Technical and Vocational Education and Training:
Issues, Concerns and Prospects 26

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Bridging the Skills Gap

Innovations in Africa and Asia

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Foreword

Africa and Asia are now and will in the future be home to the largest number of youth in the world. Even though Asia's population aged 15–24 is projected to decline from 718 million in 2015 to 633 million in 2060, the region will still have the highest number of youth in the world until around 2080, when it will likely be surpassed by Africa.[1]

If gainfully employed, these large youth populations could be key to stimulating economic growth and development in their countries, the so-called demographic dividend. However, to maximize their employment opportunities, it is critical that they are equipped with relevant knowledge and skills before they enter the workforce. If they are not, the demographic dividend could instead become a demographic disaster. Worryingly, the youth unemployment rate, which is already three times that of adult unemployment rates (ILO, 2015), is expected to show no improvements in the coming years, emphasizing the urgent need to strengthen the school-to-work transition.

In *Bridging the Skills Gap: Innovations in Africa and Asia*, leading experts on youth employability and skills development **shed light on the challenges and opportunities surrounding secondary education for employment**. The issues explored include:

- Pressures of an increasingly interconnected global economy and rapid evolution of traditional labour roles
- Problems of secondary education access by disadvantaged groups
- Connecting secondary schools with employers and improving the relevance of what is taught for employment
- Refining vocational and general secondary curricula to boost youth employability
- Expanding soft skills development

[1] United Nations Department of Economic and Social Affairs. (2015). *Youth Population Trends and Sustainable Development.* [Fact sheet] Retrieved from http://www.un.org/en/development/desa/population/publications/pdf/popfacts/PopFacts_2015-1.pdf

This work draws on previous research by Results for Development (R4D) Institute around issues related to skills, education and economic development in 12 countries across Africa and Asia.[2] That analysis highlighted that, while technical and basic cognitive skills are still essential in the workplace, transferrable and non-cognitive skills such as communication, problem-solving, punctuality and flexibility are increasingly important. Crucially, these skills are not, for the most part, sufficiently emphasized in existing curricula and pedagogy. R4D identified models that are helping to bridge the skills gap, as well as common elements of successful programmes, including multi-stakeholder partnerships, updated pedagogy and innovative financing mechanisms.

Bridging the Skills Gap is relevant reading for a wide range of people. School administrators, curriculum specialists, teachers, vocational instructors and youth-focused programme practitioners can all draw on experts' analysis and real-life case studies to inform and improve their work.

The book contains contributions from 11 authors. It was conceived by Shubha Jayaram and Wambui Munge of R4D and Professor Bob Adamson, UNESCO Chair in Technical and Vocational Education and Training and Lifelong Learning at The Education University of Hong Kong. As an academic publishing in the fields of English language teaching, teacher education, comparative education, curriculum studies and higher education, Professor Adamson brings a breadth of knowledge that complements R4D's topical expertise. David Sorrell, an independent education consultant, and Nitika Jain, from the MGIEP in New Dehli, assisted with the editing.

I am certain that anyone committed to boosting youth employment will find something to spur them within the pages of this book, and I hope that they will use the lessons here to help young people harness their potential and become a part of the globalized economy.

Global Education, Results for Development Nicholas Burnett
Washington, DC, USA

[2] Results for Development (2013). *Innovative Secondary Education for Skills Enhancement (ISESE): Skills for Employability in Africa and Asia*. Washington DC: Results for Development (R4D)

Preface

Bridging the Skills Gap: Innovations in Africa and Asia

With the global increase in secondary education enrolment, it is clear that more youth and young adults with some secondary education are now entering the formal and informal labour market. Indeed, this was the highest level of attainment for 48 % of the global labour force in 2010, up from 39 % in 1980 – with sub-Saharan Africa projected to rise from 32 to 48 % from 2012 to 2020 alone (McKinsey Global Institute, 2012a, 2012b). It is, therefore, extremely important that relevant skills are taught within the classroom and that these adequately prepare youth for the world of work.

However, the skills gap highlighted in recent regional and global employer surveys suggests that this may not be happening. For instance, the 2012 Manpower Talent Shortage Survey (ManpowerGroup, 2012) indicated that about a third of employers cite the lack of skilled available applicants as the most common reason for not filling a job, and the World Bank, the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Labour Organization (ILO) have all devoted special issues to examining the skills development agenda for youth.

Given this context, from 2011 to 2013, the Results for Development (R4D) Institute worked to further explore this issue by focusing on two central questions: (1) what skills do youth need in order to gain employment and (2) how can education and training models effectively deliver these skills at the secondary level, from where most youth now enter the workforce? Supported by the Rockefeller Foundation through the Innovative Secondary Education for Skills Enhancement (ISESE) project, R4D and five regional research partners developed a series of 12 background studies and 3 synthesis papers on issues related to skills, education and

economic development in 12 focus countries across sub-Saharan Africa and Asia (R4D, 2013).[3,4,5,6]

Bridging the Skills Gap: Innovations in Africa and Asia seeks to probe deeper into themes and topics relevant to the skills discussion. The five core chapters of the book cover five themes raised in most discussions around youth employability, namely, inclusive skills development, technical skills, systemic curricular change, pedagogy reform and soft skills. Recent research and debate surrounding these themes will be explored with the support of two real-world case studies per chapter to illustrate successes, challenges and lessons learnt. Each chapter is authored by a set of experts with a range of regional perspectives in this field, including practitioners, researchers and academics:

1. **Inclusive skills development** addresses the theme of inclusive education and how programmes are working to ensure that disadvantaged groups – such as girls and disabled youth – have access to the same quality education and skills.

   Featured programmes: Pratham Open Schools (India) and IT Training for Students with Disabilities (Vietnam)
2. **Technical skills in the classroom** explore how technical skills and workplace learning are being integrated into secondary education to ensure that the youth obtain a holistic education that prepares them for work.

   Featured programmes: Lend-A-Hand India (India) and Optimizing Secondary Schools for Skills and Livelihoods (Pakistan)
3. **Systemic curricular change** explores how to incorporate important employability skills into mainstream secondary education curriculum and assessment systems or standardize a skills curriculum at the national level.

   Featured programmes: Education de Base programme (Senegal) and National Skill Development Corporation (India)
4. **Pedagogy reform** reviews how innovative pedagogy can be used to reform and redefine skills within secondary education.

   Featured programmes: Mindset Teach (South Africa) and Sikshana (India)
5. **Soft skills** focus on the importance of soft skills (also known as noncognitive or 'life' skills) for employment; this chapter will highlight models that emphasize soft skills as a means to prepare youth for work.

   Featured programmes: Educate! (Uganda) and Yuwa: Kicking it New School (India)

[3] Background studies are available here: http://r4d.org/knowledge-center/innovative-secondary-education-skills-enhancement-isese-phase-i-research

[4] Results for Development Institute. 2013. Skills for Employability in Africa and Asia: Innovative Secondary Education for Skills Enhancement Phase I Synthesis Reports

[5] Results for Development Institute. 2013. Pathways to Employability: Part II: Case Studies of Six Innovative Programs to Enhance Skills for Employability in Youth

[6] Jayaram, S., Hill, T., and Plaut, D. Reprint October 2013. Training Models for Employment in the Digital Economy. *Results for Development Institute.* Accessible from: http://r4d.org/knowledge-center/training-models-employment-digital-economy

The final chapter summarizes the key principles of successful skills development models and the overlapping themes that emerge from the research. This includes an overview of the overlaps, lessons, mechanisms and enabling environment that are crucial for effectively imparting skills and boosting youth employability.

Washington, DC, USA — Shubha Jayaram
Washington, DC, USA — Wambui Munge
Tai Po, Hong Kong — Bob Adamson
Tai Po, Hong Kong — David Sorrell
New Delhi, India — Nitika Jain

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This book would not have been possible without the excellent work of the featured projects. We thank them for their time and support.

[7] The authors are responsible for the choice and presentation of information in this edited book as well as for the opinions expressed therein, which are not necessarily those of their affiliated organisations.

Series Editor's Introduction

Work is a major feature of most people's lives. Not only does it provide them with the means to meet basic needs, such as food, clothing and shelter, but the type of work undertaken by individuals and groups also has a major impact on their self-identity, social status and standard of living. Technical and vocational education and training (TVET) is essentially mainly concerned with 'applied learning': that is, with the acquisition of knowledge, skills, values and ethics appropriate for the world of work to increase opportunities for productive work, sustainable livelihoods, personal empowerment and socio-economic development.

This Springer book series on skills development for employability (TVET) seeks to provide research based information about many key cutting-edge aspects of TVET. The series showcases best and innovative approaches to TVET and education for the world of work. In so doing it also seeks to create an effective bridge between research, policy and practice. It is a long-standing publications programme which commenced in 2005, the various volumes in this major Springer book series providing a comprehensive, in-depth picture of current issues, concerns and prospects in TVET, as they relate to both individual countries and worldwide.

This important book by Professor Bob Adamson and his colleagues at the Education University of Hong Kong, along with coresearchers from the education for development organization Results for Development, located in Washington D.C., examines the most effective ways of bridging the skills gap for youth, with particular reference to Africa and Asia. Based on a well-developed conceptual framework, the book presents ten groundbreaking case studies from Africa and Asia which examine key aspects of skills development for development (TVET) with particular reference to successful programmes which maximize the contribution of secondary schooling to meeting the pressing needs of youth, including those who are unemployed.

The authors in this volume argue that for teaching and learning programmes at the secondary level to be most effective and successful in meeting the needs of youth and society, it is essential they include components which promote harmonious school-to-work transition and noncognitive as well as cognitive skills and involve multi-stakeholder partnerships. The eminent researchers and practitioners

who have contributed chapters examine several matters of central importance including inclusive skills development to ensure that disadvantaged groups have equal access to high-quality and relevant skills development, the effective integration of technical skills and workplace learning into secondary education, curricular change to ensure that employability skills are integrated into the mainstream secondary education curriculum and assessment systems, innovative approaches to the reform of pedagogy and the importance of 'soft skills' in preparing youth for work.

This is an important, cutting-edge volume on a topic that is of great importance to researchers, policy makers and practitioners throughout the world. I have no doubt that this book will be widely read and that it will have an important impact on policy and practice concerning most effective ways of bridging the skills gap, with particular reference to meeting the needs of youth.

QAPCO Professional Chair in Vocational Studies Rupert Maclean
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Abbreviations and Acronyms

ADEA	Association for the Development of Education in Africa
ADIE	State Information Agency
ASER	Annual Status of Education Report
BAC	Business Advisory Council (Vietnam)
BREC	Blue Ribbon Employment Council
CASEL	Collaborative for Academic, Social, and Emotional Learning
CBOs	Community-based organisations
CODESRIA	Council for the Development of Social Science Research in Africa
COTVET	Council for Technical and Vocational Education and Training
CRS	Catholic Relief Services – US Catholic Conference of Catholic Bishops
CSR	Corporate social responsibility
CWD	Children with difficulties
DCO	District coordination officer
DEO	District education officer
DFID	Department for International Development
DOET	Department of Education and Training (Vietnam)
DPO	Disabled persons' organisation
EDB	Education de Base (Senegal)
DOE	Department of Education
EFA	Education for All
ESTIH	Hanoi College of Information Technology
FRI	*Formation Rapprochée Intensive* (Close Intensive Training) (Senegal)
GMR	Global Monitoring Report
GOS	Government of Senegal
HDI	Human development index
IBT	Introduction to Basic Technology
ICTs	Information and Communications Technologies
ILO	International Labour Organization
ISESE	Innovative Secondary Education for Skills Enhancement

ISSER	Institute of Statistical, Social and Economic Research
IT	Information technology
ITA	Idara-e-Taleem-o-Aagahi (Pakistan)
ITTP	Information Technology Training Program for People with Disabilities
IVWD	Inclusion of Vietnamese with Disabilities
JNVs	Jawahar Navodaya Vidyalayas
JVE	Junior vocational education
KYI	Karachi Youth Initiative
LAHI	Lend-A-Hand India
MCGM	Municipal Corporation of Greater Mumbai
MDGs	Millennium Development Goals
MoE	Ministry of Education
MOET	Ministry of Education and Training (Vietnam)
NAVTTC	National Vocational and Technical Training Commission
NGO	Nongovernmental organisation
NMSA	National Middle School Association
NSDC	National Skill Development Corporation (India)
NSDF	National Skill Development Fund (India)
NUEPA	National University of Educational Planning and Administration
NVEQF	National Vocational Education Qualifications Framework
OECD	Organisation for Economic Co-operation and Development
PDEF	*Programme Décennal de l'Education et de la Formation* (Education and Training Development Plan) (Senegal)
PISA	Programme for International Student Assessment
PLCs	Professional learning communities
POSE	Pratham Open School of Education
PPP	Public-private partnership
PSDF	Punjab Skills Development Fund (Pakistan)
PWD	People with disabilities
R4D	Results for Development Institute
RCT	Randomized control trial
RTE	The Right of Children to Free and Compulsory Education
SASs	Secondary academic schools
SEL	Social and emotional learning
SEN	Special educational needs
SMEs	Small and medium enterprises
SMS	Short messaging service
SSCs	Sector Skills Councils (India)
SSPE	Secondary specialised professional education
STEVA	Sindh Technical Education and Vocational Authority
STSs	Secondary technical schools
SWAaT	Social Welfare Academics and Training (Pakistan)
TALIS	Teaching and Learning International Survey
TAM	Teacher as mentor programme

TDRI	Thailand Development Research Institute
TEVTA	Technical Education and Vocational Training Authority (Pakistan)
TIMSS	Trends in International Mathematics and Science Study
TNA	Training needs assessment
TQM	Total quality management
TSSs	Technical secondary schools
TVET	Technical and vocational education and training
TVSD	Technical and vocational skills development
UIS	UNESCO Institute for Statistics
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNESCO	United Nations Educational, Scientific and Cultural Organization
UPL	UNILEVER Private Limited
USAID	US Agency for International Development
VCs	Vocational colleges
VNIES	Vietnam National Institute of Education Science
WHO	World Health Organization
WSQ	Workforce Skills Qualification

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Chapter 1
Diagnosing the Skill Gap

Shubha Jayaram and Michelle Engmann

Over the course of 2011–2013, Results for Development Institute (R4D) worked closely with five partners in Africa and Asia to understand the demand and supply side of the employability issue. Twelve focus countries were selected in each region for the research, covering Francophone Africa, East Africa, South Asia, and Southeast Asia (R4D, 2013).

Eighty-three enterprises in an array of sectors were surveyed across sub-Saharan Africa (Fig. 1.1), with two-thirds being small and medium enterprises (SMEs). In Southeast Asia, 21 employers were directly surveyed in Vietnam, while the 2008 employer survey data was obtained from the Cambodian Federation of Employers and Business Associations[1] and the Thailand Labor Demand of Establishment Survey.[2] The former surveyed 220 enterprises while the latter covered 190,024 enterprises. Meanwhile, 87 leaders from high growth sectors were interviewed in focus groups across five cities in South Asia (specifically, Dhaka, Delhi, Bhopal, Mumbai, and Lahore).

This chapter identifies and analyzes the skill gap while also indicating the nature of the skills required in Africa and Asia. It specifically discusses the results of the

[1] BDLINK Cambodia Co., Ltd. 2008. Youth and Employment: Bridging the Gap http://www.ilo.org/public/english/dialogue/actemp/downloads/projects/youth/cambodia_surveyreport2008_en.pdf

[2] Labor Demand of Establishment Survey, National Statistical Office, Thailand. 2008 http://web.nso.go.th/en/pub/soc/521215ldoes.htm

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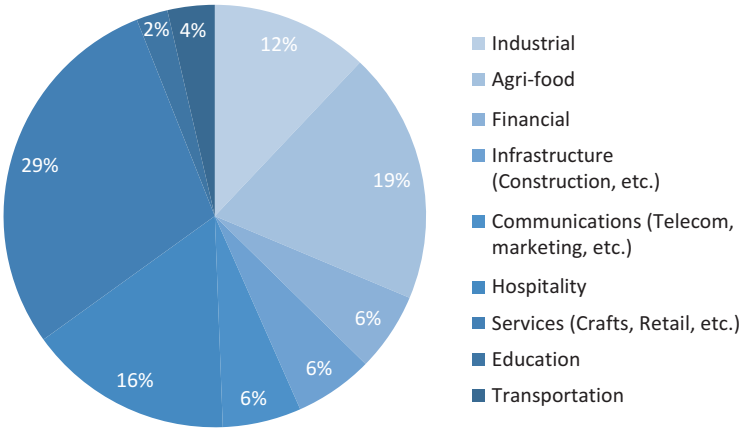

Fig. 1.1 Profile of enterprises surveyed in sub-Saharan Africa

ISESE study conducted by R4D in 2012 and draws directly from that research (R4D, 2013).

What Skills Are Needed for Employability?

