and Sanitation

Some education readers may wonder why volume 8 does not include the evidence for vital water and sanitation interventions. The rationale, according to health practitioners and the authors of this volume, is that water, sanitation, toilets, and hygiene services are key components of school construction efforts essential for the provision of quality education; these have, for the most part, been accepted and adopted by ministries of education for their education systems (World Bank 2011).

Menstrual hygiene management, also an important aspect of quality education, is a school health activity and can be coordinated with the necessary infrastructural improvements at schools, as needed. Although it is well established that adequate water and sanitation

facilities are necessary to ensure equitable access to education, systematic reviews of menstrual hygiene management interventions demonstrate that education and health research currently lacks the historical depth necessary to state with confidence which menstrual hygiene management interventions work best.

CONTRIBUTIONS FROM MINISTRIES OF EDUCATION AND THE EDUCATION SECTOR

In order for the planning and delivery of interventions to be effective, there needs to be engagement with, and partnership agreements among ministries of education and health, teachers and health workers, and schools and local communities. Student consultation, contribution, and participation are also vital.

Ministries of education and the education sector are asked to do the following to support efficient and effective implementation:

- Open their schools and provide the platform for health service delivery to support improved student health and increase student enrollment, regular attendance, participation, and learning.
- Provide the necessary foundation for effective delivery of school-based health interventions, including education personnel time and associated costs, for example; focal point training in the ministry of education centrally or at district level; and teacher training resources for focal points in schools.
- Ensure that the policy environment and sector plan includes and encourages the development and effective dissemination of education resources to train educators for health activities.
- Encourage and advocate for other line ministries and external partners, including civil society organizations and nongovernmental organization partners, to align with national education sector strategies and school health plans and offer training and personnel to deliver or support activities in schools; coordinate partner resources, expertise, financing, and inputs to boost coverage and streamline the delivery of health investments and interventions in schools.
- Provide the infrastructure necessary for a safe learning environment in schools, including access to water for drinking and washing, and provision of sanitation and hygiene facilities and services for pupils and staff at schools.

Funding These Investments

Given burgeoning populations, the expanding scale and scope of national education plans, and inevitable

budget constraints, the question of who will fund these investments and how is clearly very important. Chapter 20 in this volume acknowledges that the funding, implementation, and oversight of school health and nutrition programs do not tend to fall squarely within either the education or the health sector. Rather, many approaches, stakeholders, and collaborations are required to deliver health services in schools. The combination of education and health sector funding, alongside all domestic funding and external financing contributions, will enable the proposed essential packages to be fully funded and implemented.

Ministries of education are encouraged to work closely with ministries of health to make the case to fund school health investments jointly to the ministries of finance. They must be willing and able to fully exploit the experience, commitment, and contributions of the many partners outside of government (for example, civil society organizations, international nongovernmental organizations, and the private sector) and external funders (for example, the United Nations, bilateral and multilateral aid agencies, philanthropists and foundations, and the private sector).

MOVING FORWARD TOGETHER

Taken as a whole, the information presented in this book represents a strong economic case for investment and a robust body of analysis that can inform joint and consultative national education sector analysis and planning exercises. It can also support the preparation of practical, costed, and comprehensive school health policies and plans, in pursuit of the achievement of a quality education for all, leaving no child behind.

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NOTE

World Bank Income Classifications as of July 2014 are as follows, based on estimates of gross national income (GNI) per capita for 2013:

- Low-income countries (LICs) = US\$1,045 or less
- Middle-income countries (MICs) are subdivided:
 - (a) lower-middle-income = US\$1,046 to US\$4,125.
 - (b) upper-middle-income (UMICs) = US\$4,126 to US\$12,745.
- High-income countries (HICs) = US\$12,746 or more.

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