Africa

This section draws on the research conducted by the Council for the Development of Social Science Research in Africa (CODESRIA) (Lututala, 2012). Eighty-three employers in Benin, Burkina Faso, Kenya, Senegal, and Uganda were interviewed. The major skill gaps in Africa are cognitive (especially numeracy and critical thinking), non-cognitive (especially communication, leadership, and decision-making), and technical (depends on the industry). Non-cognitive skills are becoming increasingly important as economies change.

In Benin, employers prefer employees with some university education. Employers seem to primarily prioritize non-cognitive or "social" skills, and the principal issue at the secondary level is the excessively general education of school leavers. Employers outside the public sector (which, along with the informal economy, attracts the majority of the general baccalaureate (Bac) students) attribute this to the fact that the bulk of those who complete secondary school to the Bac level take the general Bac (80 % compared to only 20 % for the technical Bac). Most fail the Bac, as the success rate is only around 30 %. This lack of technical skills is as much as an issue in Benin as non-cognitive factors.

In Senegal, employers from SMEs tend to focus on the need for cognitive skills, while in larger enterprises, emphasis is put on both cognitive and non-cognitive skills. Cumulative survey results showed that 75 % of employers prioritized theo-

retical knowledge and an understanding of procedures, methods, structures, or models, while 25 % focused on the practical or non-cognitive skills.

In Burkina Faso, employers prioritize non-cognitive skills (motivation, discipline, and drive to work) and cognitive skills (reading and writing). Meanwhile, in both Burkina and Uganda, technical and vocational skills are needed in sectors like finance and construction. Similarly, in Kenya, employers are concerned with cognitive skills (basic knowledge, the level of educational attainment, and critical thinking) and non-cognitive skills (attitudes, communication skills, flexibility, and adaptability).

Overwhelmingly, employers believe that the theoretical knowledge acquired in the classroom is just the "tip of the iceberg" and that it is insufficient by itself. All employers look for a varying mix of non-cognitive or technical skills (depending on the sector). Interestingly, employers felt that schooling should deliver the fundamental skills for employability to youth, so that employers can then conduct on-the-job training that is specific to their needs.

The 2012 Association for the Development of Education in Africa (ADEA) Triennial on Education and Training in Africa (Ndoye & Walther, 2012) highlighted similar skill needs and described three basic capacities or common core skills that are needed for sustainable development in Africa. First, communication skills and "learning to learn" are crucial. These capacities include literacy, numeracy, and cognitive skills. Second, youth need to acquire social or citizenship skills (for instance, being able to cooperate with others, manage conflicts, etc.) and work-related skills for being able to function in the workplace. Lastly, life skills, personal development skills, and being able to contribute to a Pan-African identity are key.

South Asia

This section draws on the report by the National University of Educational Planning and Administration (NUEPA) on curricula skills in South and Southeast Asia (Sirohi & Singh, 2012). Focus groups with 87 employers were conducted in five cities: New Delhi, Mumbai, and Bhopal in India; Lahore in Pakistan; and Dhaka in Bangladesh. In total, 49 employers were interviewed in India, while a total of 19 were interviewed in the remaining two cities. The participants represented the high growth sectors in the region, and many were directly involved in recruiting and training youth. The focus groups focused on four areas: perception of skills, requirement of general skills, possibility of acquiring skills at school, and sector-specific skill gaps.

The key skill gaps identified are listed in Table 1.1 below. There are perhaps two clear common themes emerging from the employer interviews across the three South Asian countries. The first is the importance of non-cognitive skills, especially communication, leadership, honesty/ethics, teamwork, and flexibility (Fig. 1.2). The second is the importance of being able to learn – whether explicit as in the case of Mumbai or implicit as in many of the others (Delhi: critical thinking and analytical skills; Bhopal: quest for knowledge; Lahore: conceptual understanding). Another

Table 1.1 Skill needs in South Asia

Delhi	Mumbai	Bhopal	Lahore	Dhaka
Non-cognitive				
Communication	Aptitude	Quest for knowledge	Voluntarism	Diligence
Leadership	Willingness to learn	Good communication skill	Leadership	Interpersonal skills
	Appearance and personality	Teamwork and social interaction	Career planning	Behavioral skills
	Diligence and hard working	Quick responsiveness	Communication	Adaptability
	Influencing skills	Time management	Entrepreneurial skills	Time management
	Multitasking	Positive thinking and attitude	Attitude	Attitude
				Dignity of labor
Cognitive				
Critical thinking	3R's		Conceptual understanding	
Specific and technical skills				
	Problem-solving	Flexibility and adaptability	Hands-on experience	Secretarial skills
		Physical fitness and stamina		Language
				ICT
				Business acumen
				Negotiations skill
				Secretarial skills
				Accounting skills
				Kaizen method
Values				
		Values and ethics	Loyalty	Understanding
		Honesty	Respect for seniors	Commitment
		Commitment and dedication		Sincerity

theme that came out of the employer focus groups in South Asia was a lack of adequately trained and supported teachers at secondary schools (both general and technical/vocational) and their lack of understanding of what is relevant to employers. Teacher training remains a pressing issue; poorly trained teachers result in outdated modes of pedagogy and constrain learning outcomes.

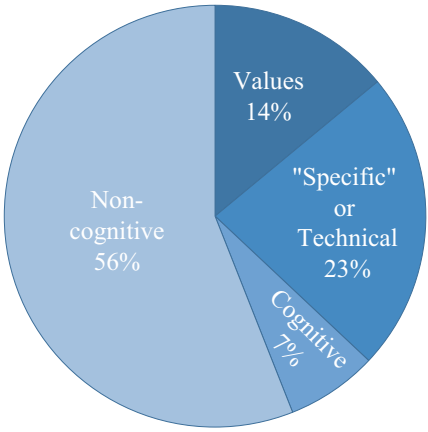

Fig. 1.2 Skills prioritized by employers in South Asia

Southeast Asia

A study conducted in 2012 by the Thailand Development Research Institute (TDRI) focused on skills for employability in Southeast Asia (Chalamwong, Hongprayoon, & Suebnusorn, 2012). Three countries were studied in depth: Cambodia and Thailand through a secondary analysis of large-scale surveys conducted in 2008 and Vietnam using primary data from a newly conducted survey covering 21 employers. Employer survey data from 2008 were obtained from the Cambodian Federation of Employers and Business Associations and the Thailand Labor Demand of Establishment Survey. The former surveyed 220 enterprises, while the latter covered 190,024 enterprises. In all three, employers generally consider that the skills acquired in formal secondary schooling do not meet their demands, as the schooling is too supply driven and insufficiently linked to demand from employers. Neither general nor vocational secondary education is equipping school leavers with the key skills needed (such as basic subject knowledge, analytical skills, management skills, technical skills, teamwork, foreign languages, computer and ICT skills, problem-solving skills, and interpersonal skills).

In Thailand, six skills are considered crucial: analytical skills, management, technical skills, teamwork, computer skills, and foreign language skills. Of these, the first four are considered more important than the last two. At all levels, from unskilled workers to experts, employers generally demand higher levels of skill than workers and school leavers can offer.

In Cambodia, survey data reveal that only 13 % of employers believe graduates have all or most of the skills needed for the labor market. Particularly missing are appropriate attitudes to work among unskilled workers, problem-solving skills among skilled workers, and analytical skills among professionals. The mismatch is caused largely by the limited capacity of the secondary education system to provide the needed skills at an adequate level of quality and relevant to employers' needs.

Employers in Vietnam are more concerned with some skills than with others. Highest on their list are information skills (particularly information interpretation and communication and computer processing of information), resource-related

skills (such as money and time management), and interpersonal skills (like teamwork and negotiation). Vietnamese employers seem less interested in leadership skills than those in other Southeast Asian countries. Formal education is expected to provide many of these skills – although its role may vary depending on the particular skill. Employers' expectations for information skills are largely met but those for resource-related and interpersonal skills are rarely so, and these are considered particularly weak areas.

The Informal Economy

Dalberg Global Development Advisors conducted a review of skill needs for the informal economy in 2012 – including a detailed look at four countries (Cambodia, India, Kenya, and Senegal) (Pina, Kotin, Hausman, & Macharia, 2012). The informal economy – defined by the World Bank as activities outside the purview of government regulation[3] – cannot be considered a temporary phenomenon, having grown steadily in most developing countries in both rural and urban areas. It is particularly important for women, who overwhelmingly work in it. All four aforementioned nations that are the focus of this study are transitioning from agriculture to manufacturing and service-based economies, both of which remain largely informal – although at very different paces. In India, for example, street vendors, home-based workers producing and packaging for small retailers, and construction workers are among the most common informal economy jobs. All four countries are also increasingly globalized and as such require improved technical and second-language education.

In the informal economy, cognitive, non-cognitive, and technical skills are all crucial. Importantly, however, non-cognitive skills may be even more important in the informal than in the informal economy – most informal workers are self-employed and thus need to be able to work along the entire value chain, running their own businesses. This requires non-cognitive skills such as discipline, confidence, negotiation, communication, and decision-making. It also requires entrepreneurial and business skills, such as financial management, market research, and marketing. Informal economy workers need to be more self-reliant than formal economy workers.

In general, informal workers have low education levels and, therefore, weak cognitive skills. Most informal workers do not have a secondary education; those who do have not acquired the crucial non-cognitive skills. In general, indeed, countries have made little progress promoting programs to develop non-cognitive skills.

The primary training available to informal workers is through apprenticeships – not connected to the school system, and much more significant. In Senegal, for

[3] World Bank http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALPROTECTION/EXTLM/0,contentMDK:20,224,904~menuPK:584,866~pagePK:148,956~piPK:216,618~theSitePK:390,615,00.html

instance, in 2007 there were some 10,000 young people enrolled in technical and vocational education and training (TVET) programs, while the motor repair sector alone had 440,000 apprentices.

However, apprenticeships have major limitations, as they may be too practical (whereas TVET programs may be too theoretical). An appropriate integration of theory and practice is required in both.

Apprenticeships may also insufficiently address non-cognitive skills, as the apprentice masters may or may not themselves have these skills and are certainly not likely to teach them automatically. Indeed, the Triennial on Education and Training in Africa (Ndoye & Walther, 2012) stressed that priority must be given to raising the skills levels of master craftsmen in the informal sector, as it is estimated that they train 90 % of youth who enter the labor market.

What Skills Are Emphasized in Curricula?

Secondary education suffers from being thought of as a route to higher education rather than itself being a terminal stage in education. Yet secondary education is increasingly the level from which youth enter the labor force, as secondary enrolments increase in the wake of massive enrolment advances at primary level (R4D, 2013; ILO, 2012, 2013). As secondary education moves from elite to a mass sector, a major rethink therefore is needed of the skills acquired at this level.

Students acquire skills in school and outside school. In secondary school they acquire both general academic and, for some, vocational skills. With exceptions, vocational education has been relatively neglected compared to academic secondary education (R4D, 2013). There are some good reasons for this, such as the relative returns and the high unit costs. But this relative neglect does not make sense in the face of specific skill shortages. The problem has not been the existence of vocational education but rather that it has not been targeted toward specific short-term skill needs and that it has not been practical enough. To exaggerate only very slightly, there is not a strong argument for the current norm of general TVET education, which is more expensive per student than general academic secondary education. There is, however, a very strong argument for practically oriented TVET aimed at specific skill shortages.

Africa

Conducting similar studies in Africa is the Institute of Statistical, Social, and Economic Research (ISSER) (Anarfi & Appiah, 2012). The secondary curricula in the four African study countries of Benin, Ghana, Kenya, and Senegal emphasize cognitive skills (literacy, numeracy, and scientific literacy), some non-cognitive skills (creativity, persistence, reliability, and communication), and specific

technology or technical skills. Central and Southern African countries have not been included thus far in the ISESE project.

With some slight variations, the skills acquired by African youth appear to be the same in both West and East Africa. The education systems, both general and vocational, are undergoing reform in many countries, which makes for some differences between skills students currently have and those that future students will likely have. Behind some of these reforms are two themes – reducing the total load of the curriculum, which has grown too heavy in many countries (notably Kenya), and trying to orient learning more toward employment (notably Ghana).

The most important of these reforms are in vocational education. TVET curricula have traditionally been driven more by academic progression than by future employment. Current reforms are designed to do two things: include some compulsory core skills and make them more practical. This move was aided by the need for a move away from traditional TVET to a broader concept of technical and vocational skills development (TVSD) that is more responsive to market demand. In Ghana, for example, TVET curricula now insist also on compulsory English, mathematics, social studies, and integrated science. In Mali, Senegal, and Togo, for example, TVET courses are being restructured to now include apprenticeships. In Ghana, the TVET program is not confined to the Ministry of Education but is run by eight other ministries and several private entities with a single body – Council for Technical and Vocational Education and Training (COTVET) – overseeing all delivery. In Kenya, some secondary schools have been vocationalized to include agriculture, business, computing, home science, and industrial education, but with the maintenance of compulsory core skills. Still generally absent, however, are direct links between schools and employers and a role for employers in the governance of education (R4D, 2013).

Many of these reforms also go some way to add what might be called generic vocational skills to academic secondary education (ICT, for example, is now being emphasized in Ghana's secondary schools) in addition to adding core courses to vocational education. There is, thus, some convergence emerging between general and vocational secondary schools or streams – although there remains a perception that vocational education is somehow inferior and most suitable for those who do not do well in academic education (R4D, 2013; ILO, 2013). Vocational education is not generally seen as potentially leading also to higher education unlike academic secondary education.

Both general secondary and TVET courses remain fairly differentiated by gender. Female students remain more inclined toward non-scientific general secondary education and toward life skills and commercial courses, while males are more inclined toward sciences, mathematics, technical, and industrial subjects.

Because the private sector is often involved in the delivery of TVET, there is much more variation in TVET curricula than in general secondary ones. Some of the private technical institutes in Ghana, for example, use curricula and certification that are different from the Ghana Education Service curricula or certification (R4D, 2013). A particular issue in Africa is that of extracurricular activities. These can often provide a vehicle for acquiring non-cognitive skills. Extracurricular activities

receive very little attention from teachers, however, even when they are formally part of the curriculum.

Asia

Another study conducted by NUEPA (Srivastava & Khare, 2012) is the focus of this section on Asia. Separation into general academic and vocational secondary education occurs at different stages in Asia, most commonly after completion of junior secondary school. And, as in Africa, most countries are currently implementing curricular reforms to better articulate skills.

Vocational education carries less of a stigma in Asia than in Africa. The effective use of vocational education is often said to be one of the factors behind the economic success of the "Asian Tigers" in Southeast Asia. All countries in South Asia are moving toward a skills development orientation, including Afghanistan (2007), Bangladesh (2011), Nepal (2007), Pakistan (2009), and Sri Lanka (2009) – including the creation of skills qualification frameworks like the National Vocational Education Qualifications Framework (NVEQF) recently adopted in India. A key reason for having these frameworks is to ensure that those who do pursue vocational education do not become immobile within the education system and can still have the possibility to go on to higher technical education – a first important step in moving toward lifelong learning. For the same purpose, Thailand has systems of credit transfer and recognition between different types of educational qualifications and institutions.

All countries are also moving toward more cooperation with the private sector to deliver vocational education. Countries that have permitted very early vocational specialization, like Pakistan and Vietnam, have ended up with more segmented education systems and with shortages of medium-skill and technical workers. As expected, this is much more of an issue when the quality of vocational education is weaker.

An analysis of Asian countries' curricula shows that all have at least some national requirements for secondary schools for both academic and vocational program, including mother tongue language, foreign languages, mathematics, science, and social science. Particularly important are English language, life skills, and ICT skills. This includes vocational schools as well as general academic ones, so there is considerably more convergence between the streams than there is currently in Africa. All countries have moved or are moving to articulate the skills to be imparted in both academic and vocational streams – this is the case in Thailand, Malaysia, and Indonesia and is coming more slowly in South Asia, especially in Bangladesh and India. In all these countries, however, these curricula are largely defined in terms of cognitive and technical skills; largely missing are the non-cognitive skills so sought by employers. Even where there has been some attempt to modify the curriculum in the non-cognitive direction, it has been relatively limited and has

tended to focus most on specific if non-traditional skills, e.g., Sri Lanka's attempt to introduce entrepreneurship (R4D, 2013).

While the curricula can be – and are being – reformed and improved, the curriculum itself is not the major reason that students in all the Asian countries fall short of employers' skill expectations. The real problem in Asia is that the teachers who teach the curriculum are not sufficiently effective. Most teachers take a "direct transmission" view of student learning, seeing their job as to impart specific knowledge, rather than the constructivist view now common to most Asian curricula which implies that teachers should be much more enablers of learning. Math and science subjects, for example, are taught more for examinations using rote learning than for practical applications. Grammar is considered more important than communication. No developing Asian country uses any framework for assessing teacher effectiveness, in the way that the Teaching and Learning International Survey (TALIS), for example, is used on some Organization for Economic Co-operation and Development (OECD) countries like Australia.

Discussion

The team working on the ISESE study met in Bellagio, Italy, in 2012 to discuss preliminary findings,[4] upon which this section is based. Prior to beginning this work, the project team had anticipated that there would be important regional or per capita income differences in terms of skill needs expressed by employers. We had also thought that there might be important differences between the skills required by large employers and by SMEs.

Indeed, there are some minor regional and per capita-related level of differences. What is striking, however, is the convergence across Africa and Asia of the importance of basic cognitive skills, non-cognitive or "soft" or "life" skills, and technical skills. What is also unusual is the crucial importance of non-cognitive skills for the informal economy – an area that has generally been neglected in all the attention given to skills in recent years. Given that women are more likely to be employed in the informal economy than are men, even more attention is clearly needed to strengthen non-cognitive skills for girls in secondary school.

The background research papers do not throw any light on possible differences between large employers and SMEs or between urban and rural areas, except that informal employment is more pervasive in rural zones.[5] While the ISESE project does not try to draw up a precise blueprint of what should be done, the research reported in

[4] The Bellagio review meeting was conducted in 2012 by R4D (with support from the Rockefeller Foundation) with 20 experts from multilateral banks, UN agencies, the private sector, and foundations to discuss preliminary findings of the ISESE study.

[5] Background studies are available here: http://r4d.org/knowledge-center/innovative-secondary-education-skills-enhancement-isese-phase-i-research

Table 1.2 Skills required by employers in the formal and informal sector

Cognitive skills	Non-cognitive skills	Specific and technical skills
Basic cognitive skills	Openness to learning	Language (mainly English)
Analytical and critical thinking	Communication: oral and written	Basic business skills
	Work habits: punctuality, application, etc.	ICT skills
	Teamwork	Often specific to context, but with both a practical and a theoretical perspective
	Personal integrity	
	Leadership	
	Entrepreneurialism	

this section does indicate that the skill set required by employers, both formal and informal, should now likely include something like the following (Table 1.2).

Several of the ISESE project findings (R4D, 2013) confirm what is already known from other studies on the skill gap. Some are especially novel, especially those to do with the informal economy, with teacher attitudes, and with convergence between general and vocational secondary education.

Major conclusions of this study relevant to skills are as follows:

Employers Seek Cognitive, Non-cognitive, and Technical Skills

- With minor differences, employers in both Africa and Asia are largely looking for the same set of skills in those they hire: basic cognitive skills, advanced skills (like critical thinking and problem-solving), non-cognitive skills, and technical skills.
- All these skills are important in both the formal and the informal economy, but non-cognitive skills are relatively even more important in the informal economy as most workers are self-employed and have to carry out a very wide range of tasks.
- Technical skills are only useful at the secondary level if they are very closely related to short-term demand in the labor market. General technical skills cost more to provide than general academic secondary ones with no higher returns to individuals or the economy.
- Even where technical skills are important, vocational education is still largely considered a second-class option – one which can limit students' futures.
- Transferable skills and being able to apply existing skills in a new context is particularly important in today's dynamic and fast-changing job market.

There Remains a Gender Dimension to Employment

- Proportionally more women are employed in the informal than in the formal sector.
- Girls tend to pursue science, mathematics, and technical skills less than boys.

Significant Curricular Reform Is Underway

- The general learning crisis that pervades primary education in Africa and South Asia – though less so in Southeast Asia – applies also to secondary education, where low-income countries do relatively poorly on international assessments compared to OECD and middle-income countries.
- There is significant curricular reform in both general secondary and vocational secondary education, designed to make both more relevant to employers. Vocational education increasingly has a skills development policy behind it.
- Mechanisms are being put in place in some, but not all, countries to provide better articulation between the general and vocational streams to permit much more flexibility across them and to avoid the vocational stream becoming one that cannot lead on to higher education.
- While curricular reform is useful, it takes time and is also not the key obstacle to improving skills.
- Curricular reform is particularly crucial, however, to incorporate non-cognitive skills.
- The focus should be on providing students with relevant skills for employability, not solely skills for employment. Entrepreneurial skills are also becoming increasingly important as the informal economy continues to represent a large part of the workforce.

Strengthening Pedagogy Is Crucial for Skill Acquisition

- Teachers' inability to think of teaching as enabling learning rather than as imparting factual knowledge, and also to understand the skills that students should have, is one of the major obstacles to improving secondary skill acquisition – especially for non-cognitive skills.
- Assessment methods should be modified to assess a wider range of skills; this shift may also then encourage a change in teaching methods.
- Extracurricular activities can be very important for acquiring non-cognitive skills, yet these activities are relatively downplayed by teachers – especially in Africa.
- Vocational education is insufficiently practical – particularly in Africa and South Asia.

While policy reforms in many developing countries now emphasize skills development, questions remain on the most important skills that result in employability, and how they lead to increased earnings (USAID, 2013). Our study reveals that ensuring youth are equipped with skills for employability will mean a combination of different priorities: closer linkages between employers, educators, and policymakers; shifts in pedagogy; and a greater focus on nurturing non-cognitive skills such as communication, leadership, and entrepreneurialism. Where technical skills are necessary for employment, a close connection between educational institutions and employers is vital. Ultimately, employers seek graduates who can thrive in the workforce, and an effective skills program will prepare youth for this transition.

References

Adams, A. V. (2011). *The role of skills development in overcoming social disadvantage.* Background paper commissioned for the Education for All Global Monitoring Report 2012. http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/pdf/gmr2012-ED-EFA-MRT-PI-04.pdf. Accessed on 6 Feb 2012.

Anarfi, J. K., & Appiah, E. N. (2012). *Skills defined by curricula: Sub-Saharan Africa.* Accra, Ghana: Institute for Statistical, Social and Economic Research (ISSER), University of Ghana. Accessed on 15 June 2016.

Chalamwong, Y., Hongprayoon, K., & Suebnusorn, W. (2012). *Skills for employability: Southeast Asia.* Bangkok: Thailand Development Research Institute (TDRI). Accessed on 15 June 2016.

Inter-American Development Bank. (2012). *Youth employment: Two ideas that work.* http://www.iadb.org/en/annual-meeting/2012/annual-meeting-article,6405.html?amarticleid=9865. Accessed on 6 Nov 2012.

ILO. (2012). *Global employment trends for youth 2012*. Geneva, Switzerland: International Labour Office.

ILO. (2013). *Global employment trends for youth 2013*. Geneva, Switzerland: International Labour Office.

Lututala, B. M. (2012). *Skills for employability in sub-Saharan Africa.* Dakar, Senegal: Council for the Development of Social Science Research in Africa (CODESRIA). Accessed on 15 June 2016.

ManpowerGroup. (2012). *Talent shortage survey – Research results*. http://www.manpowergroup.com/wps/wcm/connect/408f7067-ba9c-4c98-b0ec-dca74403a802/2015_Talent_Shortage_Survey-lo_res.pdf?MOD=AJPERES&ContentCache=NONE. Accessed on 15 June 2016.

McKinsey Global Institute. (2012a). *The world at work: Jobs, pay, and skills for 3.5 billion people.* http://www.mckinsey.com/insights/employment_and_growth/the_world_at_work. Accessed on 15 June 2016.

McKinsey Global Institute. (2012b). *Africa at work: Job creation and inclusive growth*. http://www.mckinsey.com/insights/africa/africa_at_work. Accessed on 15 June 2016.

Ndoye, M., & Walther, R. (2012). *Critical knowledge, skills and qualifications for accelerated and sustainable development in Africa.* ADEA 2012 Triennale on Education and Training in Africa. Tunis: Tunisia: Association for the Development of Education in Africa (ADEA).

Pina, P., Kotin, T., Hausman, V., & Macharia, E. (2012). *Skills for employability: The informal economy.* New York: Dalberg Global Development Advisors. Accessed on 15 June 2016.

Results for Development. (2013). *Innovative Secondary Education for Skills Enhancement (ISESE): Skills for employability in Africa and Asia*. Washington, DC: Results for Development (R4D).

Sirohi, V., & Singh, A. K. (2012). *Skills defined by curricula: South and Southeast Asia.* New Delhi: National University of Educational Planning and Administration (NUEPA). Accessed on 15 June 2016.

Srivastava, A., & Khare, M. (2012). *Skills for employability: South Asia.* New Delhi, India: National University of Educational Planning and Administration (NUEPA). Accessed on 15 June 2016.

USAID. (2013, February). *State of the field report: Examining the evidence in youth workforce development*. Accessed on 15 June 2016.

Chapter 2
Inclusive Skills Development

Modupe Adefeso-Olateju

The main focus of this chapter is on two broad groups of exclusion: people living with disabilities and girls who have dropped out of school. The first section highlights an array of spheres wherein educational exclusion is evident, whilst the following sections discuss innovative approaches to education and skills development for people living with disabilities and girls who have dropped out of school, respectively.

Inclusion in Skills Development: A Global Imperative

It is widely accepted that education and skills training form critical bedrocks for individual, national, and global development (McGrath & Akoojeeb, 2007; UNESCO, 2007). Education 'increases the productivity and efficiency of workers by increasing the cognitive stock of economically productive human capability, which is a product of innate abilities and investment in human beings' (Olaniyan & Okemakinde, 2008, p. 158). The development of the Asian Tigers was an accelerated sequel to the attainment of high levels of literacy, and China's accelerated progress, according to UNESCO, is also directly related to the fact that over 90 % of its population is literate (Keeley, 2007, p. 30). Human capital theorists such as Schultz (1962, 1963) and Becker (1964) argued that human capital not only increases the ability of individuals to fend for themselves but also their ability meaningfully contribute to national development. Although there are arguments that question the causal effect of education on economic development (see, e.g. Adebiyi, 2003; Stevens & Weale, 2004), there continue to persist strong relationships between

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educated and skilled citizenry and economic growth (Dauda, 2010; Hanushek & Woessmann, 2008; McGrath & Akoojeeb, 2007). Education is not only important for its instrumental value in providing citizens with life chances to become productive members of society; it is also significant for its intrinsic value to the individual.

From a rights-based approach, there is now broad consensus globally that it is the right of every human being to have the chance to acquire skills that they need in order to have a sustainable livelihood. From an economic growth paradigm, nation states continue to lose out on valuable human capital that excluded persons would ordinarily bring to the table, and this is compounded by the fact that the excluded are often also the vulnerable.

Against this background, it is, therefore, disturbing to note the extent to which people groups around the world continue to be precluded from opportunities for education and skills development. The United Nations (UN) highlights expressions of educational exclusion based on different factors: for example, exclusion is often based on socio-economic factors where the less affluent members of society are deprived of access to educational opportunities because they are unable to afford costs such as entrance fees, continuing tuition fees, costs of textbooks, and the opportunity cost in labour, of accessing educational opportunities (UNESCO, 2012a).

The situation is often worse for those in rural or inner-city environs or who are nomadic in nature. In 2012, one-third of the urban population in developing countries lived in slums (Kielland, 2015). Some of these slums are deemed illegal by their governments and, therefore excluded from national education planning. Consequently, educational access for persons living in such areas is not prioritized. For nomadic populations, the formal education provided is sometimes incompatible with their nomadic lifestyles (Krätli, 2001; Ruto et al., 2009). The requisite infrastructure and investments for their educational needs remain grossly underfunded or are not available (Dyer, 2015). In some cases, policy measures to redress low levels of access for nomadic populations have not been effective, with an example being Kenya where the abolition of school fees did not lead to a significant increase in the enrolment of nomads. Options such as long-distance learning have either received low levels of commitments or have remained unexplored (Dyer, 2015). The UNESCO Education for All Global Monitoring Report of 2015 highlights this challenge by stating that globally, pastoralist populations remain the most underserved by education (UNESCO, 2015).

Exclusion in some contexts also reflects in deliberate or inadvertent suppression of those deemed to be minorities by the dominant hegemony. Indicators include race or ethnicity and language. Race (in multiracial contexts) and ethnicity (in multiethnic contexts) have historically been the basis for social exclusion, with such deprivation often reflected in educational and economic exclusion. In Europe, for example, a 2011 survey administered amongst the Roma population in 11 countries revealed that at least 10 % of 7–15-year-olds were not enrolled in primary school (European Union Agency for Fundamental Rights & UNDP, 2012). In multicultural societies, language is a basis for exclusion by the majority population who speak the

dominant language. Multi-country analyses show that those in the minority population perform lower in education participation and attainment than their counterparts in the dominant population (UNESCO, 2015). Studies reveal that minority language speakers are at an economic disadvantage, as observed amongst the Q'eqchi', Hausa, and Kurdish speakers in Guatemala, Nigeria, and Turkey, respectively (UNESCO, 2015).

Gender inequality is also a powerful explication of marginalization, where girls and women are excluded from access to meaningful educational opportunities for several reasons – including culture and religion. The gendered dimension of exclusion is interwoven with and worsened by socio-economic factors such as poverty. In sub-Saharan Africa, for example, female enrolment and persistence remains a major problem in several countries including Guinea and Niger, where a staggering 70 % of the poorest girls did not attend primary school in 2012 (UNESCO, 2015).

Populations with disabilities have also been found to be at high risk of educational exclusion. Filmer and Schady (2008) found that disability is a more predictive factor of dropout than other factors such as socio-economic, rural location, and gender. Insufficient resources and a lack of understanding of the needs of disabled persons – amongst other challenges – are determinants of persistent exclusion.

Inclusive Skills Development for People Living with Disability

The first-ever World Report on Disability reveals that about one billion people in the world today live with some form of disability (WHO, 2011). Embedded in this staggering statistic is the reality that millions of persons living with disability continue to face significant challenges in accessing equal opportunities for education and skills development. There have been numerous policy statements enacted to address this challenge. At the global level, Article 24 Number 1 of the UN Convention on the Rights of Persons with Disability declares that:

> States Parties recognize the right of persons with disabilities to education. With a view to realizing this right without discrimination and on the basis of equal opportunity, States Parties shall ensure an inclusive education system at all levels and lifelong learning directed to: a) The full development of human potential and sense of dignity and self-worth, and the strengthening of respect for human rights, fundamental freedoms and human diversity; b) The development by persons with disabilities of their personality, talents and creativity, as well as their mental and physical abilities, to their fullest potential; c) Enabling persons with disabilities to participate effectively in a free society. Article 24 Number 1 of the UN Convention on the Rights of Persons with Disability (United Nations Convention on the Rights of Persons with Disabilities, 2015)

This convention, which came into force on 3 May 2008, has, at September 2014, 159 signatories and 151 parties, indicating an overwhelming willingness of nation states to promote the rights of persons living with disability. Several of these countries have developed action plans for implementing the convention in their states following a strategic approach to disability. Nevertheless significant challenges

continue to be faced in the area of implementation, particularly in developing countries. Some of these challenges include the inadequacy of useful and timely data on disability, socioculturally induced stigmatization of people living with disability, and low levels of public and private sector cooperation to address exclusion. One country that has made strides in bridging the public-private partnership (PPP) gap in skills education for the disabled is Vietnam.

Case Study 1: ICT for Students with Disabilities in Vietnam
David Sorrell

Background

Children and Youth with Disabilities in Vietnam

In Vietnam, more than six million people are living with disabilities (ISESE, 2012). Children and young people with disabilities are considered the most disadvantaged groups as far as accessing education, vocational training, and employment opportunities. Statistics show only 25 % of children with disabilities complete their primary education in Vietnam, compared to an overall figure of 75 % (ISESE, 2012). This is similarly the case with secondary school students. Only 2 % of people with disabilities (PWD) have access to vocational training (ISESE, 2012). The effective use of ICT in schools is considered important in Vietnamese schools according to policies of the Ministry of Education and Training (MOET).

Potential obstacles for students with disabilities in Vietnamese schools have been listed as: teachers receiving limited training to appropriately teach children with disabilities, access to classrooms and physical barriers, the financial concerns of some families only being able to educate one of their children with the child with a disability often sacrificed, and schools having limited resources and learning materials to adequately teach students with disabilities (ISESE, 2012). As a consequence, uneducated youth with disabilities are usually unemployed and stigmatized as being incapable of learning by society. Traditional schools and vocational training centres in Vietnam are considered inaccessible for students with disabilities, and, if schools were renovated to address such accessibility issues, the costs would be very high. There are also insufficient special educational needs (SEN) teachers in Vietnam. The training of additional SEN teachers is seen as both necessary and important; however, financial and time-consuming constraints are realized.

IT Employment, Education, and Training in Vietnam

Vietnamese society considers jobs in the IT sector to be more prestigious than other sectors. When PWD are employed by IT companies, the social stigma they encounter prior to their training is usually reduced. By employing people with disabilities, employers also learn their true capacity, and, as a result, there will be greater likelihood in employing more people with disabilities in the future. The self-esteem of PWD may also increase when considering their future when witnessing trained graduate successes.

Using ICT to reduce the barriers faced by children and youth with disabilities is considered more cost effective and easier to scale up than traditional methods (ISESE, 2012). In addition, such groups are better prepared to participate in modern economies that rely upon using ICT. Existing technical training programs for youth

with disabilities tend to focus on handicrafts and manual labour. Most IT training programs focus on skills such as data entry and basic office applications and are often chosen by trainees due to uncertainties of their own capabilities. In the Vietnamese educational system, lower secondary school students officially learn basic computer skills; however, 'students do not use computers to explore information and data for their learning. They are sometimes required to use computers and IT skills to participate in the online competition or program such as Olympic English or Maths at different school levels' (Dinh, 2014). PWDs, traditionally, have had limited access to IT education programs; however, as IT has been promoted more so in recent years, they are using 'ICT as tools to promote their communication, educational opportunities, and employment opportunities' (Dinh, 2014).

CRS and the IVWD Project

Catholic Relief Services (CRS) – United States Catholic Conference of Catholic Bishops – is the official international humanitarian agency of the Catholic community in the USA and operates in nearly 100 countries, aiming to alleviate suffering and provide assistance to people who are in need, regardless of their race, religion, or nationality.

The agency has operated in Vietnam since 1995 and made contributions to a series of legal documents, including the MOET Decision 23 in 2006 and National Disability Law in 2010 (Dinh, 2014). In order to build a comprehensive model for inclusive education for children with disabilities, CRS worked with the Ninh Binh and Quang Nam Provincial People's Committee, as well as the Department of Education and Training (DOET). The Inclusion of Vietnamese with Disabilities (IVWD) project commenced in 2005 – currently continuing until 2015 – and is funded by CRS and the United States Agency for International Development (USAID) (Dinh, 2014). Project interventions start from early childhood and preschool age and continue through primary and junior secondary school levels. In addition, youth with disabilities from 16 to 35 years of age are educated under the project. IVWD has promoted the enrolment of children with disabilities in schools. Teachers have been trained on appropriate educational methods to support children with disabilities in the classroom. Importantly, CRS has worked with MOET in close partnership 'to mainstream these piloted initiatives into the education system to institutionalize inclusive education at the national level' (Dinh, 2014).

CRS and the ITTP

The Information Technology Training Program (ITTP) for People with Disabilities began in May 2007 and is funded by USAID and developed by CRS. To date, 986 students with disabilities have received training in advanced IT skills, soft skills, and job searching skills; 70 % trained in advanced IT skills were able to find jobs; 226 students who received basic training were empowered to use IT and overcome communication barriers; 20 lecturers, school management, and governmental staff have received inclusive education management training; and 77 students and teachers have received training in gender-based violence (Dinh, 2014).

Program Aims

The program was designed to address the shortfall of employment opportunities for youth with disabilities and issues of health, community education, support or

vulnerable people, inclusive education for children with disabilities, and vocational training for youth with disabilities.

Program Implementation

CRS has worked with ITTP schools to promote social counselling activities. Social workers provide personal and social support to students who may have had few opportunities to socially interact with others outside their family and find their new environment to be challenging. Changing the mindset of families and students of their true ability and potential has been described as crucial to building confidence and increased social participation (Dinh, 2014).

Program Courses

Courses focus on soft and advanced ICT skills. Graduates are, therefore, in a stronger position for higher-earning employment. Soft skills include: how to conduct a job search, interviewing techniques, office interaction, teamwork, communication, confidence, and problem-solving. All are seen as advantageous for graduates by new employers of modern organizations, preparing them for 'independent life'. Advanced ICT skills include: graphic design, targeting advertising, and website development cheats (2–4 months); 3D modelling, targeting architecture, interior design, and real estate (3–6 months); and office network administration (6–12 months) (Jayaram et al., 2013).

Importantly, liaison exists between the training program provider and prospective employers to ensure programs are relevant in their content. This liaison, in turn, facilitates the job placement of trainees post-graduation. Program sustainability is also strengthened by employers through scholarships and the supply of used equipment.

To date, the program has offered ICT training to PWD in partnership with Hanoi College of Information Technology (ESTIH), Van Lang University, Ho Chi Minh City, and Dong-A University, Danang (Dinh, 2014).

CRS claims their model can be modified in order for other disadvantaged groups – for example, those living in remote areas or ethnic minorities – to be exposed to education and training opportunities using ICT (ISESE, 2012). Furthermore, CRS states increasingly more countries or areas will benefit from technology for education and training, as their ICT infrastructures are developed.

Program Tutors

Delivered by CRS and the Vietnam National Institute of Education Science (VNIES), ITTP school leaders and teachers have received training in areas including inclusive education management (Dinh, 2014). In addition, IT specialists with disabilities themselves – including two with visual impairment and one with a physical disability – have participated in the program as regular project consultants (Dinh, 2014). Plus, through the Association of Persons with Disabilities (APDs), ITTP school staff members are supported by PWDs in teaching students with disabilities (Dinh, 2014).

Program Financial Issues

In order to make training institutions financially sustainable, CRS works with MOET to build fundraising capacities. In addition, to reduce costs, the program is implemented in existing schools. Programs organized outside government-run

vocational training and rehabilitation centres are highly unlikely to receive government funding, and, consequently, sustainability and funding are key challenges the ITTP faces. Their annual budget is stated as more than US$200,000 (ISESE, 2012) and financially supported with a USAID grant, CRS private funding, school cost share, student and family contributions, and contributions from local organizations including computers and scholarships for students. Students with government-issued poverty certificates are entitled to receive a scholarship covering full training costs. Parents are actively encouraged to make contributions, as they have been found to help with both program sustainability and reduce the rate of dropouts. With regard to future funding, the CRS plans include: advocate for government funding, build the capacity of training centres in fundraising with both businesses and charities targeted, encourage family contributions including assisting students to access loans, and mix tuition paying non-disabled students with students with disabilities.

Costs are documented to be approximately US$225 per student per month for their tuition, activities, accommodation, and board (Jayaram et al., 2013). The cost could be considered slightly higher than other average vocational training programs organized in Vietnam; however, in order to adequately meet the needs of students with disabilities, increased resources are required, ensuring program effectiveness and high job placement continuance. Training partners and families contribute towards this cost. ITTP contributes at around US$150 per student per month; new graduates, however, incur an additional US$100–200 a month, increasing to US$500 or above due to project graduates gaining more work experience (Jayaram et al., 2013). By partnering with established schools, infrastructures and teachers are already in place, ensuring the sustainability of the program with like-minded and committed professionals and allowing for training to be quickly set up.

Involvement of Businesses

Businesses in Vietnam are requested by the government to recruit PWDs. However, few are said to adhere as many do not address barriers such as the working environment and PWD issues including access and equality (Dinh, 2014). Within the ITTP framework, CRS and school partners established the Business Advisory Council (BAC) consisting of key businesses in recruiting and supporting PWDs. Nguyet Dinh, Chief of Party of IVWD, commented:

As ITTP schools have different capacities to launch out-to-work initiatives with businesses and associations, CRS has, through other international non-governmental organizations (NGOs) (e.g., the Blue Ribbon Employment Council (BREC)) increased internships and recruitment opportunities for PWDs (Dinh, 2014).

Potential Program Barriers

Potential barriers hindering the success of the program and possible strategies to overcome them are described as PWDs: (1) having limited computer backgrounds, intensive training assumes students have no IT background, with a focus on hands-on activities; (2) lacking social skills and confidence, soft skill and training and social activities are a training component; (3) families being unable to afford tuition and living costs, scholarships established for PWD students on a needs basis; and (4) high stress levels from work or living by themselves, alumni associations are organized, peer support promoted, and awareness raised amongst employers in

ways to adequately support PWDs. In addition, the CRS state employers often have doubts with regard to the capacity of graduates. A strategy used to overcome this barrier is organizing internships, thus, allowing employers and graduates to ascertain their suitability before full commitment.

Governmental Initiatives and ITTP Long-Term Sustainability

For more than 15 years, CRS has collaborated with the Vietnamese government to promote the education of disadvantaged children, especially children with difficulties (CWD) (Dinh, 2014). Developed and endorsed by MOET, a number of pre- and in-service teacher training curricula and materials on inclusive education are used in approximately 9,000 preschools, in 15,000 primary schools, and in teacher training universities and colleges (Dinh, 2014). In addition, the building capacity of 6,498 teachers and university lecturers has been supported by CRS in inclusive approaches and methods to teach CWDs (Dinh, 2014). The situation, therefore, is improving in Vietnam with more teachers generally having the understanding and knowledge of how to educate CWDs. Teacher turnover is, however, still an issue in Vietnam (Dinh, 2014).

Teaching practical skills to help address practical problems faced by CWDs in their daily lessons are discussed as important to help them attain a quality education; however, in order for this to happen, teachers are still requiring support (Dinh, 2014). As a result, CRS continues to collaborate with partners including MOET to ensure CWDs benefit from policies the government has implemented and 'also real policy practice to enjoy a more equitable and quality education and other social services' (Dinh, 2014).

The long-term sustainability of ITTP is supported by mandates such as the Disability Law and other governmental circulars, with inclusive education now implemented at the local government level (Dinh, 2014). In addition, CRS and ITTP school partners document successes and lessons learnt in order to disseminate at the policy level, and, as ITTP schools promote inclusive education, it is possible for PWDs to enrol in regular IT training programs and benefit from the school's scholarship mechanism (Dinh, 2014).

Conclusion

People living with a disability are genuinely stigmatized and labelled as being unable to cope with the demands of modern-day society and particularly in the use of ICT. Vietnam is no exception.

The Ministry of Education and Training (MOET) is an advocate of the use of ICT. However, with only 25 % of children and youth with disabilities completing their primary or secondary education and only 2 % entering vocational education, there have been few opportunities for disadvantaged children and youth to be trained in the use of ICT. As a result, they are not equipped with the skills required by employers in the twenty-first century.

The IVWD project and ITTP outlined in this case study have served as important stepping stones for people living with a disability and demonstrate PWDs do have the ability to pursue employment opportunities that use ICT. Receiving training on the programs not only enhances PWDs' self-esteem but also educates society – including potential employers of their true capabilities. Importantly, the pressure on

low-income families is said to be lessened due to the high incomes of IT jobs than traditional manual labour or handicraft jobs assigned to people with disabilities in Vietnam. Significantly, CRS has claimed the program can be adapted for use with other disadvantaged groups in society and, thus, aims to reduce the numbers of people unable to access ICT and increase their chances of a better standard of living in the future.

Inclusive Skills Development for Learners That Drop Out of School

The second UNESCO Education For All goal states 'By 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to, and complete, free and compulsory primary education of good quality' (UNESCO, 2009), whilst the fifth goal states the need to eliminate gender disparities in primary and secondary education. A major challenge, however, that has affected the attainment of these goals is the high dropout rate across the world – particularly in developing countries.

UNESCO (2012b) highlights the reality that three regions represent the greatest challenge to primary school completion: in sub-Saharan Africa, 42 % of pupils leave school early, with 16 % of children failing to reach Grade 2; in South and West Asia, 33 out of 100 children who start school drop out before the last grade; and in Latin America and the Caribbean, 17 % of children leave school before the completion of primary education. The economic impact of dropout is immense as one considers that the pattern of returns to education shows an increase as people progress through successive levels of schooling (Aromolaran, 2004; Colclough, Kingdon, & Patrinos, 2010). Thus, the higher up the academic ladder people are able to progress, the greater the likelihood that they will become more economically productive. Furthermore, as countries around the world make strides to provide universal primary education, more attention is being paid to the provision, access to, and quality of secondary education. One such nation that is tackling the issue of high dropouts is India.

Case Study 2: Pratham Open School of Education: *Second Chance* (India)

Nitika Jain

Introduction

With a population of 1.2 billion, India is the second-most populous country on earth (India, 2013). In 2009, the Right of Children to Free and Compulsory Education (RTE) Act was passed (India, 2009), and this law has been instrumental in increasing enrolment rates of children aged 6–14-years to nearly 100 %. By contrast, secondary enrolment rates are approximately 50.3 % (NCEE, 2005).

Whilst several quality and equity gaps remain at primary level, increasingly, public attention is shifting to how the country can dramatically improve access, equity,

and quality of education at the secondary level (World Bank, 2009). Moreover, the Census Bureau of India estimates that 40 % of the Indian population is younger than 18 years and projects that, by 2015, 55 % of Indians will be younger than 20 (Basumatary, 2012). It is, therefore, an urgent priority to address access and quality challenges both at primary and secondary schooling levels.

A study by the World Bank finds that access to secondary education in India is highly inequitable, with disparities evident across gender, socio-economic lines, rural/urban location, and states (World Bank, 2009). It is estimated that 70 % of learners drop out before 10th grade (Basumatary, 2012) This statistic is even higher for poor girls, many of whom are also burdened by challenges such as child labour, early marriage, and the stigma of belonging to a lower caste (India, 2012).

One of NGO Pratham Delhi's Field Reflections included a report on 'Reasons for drop out amongst children living in slum areas of Delhi' (Pratham, 2008). Some of these reasons included migration, accessibility, family crises (financial, household responsibilities, etc.), and labour and tended to affect more girls than boys due the sociocultural norms and traditions that pertain in India. Experience from programs on the ground has also brought to light the fact that many children drop out of schools as a result of low learning levels and poor educational opportunities – only about 50 % of standard 5 children can read at standard 2 levels (ASER, 2014). Although these causes for high dropout rates cannot be generalized on a national level, it gives a fair idea of the kind of issues the government is dealing with.

Both the government and NGOs are introducing initiatives to tackle the issue of an increasing number of high-school dropouts in India. Pratham is one of the largest NGOs in India that works in the primary education sector, introducing programs and ventures that directly support the government's efforts in putting all children into school. The Pratham Open School of Education (POSE) Program is an initiative that provides school dropouts in rural areas with an alternative opportunity to learn. Through POSE, the organization aids girls in passing their 10th standard examinations whilst simultaneously providing them with the skills essential for employment. Started in 2011, the program is fundamentally a Second Chance program that assists girls who are at risk of dropping out as well as re-engages girls who have already left formal schooling (Mehta, 2015; Pratham, 2015).

This section will examine the POSE Model in detail, its costs, impact to date, success factors, and challenges. Given that the model has been successful across seven states in India, this case study will also briefly discuss the expansion of the program.

Program Overview

Pratham began in the slums of Mumbai in 1994, with the support of the United Nations Children's Fund (UNICEF) and the Municipal Corporation of Greater Mumbai (MCGM), and firmly established itself as an innovative learning organization in 1995. Their motto of 'Every child in school… and learning well' resonates their intention of introducing high-quality, low-cost, and replicable intervention programs to address existing issues within the educational system in India. Currently, the organization operates in almost every state in India and has, over time, become

a powerful voice in the education sector, affecting policies and decisions at both national and state level.

Pratham Open School of Education conducted its first pilot in 2011 in ten centres in Maharashtra, and 390 women who had previously dropped out of school enrolled. After undergoing training and learning with POSE, 209 appeared for their 10th standard examinations and 191 passed. Once the model was honed and refined, Pratham implemented it across states that had extremely high dropout rates (i.e., Rajasthan, Gujarat, etc.). The main objectives of the program include:

- To help girls and young women from disadvantaged communities complete their secondary school education
- To provide market-relevant vocational training to the students in order to increase their employability
- To focus on personality development and confidence building in order to make them strong, empowered individuals

The program itself is 12 months long and targets young women and girls aged 16 and above. A majority of them leave school either due to financial constraints or because they had previously failed their examinations. Other reasons include marriage, distance to school, illness, and lack of interest (Pratham, 2015).

There are five steps in the process of intervention:

1. **Mobilization:** Every state identifies the locations where the Cluster Centres will be situated through mobilization to ensure access to education at the doorstep. Once a cluster of villages has been detected, Pratham identifies the students and mobilizes them, by sharing information on the benefits of completing secondary education, and the uniqueness of the programs that begins with the Foundation Course. This Course (in Math, Languages, English, Science, and other additional subjects depending on each state) is aimed at bridging the gap between basic concepts and the secondary school curriculum. Lasting anywhere between 4–6 months, the Foundation Course also helps ascertain who should be selected for the main course on the basis of their commitment to the program.
2. **Enrolment and Assessment:** As the Foundation Course is completed, students are internally assessed to establish what level of learning they are at. Selected students are then enrolled into the Post-Foundation Course and begin regular classes for the next 6–8 months at the POSE Centres. This is where the 10th standard curriculum is taught.
3. **Intensive Classes:** The program is implemented in the form of a basic hub and spoke model, depending on what kind of model it is (residential, non-residential, or roving); each POSE Second Chance Centre consists of a central hub, where the intensive classes take place (except in the roving model), with four to five Cluster Centres attached to it as spokes (models illustrated below). Each Centre (also called a Block) caters to around 100 candidates.
4. **Daily cClasses and Final Examinations:** Once the classes at the Hub are over, students are expected to attend daily support classes at their Cluster Centres, where they are assigned a tutor who guides them in their everyday studying,

assists them with the homework, and answers their questions pertaining to all subjects. After the curriculum is taught comprehensively, students will sit for their tenth standard examinations.

5. **Vocational Training and Skills Development:** Once students have taken their examinations, POSE intends aims to introduce vocation and skills development-oriented courses to enhance employability skills and introduce possibilities that are available for students. Both their certification and these skills will eventually improve their employability and empower them as individuals. POSE is currently considering how to better integrate this component into their program, and courses on Health and Early Childhood Care and Education have been particularly popular and useful with this segment.

The Pratham Open School of Education (POSE) Model

As mentioned above, the POSE Model is tailored as a hub and spoke model. Each one is called a Block or Centre; currently there are 33 POSE Centres set up in nine states, with Maharashtra, Rajasthan, and Andhra Pradesh/Telangana holding the largest number of Centres. Each Centre caters to around a 100 candidates in an area spread across approximately 25–75 villages in the rural areas or 2–3,000 households in the urban areas.

There are three types: Residential (Fig. 2.1), Non-residential, and Roving (Fig. 2.2).

The Residential Model

In this model, students travel to the Residential Hub Centres from their respective villages for 5–7 days every month to receive intensive classes from subject-specific faculty members. As the name implies, the girls reside at the Hub Centre

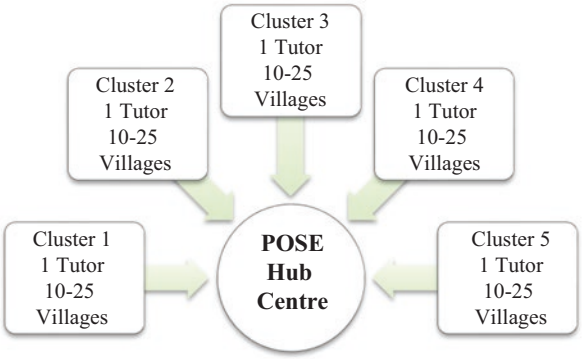

Fig. 2.1 The POSE residential hub model (Reprinted with permission from Pratham Education Foundation)

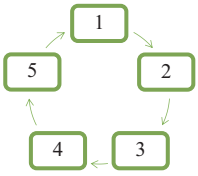

Fig. 2.2 The POSE roving model (Reprinted with permission from Pratham Education Foundation)

during this period. For the rest of the month, students attend daily classes at the Clusters (each catering to 10–25 villages) for 2–3 h a day. There is one dedicated tutor per Cluster, who follows up from the intensive classes with assignments and homework, as well as clearing any doubts the students may have.

The Non-residential Model

In terms of structure, the non-residential model is the same as the residential model (Fig. 2.1). However, due to certain social and cultural factors, students return home after attending classes at the Hub Centres. This model is also utilized in urban areas where transport facilities are widely available and safe to use. The rest of the activities follow the format of the Residential Model.

The Roving Model

The Roving Model, on the other hand, does not have a central Hub Centre. Students permanently remain at the Clusters, whilst the subject-specific faculty members travel to each Cluster to deliver the intensive classes for 5–6 days. Daily support classes are taken by the tutors post the intensive classes, as in the other two models.

As the program continues to grow, an increasing number of Centres are choosing to operate through either the non-residential or roving model, given their convenience and low management costs. However, the decision to choose which model to adopt is largely based upon the socio-economic conditions and context of the area in which it is implemented: in certain areas, due to social reasons, parents do not prefer their children to stay at the Hub Centre, whilst in other states, such as Chhattisgarh, the residential model has been working well for over 3 years. The question, therefore, is not what model works best, but *rather* where it works best.

Costs

Typically, this program costs Pratham close to Rs. 30,000 (approx. US$450) per student per annum. This includes the costs to build and sustain the blocks, teaching materials, and the salaries of the faculty and tutors, out of which the salaries are the largest portion. As the organization itself is non-governmental, most of its funding comes from individual donors, corporates, and funding agencies. The program was originally heavily supported by Deloitte and the GE Foundation, both having aided them in their earlier years, whilst many other supporters have helped in their expansion (Pratham, 2016).

Impact to Date

Since its formal inception post the pilot, the program has grown exponentially and currently has 33 centres across nine states: Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, and Telangana. Close to 18,000 students have enrolled for the Foundation Course offered at POSE, out of which over 13,500 were selected to continue for the program (Pratham, 2015). Over the years, there has been a steady increase in the percentage of girls who have passed their examinations.

In the academic year of 2012–2013, 51 % of the students that appeared for the examinations passed, out of which Odisha and Chhattisgarh had the highest pass rates of 65 % and 63 %, respectively. In 2013–2014, 72 % of the students passed. As we can see in the figure below (Fig. 2.3), almost 40 % of these are currently pursuing

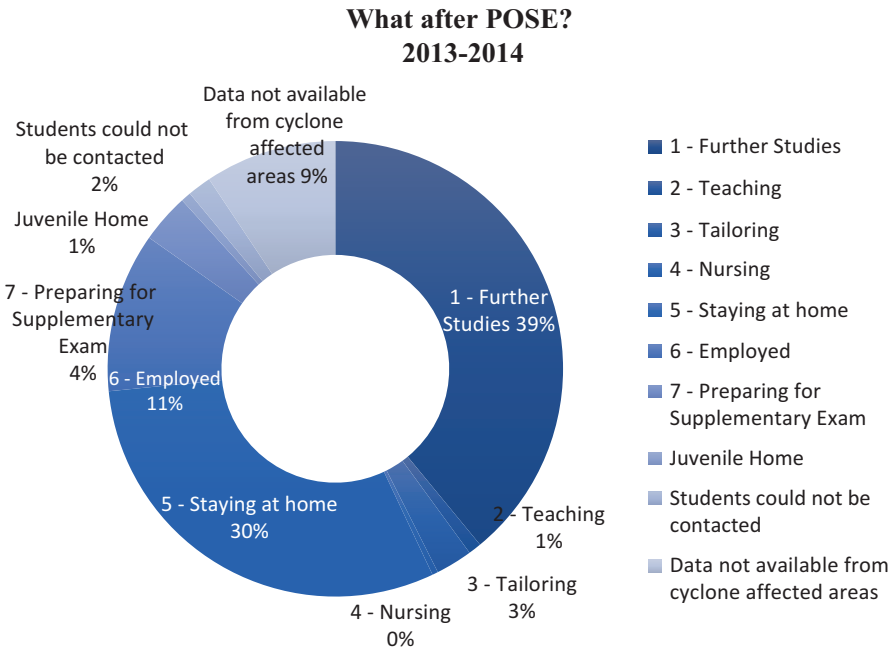

Fig. 2.3 What happens after POSE? 2013–2014 statistics (Reprinted with permission from Pratham Education Foundation)

further studies, whilst another 15 % are either employed or working. This further echoes the extent to which this program has been successful.

Out of those who do not pass the first time, many – even those who have to drop out of the program due to personal problems – come back to resit the examinations. From 2015 to 2016 onwards, POSE has begun an alumni association for everyone who has gone through the program, whether they have passed or failed. Other than providing a forum where the students can interact with one another, a more holistic tracking system will be implemented that will follow all of the students through their post-POSE journeys.

Currently in its fourth year of operation, POSE has over 100 faculty members and 150 tutors across the 33 centres. The program is constantly being refined to better serve the needs of the girls. This particular year, there will be three basic changes: firstly, the strengthening of the alumni association; secondly, formalizing the Foundation Course as a fully certified Pratham course of 4 months (so that even those who are not selected for the Post-Foundation Course will be benefitted); and, lastly, introducing self-learning through the advent of technology. Additionally, the topic of Life Skills has also been added to the Foundation Course which includes modules such as critical thinking, decision-making, and public speaking.

Success Factors

Low-Cost, Replicable, and Flexible Models

The simplicity of the models allows for one to tailor them as per the requirement; individual states mix and match between the three to design customized models that suit their needs best. The costs to sustain them are also minimum, and, therefore, it has been easy to replicate and expand the program in multiple states on a fairly large scale.

Tangible Results of Intervention

Many programs that are trying to tackle the issue of school enrolment and girl-child education are unable to measure the extent to which their interventions have been effective. Alternatively, because POSE trains its students specifically for the 10th standard examinations, it is easier for one to quantitatively measure how effective the program really is. By following up with the students post the examinations, POSE is also able to determine the long-term and short-term outcomes of the program. Although this is the only indicator they have to determine how successful their program is, in the near future, they hope to use the alumni association to further measure the extent of their impact.

Challenges

Lack of Suitable, Sustainable Tutors

Most of the faculty members and tutors are chosen from the local area – e.g., people residing in the village itself – due to their familiarity with the social situation at hand. Whilst the hiring process is relatively simple, as everything is decentralized, levels of retention vary as many staff members choose to leave due to better opportunities available elsewhere. Even before sustainability becomes an issue, finding individuals who are qualified enough in certain areas has proven to be difficult.

As previously mentioned, POSE is moving towards self- and digital-based learning. This can be seen as a way of effectively dealing with the lack of suitable manpower by depending less on tutors. Once the content is digitalized on tablets, the dependence on physical teachers will be reduced, and, therefore, finding a sufficient amount of appropriate tutors will be a lesser problem. Pratham is still piloting this component.

Students' Attendance

Owing to India's long-standing cultural and societal norms, girls have always been comparatively overlooked and discouraged – especially when it comes to educating them. Many a time, POSE faces difficulties in persuading parents to let their daughters join the program, as they are not convinced it is necessary. Some of the women also work as daily labourers and farmers, as it is essential for the survival of their family, whilst many others are required to stay at home to look after the house. Therefore, it becomes difficult for them to sometimes attend daily classes.

In order to deal with this problem effectively, POSE encourages its tutors and students to meet the families and be well acquainted with the community. The students themselves, both current and ex, also aid with the mobilization process and inspire many other girls to join the program. Families are invited to visit the centres, which reassures them that it is a safe and educational environment for their daughters

to be in. With the alumni association in place, this level of community engagement will increase and continue to positively impact student attendance on the whole.

Future Priorities

Over the years, POSE has expanded and grown to become a strong organization providing many with an opportunity to complete their secondary school education and move forward as empowered individuals. Having already established themselves in nine states, POSE's next step is geared more towards self-learning and skills development, with expansion as its secondary goal. As one of their core aims is to provide students with market-relevant vocational training, POSE will now focus on how they can better integrate this component into their program. This will also include the integration of other components, such as the application of technology in the classroom. POSE's constant efforts in continuously refining itself ensure that it will always be in a better position to guide its students to success.

Conclusion

This chapter has discussed the phenomenon of exclusion from the perspective of education and skills, highlighting the scale of the challenge and identifying global actions that are being taken to improve inclusion in education and skills development. The two case studies discussed reveal a number of realities that are worth emphasizing. First, they demonstrate the power of multisectoral partnerships and collaboration in redressing exclusion. Secondly, these case studies highlight the importance of keying to global and national priorities when designing an initiative to improve inclusion in education and skills development. Thirdly, it is clear that the most effective programs benefit from piloting as a means to shape program design. Such pilots serve to identify potential challenges, sociocultural cultural sensitivities, opportunities for cost-efficiency, and pathways to scalability. Given the importance of education and skills development to national and global development, it is useful for initiatives that aim to tackle exclusion in skills development to draw lessons from the examples of the ITTP and Pratham Second Chance programs.

References

Adebiyi, M. A. (2003). *Education-economic growth paradox in Nigeria: An autoregressive model*. Addis Ababa: African Institute for Economic Development and Planning.

Aromolaran, Adebayo (2004). *Female schooling, non-market productivity, and labor market participation in Nigeria* (Economic growth centre, discussion paper 879). New Haven: Yale University.

Basumatary, R. (2012). School dropout across Indian states and UTs: An econometric study. *International Research Journal of Social Sciences, 1*(4), 28–35.

Becker, G. S. (1964). *Human capital*. New York: Columbia University Press for the National Bureau of Economic Research.

Catholic Relief Services. (2009). *Inclusion of Vietnamese with disability: Best practices from project experience*. Hanoi: CRS.
Colclough, C., Kingdon, G., & Patrinos, H. (2010). The changing pattern of Wage returns to education and its implications. *Development Policy Review, 28*(6), 733–747.
Dauda, R. O. S. (2010). Investment in education and economic growth in Nigeria: An empirical evidence. *International Research Journal of Finance and Economics, 55*, 158–169.
Dinh, N. (2014). *Personal email communication with Dinh Thi Nguyet*, Chief of Party – IVWD, Catholic Relief Services.
Dyer, C. (2015). *Evolution in approaches to educating children from mobile and nomadic communities*. Background paper for the EFA Global Monitoring Report 2015. http://unesdoc.unesco.org/images/0023/002324/232422e.pdf. Accessed on 22 Mar 2015.
European Union Agency for Fundamental Rights & UNDP. (2012). *The situation of Roma in 11 EU Member States: Survey results at a glance*. Vienna/New York: European Union Agency for Fundamental Rights/United Nations Development Programme.
Filmer, D., & Schady, N. (2008). Getting girls into school: Evidence from a scholarship program in Cambodia. *Economic Development and Cultural Change, 56*(3), 581–617.
Hanushek, E. A., & Woessmann, L. (2008). The role of cognitive skills in economic development. *Journal of Economic Literature, 46*(3), 607–668.
India, Ministry of Gender and Women Development. (2012). *Report of the working group on child rights for the 12th 5-year plan.* http://planningcommission.nic.in/aboutus/ committee/wrkgrp12/wcd/wgrep_child.pdf. New Delhi: Government of India. Accessed on 15 Mar 2015.
India, Ministry of Law and Justice. (2009). *The right of children to free and compulsory education act.* http://ssa.nic.in/rte-docs/free%20and%20compulsory.pdf. New Delhi: Ministry of Law and Justice, Government of India. Accessed on 12 Mar 2015.
India, Planning Commission. (2013). *12th 5-year plan (2012–2017). Social sectors volume 111*. New Delhi: Government of India.
ISESE. (2012). *ISESE competition: Shortlisted entries. Chapter 8: IT training for youth with disabilities*. http://r4d.org/about-us/press-room/competition-most-innovative-secondary-education-skills-enhancement-reaches-secon (pp. 34–39). Accessed on 3 Feb 2015.
Jayaram, S., Hill, T., & Plaut, D. (2013). *Training models for employment in the digital economy*. Washington, DC: Results for Development.
Keeley, B. (2007). *Human capital: How what you know shapes your life*. Paris: OECD.
Kielland, A. (2015). *Evolution in approaches to improving access to education for children living in urban slums.* Background paper for EFA global monitoring report 2015. http://unesdoc.unesco.org/images/0023/002323/232395e.pdf. Accessed on 19 Jan 2015.
Krätli, S. (2001). *Education provision to nomadic pastoralists: A literature review*, *Institute of development studies working paper, 126*. Washington, DC: World Bank.
McGrath, S., & Akoojeeb, S. (2007). Education and skills for development in South Africa: Reflections on the accelerated and shared growth initiative for South Africa. *International Journal of Educational Development, 27*(4), 421–434.
Mehta, F. (2015). Pratham open school offers second chance for education. http://india-herald.com/pratham-open-school-offers-second-chance-for-education-p4275-1.htm#sthash.DUdAzf4O.dpuf. Accessed on 12 Apr 2015.
National Center on Education and the Economy. (2005). India education report. Washington, DC: National Center on Education and the Economy. http://www.ncee.org/wp-content/uploads/2013/10/India-Education-Report.pdf. Accessed on 20 Dec 2016.
Olaniyan, D., & Okemakinde, T. (2008). Human capital theory: Implications for educational development. *European Journal of Scientific Research, 5*(5), 157–162.
Pratham. (2008). *Reasons for drop out amongst children living in slum areas of Delhi*. New Delhi: Pratham. http://www.prathamdelhi.org/pdf/out_of_school.pdf. Accessed on 12 Jan 2015.
Pratham. (2014) *Annual status of education report 2014*. Mumbai: Pratham. http://img.asercentre.org/docs/Publications/ASER%20Reports/ASER%202014/fullaser2014mainreport_1.pdf. Accessed on 8 Dec 2014.
Pratham. (2015). *Pratham open school of education*. http://www.educationinnovations.org/program/pose-pratham-open-school-education-second-chance. Accessed on 5 Mar 2015.

Ruto, S., Ongwenyi, Z., & Mugo, J. (2009). *Educational marginalisation in northern Kenya.* Background paper for EFA Global Monitoring Report 2010. http://unesdoc.unesco.org/images/0018/001866/186617e.pdf. Accessed on 25 Jan 2015.

Schultz, T. (1962). *Investment in human beings*. Chicago: University of Chicago Press.

Schultz, T. (1963). *The economic value of education*. New York: Columbia University Press.

Stevens, P., & Weale, M. (2004). Education and economic growth. In G. Johnes & J. Johnes (Eds.), *International handbook on the economics of education* (pp. 164–188). Cheltenham: Edward Elgar.

UNESCO. (2007). *Education for all by 2015: Will we make it?* Paris: UNESCO.

UNESCO. (2009). *Education for All Goals.* Paris: UNESCO. http://www.unesco.org/new/en/ education/themes/leading-the-international-agenda/education-for-all/efa-goals/. Accessed on 6 Mar 2015.

UNESCO. (2012a). *Addressing exclusion in education: A guide to assessing education systems towards more inclusive and just societies*. Paris: UNESCO.

UNESCO. (2012b). *Opportunities lost: The impact of grade repetition and early school leaving*. Paris: UNESCO.

UNESCO. (2015). Ed*ucation for All 2011–2015: Achievement and challenges*. Education for all global monitoring report 2015. Paris: UNESCO.

United Nations Convention on the Rights of Persons with Disabilities. (2015). http://www.un.org/disabilities/convention/conventionfull.shtml. Accessed on 1 Feb 2015.

Vietnam, Ministry of Education and Training. (2015). *Vietnam Education Law.* http://en.moet.gov.vn/?page=9.6. Accessed on 19 Feb 2015.

WHO (2011). *World report on disability.* Geneva: World Health Organization Press. http://www.who.int/disabilities/world_report/2011/report.pdf

World Bank. (2009). *Secondary education in India: Universalizing opportunities.* Washington, DC: World Bank. http://datatopics.worldbank.org/hnp/files/edstats/INDstu09a.pdf. Accessed on 2 Apr 2015.

Chapter 3
Technical Skills in the Classroom

David Sorrell

This chapter explores how the integration of technical skills and workplace learning into secondary education can ensure youth obtain a holistic education – thus, preparing them for the workplace. It begins with a discussion on skills development, skills for employability, and technical and vocational educational training (TVET). Two case studies are subsequently drawn upon as examples of programs aiming to address technical skills and workplace learning integration in India and Pakistan: the Lend-a-Hand Introduction to Basic Technology program and the Technical Vocational Program & Livelihoods for Youth (TVET at Idara-e-Taleem-o-Aagahi), respectively.

Background

Skills Types

Young people are said to need three main types of skills: foundation, transferable, and technical and vocational. Foundation skills include literacy and numeracy that are considered necessary "for decent work that pays enough to meet daily needs" (UNESCO, 2015, p. 112). They are also reported as elemental and a "prerequisite for continuing in education and training, and for acquiring transferable and technical and vocational skills that enhance the prospect of getting good jobs" (UNESCO, 2012, p. 23). In the Philippines, qualifications since 2001 have centered around three competencies: basic (generic work skills), common (specific to industries), and core (specific to occupations) (Pavlova & Maclean, 2013). Employers have

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been reported as valuing all skill sets of youth, but that social-emotional and higher-order cognitive skills are of greater demand than basic cognitive and technical skills (Cunningham & Villaseñor, 2014). The former-said skills are reported by Cunningham and Villaseñor to be learned or refined largely during adolescence and, therefore, should be a major component of educational curricula in the early years and well into secondary schooling until formed. Furthermore, the authors commented that technical training should not be considered synonymous to job training.

Skills Development

Upper secondary education provides youth with foundation and opportunities for advanced learning and training, in addition to their preparation to enter the labor market (OECD, 2010). Considering the fact that large numbers of 15–19 aged students are only receiving their primary education in many low-income countries, such youth receiving their secondary school education could be considered impossible (UNESCO, 2012). In many of the OECD countries, students at the end of their lower secondary education are often permitted to leave, but subsequently face severe problems trying to enter the workplace without having formal upper secondary qualifications (OECD, 2010).

Skills development has been shown to have a positive impact on the employment of youth. In recent years, India, for example, has implemented significant reforms with a range of initiatives aiming to improve the supply of skills and the increased involvement of private companies (Comyn, 2014). Despite such reforms and the recognition and role of public and private employment services, however, their potential has not been fully recognized in order to address youth employment, support the skills system, or enhance the functioning of the labor market (Comyn, 2014). Statistics have been reported that 44 out of 1000 15–19-year-olds in India have received vocational training; 14 of these have received formal training and 30 non-formal training (Raman & Gupta, 2015). Aggarwal (2016) commented that in India, huge gaps exist between the requirements of industry and the skills levels of workers. Gaps are a result of factors including inadequate training infrastructures, an inappropriate mix of skills and education, and outdated curricula. In addition, Aggarwal compared the vocational training sector as being in "a dismal state" and that the higher education sector is grappling with scale and quality issues.

TVET programs are one approach youth can develop necessary life and employment skills. Upper secondary sector programs have been considered by policymakers in developing countries to be a key element in economic growth and poverty reduction (Yao et al., 2013). Vocational education can strengthen students in their knowledge production and innovation, simultaneously providing them with knowledge that increases their power and fulfillment within work and society (Allais, 2012). Programs may be linked to secondary schooling and formal technical and vocational education or through work-based training such as traditional apprenticeships (UNESCO, 2012).

The Dakar Framework for Action (UNESCO, 2000) comprised six regional frameworks for action and a world declaration on education for all that stated:

> All young people and adults must be given the opportunity to gain the knowledge and develop the values, attitudes and skills that will enable them to develop their capacities to work, to participate fully in their society, to take control of their own lives and to continue learning.

The third Education for All (EFA) goal similarly stated skills development being recognized as an essential need for all youth. The 2012 Global Monitoring Report (GMR) (UNESCO, 2012), however, reported the goal was vague and that uncertainties existed with respect to how it could be measured. As a result, governments, aid donors, education communities, and private sectors have not given the goal the attention that it deserved. The report recognized that millions of young people lack basic literacy skills and usually earn wages below the poverty line in the urban informal sector. The 2012 GMR (UNESCO, 2012) reviewed 46 countries and found that in the informal sector, fewer than half addressed skills development among youth. One developing country, Ethiopia, was included in the report, however, as aiming to achieve universal secondary school enrollment by 2020.

Skills for Employability

Employers usually want assurances that candidates have strong foundation skills, have the ability to deploy knowledge, demonstrate initiative, and can communicate with team members. New recruits, however, are usually found to lack such transferable skills mainly because they did not receive a good quality education (UNESCO, 2012).

Combining delivery skills training with microfinance or social protection programs are seen as potentially effective in the short term in helping "beneficiaries overcome poverty constraints" (UNESCO, 2012, p. 37). Countries such as New Zealand are aiming to include transferable skills and include problem solving into their curricula for students in years 12–13 (16- and 17-year-olds). The New Zealand National Curriculum states that opportunities should be provided by schools for students to experience occupations within industries they have an interest in. In addition, within the curriculum, students should be encouraged by schools to identify, evaluate, and enhance their transferable skills and in extracurricular activities outside of school (New Zealand Curriculum, 2016).

Technical and Vocational Educational Training (TVET)

In many countries, TVET courses are often stigmatized and considered second rate to higher education courses (Dang, 2015). For those who are less skeptical and see possible benefits to such courses in developing their child's well-being and practical

life skills, they may, however, have limited means to enroll their child on such courses. There have been calls for TVET courses to be strengthened and further developed in Asia-Pacific countries (UNESCO, 2013). Agrawal (2012) reviewed India's vocational education and training (VET) system and reported figures of 11 % unemployment for VET holders in the 15–29 years age group and that general secondary graduates were higher. This paper additionally reported regular and casual workers were receiving average daily wages, but despite the number of Industrial Training Institutes and Centers increasing over the past few decades, the coverage was unequally distributed between states.

Education Program Initiatives

The case studies included in this chapter aim to demonstrate two vocational education program initiatives that have incorporated technical skills and workplace learning into secondary education. The first example is from India and the second from Pakistan.

India

At the lower secondary level, students in grades 1–8 are made aware of the concept of work in "work education," and grades 9 and 10 participate in prevocational education essentially aiming to increase their familiarity with the workplace (Pavlova & Maclean, 2013). For upper secondary school students in grades 11 and 12, vocational education is a distinct stream that was first introduced in 1976–1977 and revisited in 1992–1993. It has been commented that the stream is "a way to diversify educational opportunities, enhance individual employability and reduce the mismatch between the supply of and demand for a skilled labour force" (Pavlova & Maclean, 2013, p. 54). Furthermore, the stream is claimed to have the aim of "diverting a substantial portion of students away from the 'academic' stream" (Pavlova & Maclean, 2013, p. 54).

The technical education system in India can be classified into three broad categories of institutions according to their funding or financing – central government, state government/state funded, or self-financed (Goel, 2011). India is no exception to its TVET courses receiving stigmatization and being considered second rate to university or polytechnic higher education courses. Vocational education is offered to students in grades 11 and 12 and specifically "aimed at preparing students for entry into the labour market" (World Bank, 2008, p. ii). Government public sector schools in 2008 amounted to almost 6800 with over 100 courses in areas such as agriculture, business and commerce, and humanities subjects.

NGOs offer programs as described above. The first NGO case study now described in this chapter is Lend-a-Hand India (LAHI).

Case Study 1: Opening Doors to TVET in Secondary School: Lend-a-Hand India's Introduction to Basic Technology Program[1]

Introduction

India is poised to either reap the benefits of its demographic dividend or to pay the social costs of millions of youth ill equipped to join the productive labor force. Although India has succeeded in expanding enrollment in primary and secondary education (as reported by the UNESCO Institute for Statistics (UIS), at the primary secondary school level, the rate has steadily increased since 2004 (34.7 %) to 58.1 % in 2011 (UIS, 2015a)), most graduating students have not had the opportunity to explore different sectors for employment and make decisions about vocational and higher education career counseling or obtain guidance from seasoned professionals. In addition to not being exposed to vocational and technical sectors, the practice of rote learning applied in schools across India imparts students with limited behavioral or life skills. These skills include problem solving, leadership, teamwork, and self-management, all of which have been cited as important by vocational employers and are crucial for securing and maintaining long-term employment (World Bank, 2007). Learning through rote memorization excludes hands-on learning opportunities that give youth a glimpse into the activities of a technical trade.

To help combat this trend, Lend-a-Hand India (LAHI) has refined and adapted a prevocational training module developed by an NGO, Vigyan Ashram, and has worked with schools and state governments to scale up its implementation. The module is a 2–3-year secondary course that exposes rural students to a wide range of skills needed for technical and vocational employment and entrepreneurship in rural areas. The program not only delivers practical skills training but also offers students the opportunity to explore their own vocational interests. In the traditional post-secondary TVET system, students must pick a specialization upon enrolling, but they often lack exposure to any particular area of work and so make uninformed decisions.

LAHI's program allows students to discover an area of interest in advance and helps them develop the life skills necessary to succeed in seeking employment or starting their own rural enterprise. Exposing students and their families to vocational training at the secondary level may also help reduce the stigma that prevents many individuals from pursuing TVET education in India.

Program Overview

Description and Curriculum

LAHI launched its Introduction to Basic Technology (IBT) program in 2005 in partnership with a local NGO, Vigyan Ashram, which had developed the prototype course. The IBT program follows a 2–3-year curriculum designed for students in the 8th, 9th, and 10th grades between the ages of 14 and 17. Classes are divided into "study teams" consisting of 10–15 students that meet once a week for 4–5 h a day

[1] Summarized from Brown, E. J., Acedo, J. M. R., et al. October 2013. Pathways to Employability: Part II: Case Studies of Six Innovative Programs to Enhance Skills for Employability in Youth. *Results for Development Institute.* Accessible from: http://r4d.org/knowledge-center/innovative-secondary-education-skills-enhancement-isese-phase-ii-research

during school hours. The IBT program focuses on 40 different skill sets relevant in rural areas such construction, animal care, electrical maintenance, carpentry, sewing, performing simple health tests, etc.

The program has a gender-neutral approach; every student must complete each of the sub-modules, ensuring that girls receive training in traditionally "male" occupations such as carpentry and electrical wiring and boys receive training in traditionally "female" occupations such as home science. About 40 % of all IBT students are female, and an equal percentage of female and male graduates pursue polytechnic education after completing the course (LAHI, 2013).

In addition to technical skills, the program aims to develop practical life skills such as planning, problem solving, teamwork, comfort in co-ed environments, and others. The program emphasizes entrepreneurship and the skills that students would need in order to excel in managing their own businesses. The course is designed to encourage active learning so that students understand *why* a problem is occurring and *how* to create the solution. The course includes some theory, but emphasizes hands-on activities that give students experience with specific tools and team-based problem solving.

The IBT program currently operates in 62 government-aided schools in Goa, Karnataka, and Maharashtra, and LAHI is planning expansions into Orissa, Gujarat, and Uttar Pradesh. 7000 students have completed the course, and 13,000 more are currently enrolled.

Staffing

Rather than relying on the schools' full-time teachers, LAHI requires schools to contract local micro-entrepreneurs to serve as instructors for the program up to 20 h a week. It is the school's responsibility to identify and hire instructors, after which LAHI trains them so that they are prepared to lead classroom sessions. Using local micro-entrepreneurs as instructors brings local market trends and contacts into the classroom and gives students a window into the day-to-day life of a particular vocation. In exchange, instructors receive access to formal training networks, monetary compensation, and community work orders.

Process for Initiating a New Program and the Role of LAHI

LAHI designed the IBT program to encourage commitment and buy-in from partner schools from day 1. For a school to implement the IBT course, it must visit an operational site at a nearby school and submit an application to LAHI that acknowledges its commitment to, and preparedness for, the program. If a school is tentatively accepted, then it must pass a management resolution in consultation with teachers and the parents' association that commits adequate resources to the program.

Once the program is launched within a school, LAHI plays an important quality control role. LAHI trains instructors and closely monitors program performance. A LAHI field officer visits each school one to two times a month to assess instructors, the infrastructure and tools provided for the program, student attendance, the regularity of disbursements to instructors, and areas for improvement. As the program continues, LAHI's role decreases, and the school's management plays a bigger role in overseeing the program.

Costs

It costs about US$4000 to start the IBT program in a new school, which includes expenses such as training instructors, acquiring the necessary tools, and distributing lesson materials. Training instructors constitutes about 40 % of total start-up costs. Schools may also have to invest in upgrading their infrastructure if it does meet the full program's standards.

A year after launching, it costs about US$5000 to maintain the program as the school increases the number of classes delivered, but these recurring costs can come down as more instructors are trained and enrollment increases. Instructors receive 500 INR (about US$10) for each day that they teach, which is comparable to a normal day's wages/earnings. The total cost for a single student to complete the 3-year program is roughly US$318.

LAHI assumes about 40 % of the total costs of the program in the first year through its own pool of funds (drawn from donations) and aims to scale down its contribution as the program continues. The remaining costs are covered via the school's own financial reserves, tuition fees, and fee-based community services (see below).

Plans for Sustainability

When a new school launches the IBT program, LAHI assumes a significant amount of the start-up costs, but the organization has laid out steps that schools can take to sustain the program. The first is a small tuition fee. LAHI calculates that if schools charge students 100 rupees (under US$2) a month, then the program can sustain itself once it is fully operational. Half of schools have partially followed this advice and charge students around 20–100 rupees a month, but most are reluctant to impose the full fee. Since the program operates in government-aided schools, families expect free services from the school, and charging for a particular course requires a change in school culture. Attitudes may change as the community observes the success of progressive batches of graduates.

The second step that schools can take to self-finance the program is to promote fee-based community services. Besides generating income for the program, fee-based services give students direct channels into the local market for vocational services. Many schools have adopted this practice and earn between US$400 and 500 a year; partner schools in Maharashtra, however, report earning about US$2400–3300 a year from all three grades of the course (LAHI, 2013), but this constitutes only a small portion of total program costs.

Impact to Date

LAHI's work in promoting the IBT program has achieved impact across three dimensions. The first is its impact on students. The IBT program has already reached over 7000 graduates and helped them navigate choices in technical and vocational education and offered youth a new way to approach learning and the world of work. Program staff members have found that students who participate in the course not only embrace the learning atmosphere of the course itself but also demonstrate greater engagement and interest in their other classes. Student attendance in the IBT course is near 100 %, enrollment is growing, and one third of LAHI's partner schools report an increase in overall secondary enrollment because of the program.

LAHI also administered a hands-on test to assess the skills that students gained from participating in the IBT program.

The effect of students' enthusiasm for the program and the skills it imparts is apparent in the near term. Enrollment in post-secondary TVET has reached about 25 % of graduates in LAHI's partner schools in Maharashtra, whereas the average for the state is 5 %. In addition, a survey of 1200 recent graduates found that 20 % of the respondents wanted to start their own enterprise, which would generate employment for themselves and others. An initial assessment suggests that IBT graduates are up to three times as likely to be self-employed than students who did not complete the course (LAHI, 2013). Since the IBT program is a conduit to further TVET training, data on the employment of its graduates are not available, but this is critical information that the organization could track in the future. A small review of graduates from a 2008/2009 student batch in Maharashtra reveals that only 15 % of the IBT respondents were unemployed, whereas 39 % of non-IBT graduates in the sample were unemployed; more robust evidence from partner schools could better validate this difference (LAHI, 2013). In the meantime, the growing interest among new schools to partner with LAHI is an initial indication of the program's value. LAHI is currently working to expand the program to 100 schools and reach 20,000 students.

The increase in TVET enrollment reflects the second dimension of LAHI's impact – reducing stigma toward vocational education. There is a persisting stigma in India that vocational education is only for students who perform poorly in their academic studies. While LAHI alone cannot reverse this perception, exposing students and their families to vocational training when the stakes are still low and introducing them to successful micro-entrepreneurs from their community can help chip away at this entrenched stigma.

The final dimension of impact for LAHI's work on implementing the IBT program is its influence on state policy. LAHI and Vigyan Ashram have taken a small-scale grassroots innovation (the original course), adapted and refined it, scaled up its implementation, and successfully incorporated it into state policy. The Government of Maharashtra formally grants credit for the course, includes the course in its 10th standard public examination for enrolled students, and provides IBT graduates preferential admission to government-subsidized post-secondary industrial training institutes (which are generally cheaper than private TVET institutes).

LAHI has achievements across all three of these dimensions, but its impact could be more clearly delineated through outcomes data on program graduates. In particular, employment outcomes and earnings data from TVET students who have completed the IBT program and those who have not in partner schools could help demonstrate the effect of the course on participants' future prospects. An independent third-party impact assessment of LAHI's program in Maharashtra has recently been completed and offers initial insights into participant outcomes. The assessment reveals that graduates in the assessment sample have launched over 161 entrepreneurial initiatives after completing the 10th standard, show a greater interest in active learning methods than the sample's control group, and may perform better in post-secondary TVET programs than non-IBT graduates (LAHI, 2013).

Success Factors

Taking a grassroots innovation to scale is not a simple task, and the decisions that LAHI has taken to drive the IBT program forward reveal important factors that contribute to the program's success. While these factors may be especially important in rural India where there is pervasive stigma toward TVET and little if any emphasis on hands-on technical and vocational learning in secondary school, they are relevant to any initiative aiming to incorporate introductory vocational training into the traditional school system in urban or rural areas.

Broad Curriculum

As a prevocational curriculum, the IBT program gives student broad-based exposure to dozens of different skill areas. Upon finishing secondary school, students must choose a specific academic or vocational route; getting a taste of different vocational tracks arms students with enough experience to make a decision that reflects their interests and strengths and hopefully leads them to a career that they enjoy. If the curriculum was too specific, then students who have not yet committed to a skill area might avoid the program.

Methods of Instruction and Focus on Technical and Life Skills

Breaking away from typical classroom-style lectures and encouraging active learning keep students interested in the IBT program and willing to try new vocational areas. The practical skills that they gain will serve them well in any subsequent TVET program they may join, and life skills that they develop will benefit them in future academic or employment endeavors. By including a life skills focus, LAHI ensures that the IBT program is not only valuable to graduates who go onto seek specialized TVET training but to all of its participants.

Application Process

The application process for a school to initiate an IBT program helps LAHI identify schools that will be committed to the program and avoid lackluster partners. By ensuring that school officials visit operational sites, set aside the needed resources, and discuss the implementation of the program with teachers and parents, LAHI ensures that the entire school community is aware of the IBT course and has an opportunity to voice concern or doubt.

Approach for Building Government Buy-In

Maximizing the impact of any school-based program requires reaching more and more students with an effective intervention; establishing buy-in with the government is a great way to help introduce an intervention to new sites. LAHI's success with the State Government of Maharashtra and its approach to creating state-level buy-in in new areas has helped build its credibility. Rather than immediately approaching a new state government, LAHI follows a gradual evidence-building process.

First it identifies schools that are eager to initiate the program. Once the organization goes through the 4-month process of identifying interested schools and introducing them to the program, LAHI collaborates with the local district education officer (DEO) to launch the program in 3–5 local schools. It shares its implementation manual and other course materials with the DEO and lays out the success achieved in other localities. Once LAHI has the DEO's support and the program is

fully underway in the pilot schools, the organization begins approaching state-level officials. At this point, there is likely already evidence of initial success in the pilot schools and a committed group of local stakeholders who can advocate for the program.

Challenges

Financial Sustainability

For LAHI to expand to more schools and for the IBT course to be truly institutionalized into existing schools, schools must implement strategies to fully finance the course. LAHI can help pick up initial start-up costs for the program, but it cannot indefinitely maintain a cost share for recurrent expenses. In some categories, recurrent costs will even rise after the first few years. For example, instructors receive a slightly higher payment when they have worked with the program for a prolonged period, and they often demand even higher compensation.

LAHI finds that schools are reluctant to implement the full fees suggested by the organization and those that have struggle with consistent fee collection (LAHI, 2013), as parents are unwilling to shoulder the cost. Since LAHI only partners with government-subsidized schools, many families within partner schools are accustomed to receiving free services. The IBT course breaks this pattern. If subsequent batches of graduates from partner schools succeed in accessing quality TVET and securing employment, then families may be more willing to pay for the course. Until then, schools struggle to fully fund the IBT program.

Partial Reliance on Existing TVET System

While LAHI can maintain strict quality control of the IBT course, graduating students who are interested in TVET will go on to pursue the further vocational training needed for a particular profession. Although students may have a sound foundation of basic technical and life skills, they might still enroll in low-quality TVET programs that deliver mediocre skills at more advanced levels and offer poor employment outcomes. By feeding into the mainstream TVET system, LAHI's students depend on TVET centers to maintain reasonable standards of quality.

Many IBT graduates will enroll in subsidized government centers, especially in Maharashtra where graduates have easy access to public programs, yet quality varies; one study found that 3 years after graduation, 60 % of students who complete government vocational programs in India remain unemployed (World Bank, 2007). Many will recognize that they have limited opportunities for employment and will go on to invest in further higher education (World Bank, 2007). This is a lengthy, costly, and inefficient process.

Future Priorities

There is significant potential to continue expanding the IBT course throughout India to reach thousands of more students and to replicate the program in new countries. Education is a state topic in India, and LAHI is taking a successful approach to government recognition by working with state governments. As more states come on board and the evidence base for the impact of the IBT course builds, more states will be attracted to the program. Although LAHI only currently partners with government-aided schools, there are no significant roadblocks to partnering with low-cost private schools in India in the future, which would allow the program to

reach even more students. There is similar potential to develop such a program for urban populations, although the course material would have to be duly adjusted.

Replication is a complementary track that could introduce LAHI's strategy into other countries facing similar challenges in skills development. Sunanda Mane, the cofounder of LAHI, has already taken initial steps to share the program model with social entrepreneurs in other countries with the help of the Ashoka Globalizer Fellows program.

Pakistan

The Technical Education & Vocational Training Authority (TEVTA) of Pakistan in its draft TVET policy (TEVTA, 2014) considered youth lacking skills to be a barrier to economic growth and that, ultimately, skills development leads to higher productivity. Pakistan has a fast-growing youth population, and consequently, extensive TVET reforms have been considered essential in order to address the insufficient demand-driven training services required for an increasing workforce (Ansari & Wu, 2013). Traditionally, publicly funded institutions have provided TVET in Pakistan (TEVTA, 2014). According to statistics provided by the National Vocational & Technical Training Commission (NAVTTC), there are both public and private institutions in Pakistan with currently 1647 in total (NAVTTC, 2015).

Similarly to India, rote learning as an instructional method rather than practical approaches was more apparent in Pakistan's early TVET system (Ansari & Wu, 2013). During the past decade, however, the Pakistan government questioned such methods and decided competency-based training was essential as opposed to curriculum-based education (UNESCO, 2014). The National Education Policy drafted in 2009 recognized skills development and strengthening the TVET system as important with the intentions of transforming it into a demand-oriented sector (Ansari & Wu, 2013).

Although the government had introduced strategic reforms to enhance skills development (see Ansari & Wu, 2013), Pakistan's TVET public institutions have been questioned in terms of not delivering with no linkages with industries (Alam, 2015) and in terms of technology being outdated, financial constraints, and insufficient numbers of trained teachers to teach students necessary life skills to participate in the workplace (Ansari & Wu, 2013). Skills development has been quoted as one of the most neglected areas in Pakistan with poor quality teaching and learning materials in public institutions (Agrawal, 2013). Skills development and improved materials are two areas where organizations such as Idara-e-Taleem-o-Aagahi (ITA), the second NGO case study now described in this chapter, can intervene.

Case Study 2: Technical Vocational Program & Livelihoods for Youth (TVET at Idara-e-Taleem-o-Aagahi) (Pakistan)

Nitika Jain

Introduction

Over the years, Pakistan has seen a steady increase in the enrollment rates at primary, secondary, and even tertiary level. The gross enrollment rate has fluctuated

at the primary level, but in 2013 was reported to be 92.1 % compared to 79.1 % in 2004 (UIS, 2015b). At the secondary school level, however, the rate has steadily increased since 2004 (24.1 %) to 38.3 % in 2013 (UIS, 2015b). There has also been a decrease in the number of school children and adolescents who are out of school. While gender disparity in education is still at large, specifically in rural areas, female net enrollment ratios have improved by over 10 %; as far as the Millennium Development Goals (MDGs) are concerned, Pakistan is on its way to achieving universal primary education and is committed to promoting gender equality.

Nonetheless, despite the progress, Pakistan still has one of the largest out-of-school populations in the world (over 6 million), out of which more than half are female (UIS, 2013). While the net enrollment rate is over 70 % at primary level, this goes down to 38 % by secondary. The nation is also one of the ten countries with the highest population of illiterate adults, coming third after India and China (UNESCO, 2014). Consequently, Pakistan remains a developing country with a shortage of a skilled and educated workforce to support its economic growth.

In order to mobilize the out-of-school population, as well as address the issues of illiteracy and poverty, education must be made effective and relevant. There is a strong link between Pakistan's poverty and its poor productivity levels, which are chiefly due to underinvestment in education – particularly the area of TVET. Over the last decade, the Government of Pakistan has realized the need for a shift from curriculum-based education to competency-based training and has, thereafter, introduced various policies and programs that (a) provide the relevant skills for industrial and economic development and (b) improve access, equity, and employability. TVET has been initiated as a mainstream secondary level option, but less than 10 % of the total number of students enrolled in secondary schools are enrolled in this (UIS, 2013). Growth has, therefore, been slow. This is where both governmental and non-governmental organizations come in through enterprising partnerships.

The organization Idara-e-Taleem-o-Aagahi's (ITA) TVET program promotes the idea of vocational training and provides further alternative options for disadvantaged Pakistani youth in rural areas. Since late 2010, this NGO has offered various certified courses that teach trainees (mostly girls) the technical skills of a beautician, tailoring, etc. and aids in their development and empowerment. Thus far, this program has almost 10,000 graduates and over 200 centers.

This case study will examine ITA's initiative in detail, alongside its costs, impact to date, success factors, and challenges.[2] As the program is still in its nascent stages, how to ensure its continued operation as well as its expansion into other provinces will also be discussed. The program has been successful in portraying how technical

[2] Information within this case study draws heavily upon conversations and email correspondence with Baela Jamil (ITA's Director of Programs) between February and May 2015.

skills and workplace learning can be integrated into secondary education to ensure that Pakistani youth obtain a holistic education that prepares them for work.

Program Overview

While the government's initiative was making little progress, a pilot TVET program was launched in October 2010 in a government school by the organization ITA in collaboration with the TEVTA of the province of Punjab and UNILEVER Private Limited (UPL) in Pakistan. The existing government secondary school was utilized for several reasons: (a) they are generally well-endowed with space and personnel and maintained well in comparison to primary schools; (b) the buildings are only used until 2pm; (c) they are seen as prestigious bodies providing certification skills by society, with easy access for young girls and women; and, most importantly, (d) by using government schools as a location for the execution of this program, ITA could establish itself as a parallel system offering TVET opportunities – someone working with the government and not against it.

This program offered trainees various certified courses that taught them the skills of a beautician, tailoring, and AutoCAD in the mornings or after school for a period of 3 months. The 255 trainees were mostly women – although there were men too for the AutoCAD course – aged 15–30 and mostly from the community as opposed to the school where it was held. The courses extended and also covered other technical, interpersonal, communication, and marketing skills, enabling trainees to proactively address other personal development needs. This pilot study lasted till September 2011 and was deemed hugely successful given the number of people who suddenly wanted to enroll. Seeing its success, the program officially opened up for out-of-school students and established itself as a successful TVET venture in early 2012.

To date, this initiative has over 9500 graduates and 228 centers across the country and continues to target the youth – both male and female – aged 15–30. The vast majority of the trainees are dropouts and come from the community, while a small percentage of high school students from the schools themselves also enroll (given their demanding school curriculum, they have a limited amount of spare time for such skills development). The 3–6-month program is held in the mornings or afternoons depending on the availability of the secondary school spaces, and the numbers of courses offered in each school depend upon the need. Once the course is over, the trainees are assessed in a variety of ways suitable to the skills they have developed. All courses are fully and jointly certified by ITA and the TEVTA of the province (or the Sindh equivalent, Sindh Technical Education and Vocational Authority (STEVA)) in order to ensure that the trainees graduate with something that is marketable.

As shown in Fig. 3.1, ITA's TVET model has eight vital components. The identification process begins with the approval of the Department of Education (EDO) or the District Coordination Officer (DCO). Schools are selected, and the EDO/DCOs are asked for their permission to intervene. Once this is granted, the schools are visited and the school heads are introduced to the program through various marketing tools. Following a brief orientation of the program, appropriate space is allo-

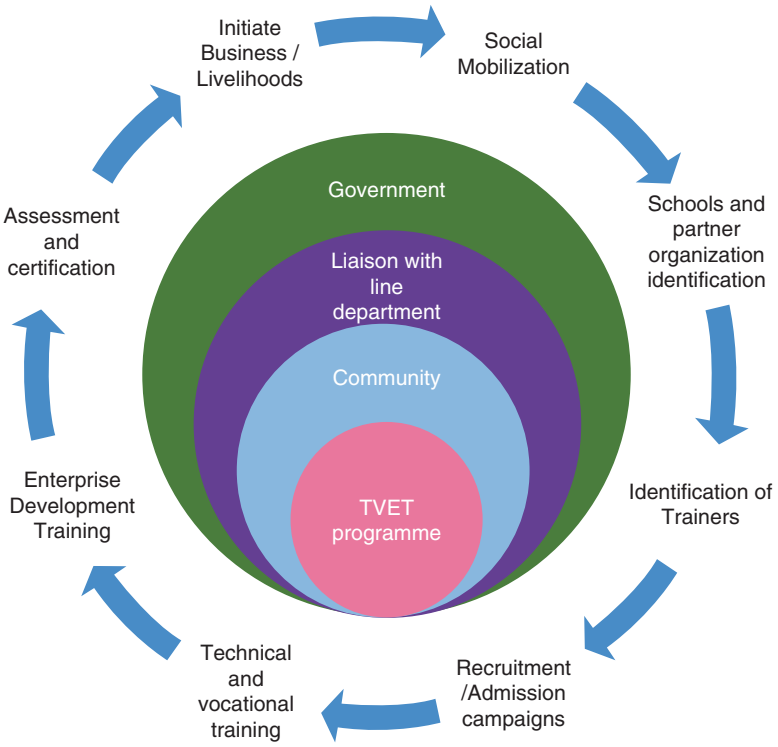

Fig. 3.1 The TVET program model

cated (if available) for the training to commence. Local employers are engaged at a later stage, to aid in the employment process.

Prior to imparting training, a Training Needs Assessment (TNA) is carried out to ensure that the material taught is driven by the demand. In the Province of Punjab, for example, a TNA was carried out in the overall geographic area at all Government Girls High Schools. All participants expressed their desire to learn technical skills that would aid in them earning a supplementary income. Four particular areas were chosen: selecting and planning a business, resource mobilization and utilization, establishment and management of a business, and sales and further expansion. Eventually, the results laid the framework of the skills training in the province, particularly in developing the Enterprise Development Training Program.

One of the most progressive ventures of ITA's TVET initiatives is named "Guddi Baji" – the project that was initiated and funded by UNILEVER Pakistan as part of their corporate social responsibility (CSR) project in conjunction with ITA and the TEVTA, Punjab. It is responsible for teaching the beautician course in the province of Punjab and currently holds 71 centers in the area. Two thousand two hundred and forty women have graduated from this course; once they are trained, they become a part of the UNILEVER supply chain.

Costs

The cost per student per course ranges from US$60 to 150, with AutoCAD courses being the most expensive. A "Guddi Baji" laboratory costs ITA around US$1500, while AutoCAD centers would cost US$4000 as they require computers. As a not-for-profit organization, ITA relies on external funding and support from various governmental and non-governmental bodies. UNILEVER Pakistan, for example, has been a committed CSR/core business partner since 2010, when they first implemented the pilot program in conjunction with ITA and the TEVTA Punjab. Other donors include the Department for International Development (DFID) through its Punjab Skills Development Fund (PSDF), Karachi Youth Initiative (KYI) – an urban initiative – and Social Welfare Academics and Training (SWAaT). The national and provincial governments, on the other hand, support them by providing them with adequate space, equipment, and utilities. There is also a third strand – a self-funded program introduced by ITA itself – that encourages trainees to pay for themselves, thereby actively supporting their own growth. Costs to the trainees are anywhere between US$12 and 22 per month.

Additionally, ITA also provides its graduates with interest-free loans through their philanthropic microcredit provision – specifically in the more rural areas – encouraging and aiding them in their entrepreneurial ventures. The revolving loans are anywhere between US$150 and 300. To date, recoveries are at 100 % with no defaulters (Table 3.1).

Impact to Date

Since its inception in late 2010, ITA's TVET initiative has taught over 10,000 trainees – out of which a little over than 9500 have graduated. The program now boasts 228 centers with a large concentration in the province of Punjab, followed by a good presence in Sindh and Balochistan. ITA is also moving into conflict-ridden areas, such as the Swat Valley of the Northwest Frontier, portraying the program's flexibility in terms of implementation. The benefits of graduating from these courses tracked thus far reveal that trainees are able to earn between US$80 and 200 per month – or more.

Success Factors

Strong Stakeholder Support System

One of the program's core strengths is that the model innovatively optimizes the high schools and penetrates the secondary school space as a mainstream daytime option. Not only does this reduce costs effectively but also attracts and taps into the youth bulge. This has only been possible due to the collaborative support ITA receives from governmental bodies that provide the school space to be utilized in this manner. The government views them as an organization that supports and emphasizes upon their efforts to promote technical and vocational education. While the government has the scale, ITA provides the skills.

Additionally, as a result of its presence in government secondary schools, ITA is able to demonstrate first hand to educational authorities, school principals, etc., how the TVET stream can be integrated at secondary level, thereby creating the opportunity to develop a link between education and the labor market.

Table 3.1 ITA (TVET) case study highlights

Approach	Idara-e-Taleem-o-Aagahi (ITA) has introduced a technical and vocational education and training (TVET) initiative that optimizes governmental educational spaces as community learning centers where 3–6-month-long certified courses are offered that teaches trainees (mostly disadvantaged girls/dropouts aged 15–30) the technical skills of a beautician, tailoring, etc., and aids in their development and empowerment
Governance and structure	Launched formally in early 2012, ITA works in collaboration with governmental and non-governmental bodies (the TEVT authorities, UNILEVER, KYI, SWAaT, etc.) that aid in the program's implementation and provide resources, fiscal aid, and the formal certification that has ensured its success. As an NGO, ITA has many other separate educational ventures that are separated from this initiative. The courses offered at each center are dependent upon the need in the area
Cost and finance	The cost per student per course ranges from US$60 to 150. A "Guddi Baji" beautician laboratory costs ITA around US$1500, while AutoCAD centers would cost US$4000 as they require computers. ITA is reliant upon external funding and support from various governmental and non-governmental bodies. UNILEVER Pakistan has been a committed CSR/core business partner since the program's inception
Impact to date	Since its inception, this initiative has taught over 10,000 trainees – out of which a little over than 9500 have graduated. The program now boasts 228 centers with a large concentration in the province of Punjab, followed by a good presence in Sindh and Balochistan. The benefits of graduating from these courses tracked thus far reveal that trainees are able to earn between US$80 and 200 per month – or more
Underlying factors of success	As an organization that works with the government as well as other bodies, ITA has a strong stakeholder support system in place that has ensured its success in terms of scale and sustainability. Their simple model, which is easily adaptable and highly effective, has also been vital in their expansion. The fact that ITA is a reputed organization that provides government-certified courses is yet another factor augmenting their success
Challenges	It has sometimes been difficult for ITA to find suitable, certified trainers in both rural and urban areas. The organization also faces difficulty in convincing stakeholders that their program is effective, given there is a considerable gap in their impact measuring mechanisms. ITA also wishes to see a TVET component properly integrated in the national curriculum, but so far it has been an arduous task convincing the government. There is also a possibility that the government will refrain from allowing them to use governmental secondary schools as their centers
Future priorities	Although they already have a fairly strong presence in three provinces, particularly Punjab and Sindh where more than half their centers are located, ITA is looking to expand aggressively and more evenly across the country – but more so as the providers of a mainstream TVET option as opposed to an NGO-run initiative. They aspire to empower the youth in such a manner that they will be able to introduce and handle their own programs and thereafter push more people to focus on the area of skills development

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To launch the program in an area, not only does ITA need governmental support but also fiscal and resourceful support which can only be attained through partnerships with private or non-governmental organizations. ITA's partnership with multiple other stakeholders – such as UNILEVER, PSDF, KYI, and SWAaT – has aided in this process and attributed to its success. While the former two have aided both through fiscal and personnel support since the conception of the program, the latter have ensured the program's spread in even the migrant urban fishing communities of Korangi (Karachi) and extremely rural areas such as the Swat Valley. Through their partnership with PSDF, for example, programs such as "Skills for the Market" and "Skills for Jobs" have been introduced and implemented, which have a special focus on engagements with employers and private industries.

Replicable and Sustainable Model

Due to the simplistic nature of the program (that of optimizing governmental educational spaces as community learning centers to promote the idea of skill-based learning as a parallel option to curriculum-based learning), replicating it at a national or international level is not difficult, as long as modifications are made that pertain to the differing contexts. For example, the center in the Swat Valley uses a slightly unique method of management and implementation that ensures the youth are engaged; here, the TVET program is a kind of therapy for the youth who are otherwise void of such opportunity. So while implementing the model can be challenging in certain areas, ITA has been efficient in tailoring the program to suit the varying situations.

ITA has also managed to keep its costs down through effective management techniques, such as using daily SMSs to monitor the centers (for participation, attendance, etc.), further emphasizing the extent to which this model is effective and sustainable.

Credible Organization with Certified Courses

To ensure that students are able to become responsible, productive, and empowered citizens, they need to be trained in something that is marketable. Another factor that adds to the success of this program is the fact that the courses are fully certified, giving both the organization and the course credibility. The curriculum of each course is developed through studies, competencies, and standards devised by the TEVTA/STEVA – who are also abreast of what is being taught – further verifying ITA as a dependable TVET organization. All programs, specifically the ones in Khyber Pakhtunkhwa, Punjab, and Sindh, are certified jointly by ITA and the TEVTA/STEVA of the respective provinces.

Challenges

Lack of Skilled and Suitable Trainers

The program entirely targets the more disadvantaged population of Pakistan and intervenes in areas that have low social and economic indicators. Therefore, there is automatically a focus on the rural areas. One of the many difficulties in such areas is that good, certified trainers are a rarity. More often than not, this difficulty is also faced in the more urban areas.

To find suitable trainers, ITA reaches out to other certified organizations that provide trained individuals for such roles. On the other hand, they also hire their

own graduates as trainers certified by the TEVTA in order to move further toward self-sustainability.

Difficulty in Convincing Stakeholders to Introduce/Fund the Program

As mentioned above, a factor that has been essential in the execution of this venture is the dedicated support of the various stakeholders. Still, it can initially be challenging to convince them of the program's long-term benefits and sometimes even to sustain their support over a long period of time. On the other hand, even finding copartners to launch the program – particularly in rural areas – has been problematic. However, ITA is ensuring that stakeholders are kept constantly engaged and informed of the progress being made.

To further facilitate this process and tackle the difficulties, the organization is already executing the following: (a) existing donors and authorities are promoting the initiative as a low-cost sustainable program for the youth in order to establish more partnerships in a similar manner; (b) a social marketing campaign is being launched using successful income-generating graduates to speak for the program as a valued model; and (c) companies and organizations that would offer employment opportunities are coming on board; therefore contribution is concretely being made towards human resource development.

Difficulty in Integrating a TVET Component with the National Curriculum

ITA aspires for TVET programs to be more synergized with the traditional curriculum, but so far this has been a difficult venture. Thus, the organization is working toward integrating the national curriculum with the TEVTA/STEVA/TVET courses by trying to convince the government and/or partners – through hard evidence – of the replicability, scalability, and need for such courses to become a mainstream secondary school option. ITA is constantly engaging with the government, curriculum bureau, and boards of examinations to review the possibilities for TVET integration based on the ITA model of 3–6-month courses.

Gap in Measuring Impact

Once the students complete the courses, they are assessed appropriately as per their course; those who graduate are given certificates that will aid in their employment. Apart from general statistics on how many have passed and failed, ITA has little information on what becomes of the trainees post-graduation – specifically in terms of them acquiring and retaining jobs. Some data exists, but there is a general lack of information that would deduce how impactful the program really is.

To ensure that stakeholders are persuaded that this program is worthwhile, it would perhaps be beneficial for ITA to devise a system through which they can track the progress of their graduates. For example, the Pratham Open School of Education (POSE – discussed in detail in Chap. 2) in India will begin an alumni association for their students that will both provide the students with a forum where they can interact with one another and track their post-POSE journeys. An arrangement like this could be successful for ITA as well.

Using Government Schools as Space

There is a chance that the government may refrain from allowing ITA to use the government secondary school buildings – this can happen when the schools or the governmental authorities jump into the program without the adequate skills of rela-

tionship management, therefore creating chaos at the centers. Although this is highly unlikely, the organization is already exploring other options, such as community-based facilities, low-cost housing complexes that target the same age group, etc. There have already been instances where the district coordination officers have provided ITA with spaces in affordable housing and model villages, specifically in flood-affected areas.

Future Priorities

As an organization committed to improving the lives of disadvantaged Pakistani youth, ITA has, through its TVET initiatives, positively impacted many. Although they already have a fairly strong presence in three provinces, particularly Punjab and Sindh where more than half their centers are located, ITA is looking to expand aggressively and more evenly across the country – but more so as the providers of a mainstream TVET option as opposed to an NGO-run initiative. The informal sector makes up for 80 % of Pakistan's economy, and ITA believe that leadership and technical skills are going to be even more desirable in the coming future. They aspire to empower the youth in such a manner that they will be able to introduce and handle their own programs and, thereafter, push more people to focus on the area of skills development. On the whole, ITA's dogged determination and vision will ensure the successful expansion of TVET in Pakistan.

Conclusion

Globally, youth unemployment has been estimated to be 73.4 million people (ILO, 2013). For the estimated 115 million 5–17-year-olds working in hazardous conditions in 2008, they did not possess the necessary skills and, therefore, likely to remain in poorly paid and insecure jobs for the rest of their lives (UNESCO, 2012). There has been agreement from numerous organizations that in order to be employable, people need foundation, transferable, technical, and vocational skills (UNESCO, 2012, 2015).

The outlook for youth could be considered positive. The governments of OECD and non-OCED countries are implementing skills development policies for secondary schools and TVET institutions in the public and private sectors for youth to be better prepared for the workplace. In many countries, for those living in rural communities and/or from poorer family financial backgrounds, their prospects of gaining a holistic education with employable skills are of constant concern. Governments are more aware of the number of out-of-school students in primary and secondary education, and many countries particularly in the Asia-Pacific region are actively taking action to address the needs of their youth.

This chapter has included case studies from two non-governmental organizations – LAHI and ITA – that have actively engaged with communities in India and Pakistan, respectively. The two organizations have worked in partnership with governmental and educational authorities to promote their programs being integrated

with technical skills and workplace learning, thus, ensuring young people receive a holistic education that adequately prepares them for the workplace and life in general.

The LAHI and ITA programs have faced challenges. These have included traditional rote learning methods employed in public schools in India and Pakistan and convincing parents of the worth in practical hands-on teaching methods. TVET programs have continuously received negative publicity and considered second rate compared to higher education courses. Such negativity, therefore, causes problems enrolling students and long-term program sustainability. Changing the opinions of the stakeholders, particularly parents of potential students enrolling on the programs, will possibly be an ongoing challenge. Ultimately, both courses have developed the technical and vocational skills of thousands of youth and, it would seem, replication to not only other regions of India and Pakistan but possibly to other countries as well.

References

Aggarwal, S. (2016). Central pillar of employability: Skill development. *Imperial Journal of Interdisciplinary Research, 2*(3), 386–389.

Agrawal, T. (2012). Vocational education and training in India: challenges, status and labour market outcomes. *Journal of Vocational Education & Training, 64*(4), 453–474.

Agrawal, T. (2013). Vocational education and training programs (VET): An Asian perspective. *Asia-Pacific Journal of Cooperative Education, 14*(1), 15–26.

Allais, S. (2012). Will skills save us? Rethinking the relationships between vocational education, skills development policies, and social policy in South Africa. *International Journal of Educational Development, 32*(5), 632–642.

Alam, N. (2015). The role of technical vocational education and training in human development: Pakistan as a reference point. *European Scientific Journal, 11*(10), 35–30.

Ansari, B., & Wu, X. (2013). Development of Pakistan's technical and vocational education and training (TVET): An analysis of skilling Pakistan reforms. *Journal of Technical Education and Training, 5*(2), 152–164.

Comyn, P. (2014). Linking employment services, skills development & labor market needs: Issues for India. *Indian Journal of Industrial Relations, 49*(3), 378–389.

Cunningham, W., & Villaseñor, P. (2014). Employer voices, employer demands, and implications for public skills development policy. *World Bank Policy Research Working Paper, 6853*.

Dang, H. V. (2015). Parental perspectives towards the vocational education training sector in Vietnam. *Journal of Education and Vocational Research, 6*(1), 37–51.

Goel, V. (2011). *Technical and vocational education and training (TVET) system in India for sustainable development*. Bonn, Germany: UNEVOC.

ILO. (2013). *Global employment trends for youth 2013: A generation at risk (executive summary)*. Geneva, Switzerland: ILO.

LAHI. (2013). *Impact assessment (final report)*. Obtained on 14 March 2015 through private communication with the LAHI.

NAVTTC. (2015). *TVET institutes in Pakistan*. http://www.navttc.org/TVET_Pakistan.aspx. Accessed on 8 Mar 2015.

New Zealand Curriculum. (2016). http://nzcurriculum.tki.org.nz/Curriculum-resources/Career-education/Career-management-and-curriculum/Progression-across-year-levels. Accessed on 13 Mar 2016.

OECD. (2010). *Education at a glance: OECD indicators*. Paris: OECD.

Pavlova, M., & Maclean, R. (2013). Vocationalisation of secondary and tertiary education: Challenges and possible future directions. In R. Maclean, S. Jagannathan, & J. Sarvi (Eds.), *Skills development for inclusive and sustainable growth in developing Asia-Pacific* (pp. 43–66). Dordrecht, The Netherlands: Springer.

Raman, C., & Gupta, V. (2015). *Preparation for the world of work: Secondary and higher education in India.* Ahmedabad, India: Indian Institute of Management. http://www.iimahd.ernet.in/assets/snippets/workingpaperpdf/19123566942015-02-03.pdf. Accessed on 15 June 2016.

TEVTA. (2014). *Skills for growth & development: A draft national technical and vocational education and training (TVET) policy.* Islamabad, Pakistan: TEVTA. http://moent.gov.pk/gop/index.php?q=aHR0cDovLzE5Mi4xNjguNzAuMTM2L21vcHR0bS91c2VyZmlsZXMxL2ZpbGUvRm1uYWwlMjBDb25zdWx0JTIwUGFwZXIlMjBvZiUyMFRFVlQlMjBQb2xpY3kucGRm. Accessed on 18 Nov 2014.

UIS. (2013). *All children in school by 2015: Global initiative on out-of-school children – ESAR Regional Report*. Montreal, QC: UIS.

UIS. (2015a). *India country profile.* http://www.uis.unesco.org/DataCentre/Pages/country-profile.aspx?code=IND&regioncode=40535. Accessed on 6 Dec 2014.

UIS. (2015b). *Pakistan country profile.* http://www.uis.unesco.org/DataCentre/Pages/country-profile.aspx?code=PAK&regioncode=40535. Accessed on 15 Dec 2014.

UNESCO. (2000, April 26–28). *The Dakar framework for action education for all: Meeting our collective commitments.* Adopted by the World Education Forum Dakar, Senegal.

UNESCO. (2010). *Secondary education regional information base: Country profile – Pakistan*. Bangkok, Thailand: UNESCO. http://www.uis.unesco.org/Library/Documents/Pakistan.pdf. Accessed on 2 Jan 2014.

UNESCO. (2012). *EFA global monitoring report 2012. Youth and skills: Putting education to work (Summary)*. Paris: UNESCO.

UNESCO. (2013). *Expanding TVET at the secondary level*, *Asia-Pacific education system review series no. 7*. Bangkok, Thailand: UNESCO.

UNESCO. (2014). *EFA global monitoring report 2013/4. Teaching and learning: Achieving quality for all*. Paris: UNESCO.

UNESCO. (2015). *EFA global monitoring report 2015. Education for all 2000–2015: Achievements and challenges*. Paris: UNESCO.

World Bank. (2006). *Pakistan: An assessment of the medium-term development framework*, *Higher education policy note, report no. 37247*. Washington, DC: World Bank.

World Bank. (2007). *Skill development in India: The vocational education and training system.* http://info.worldbank.org/etools/docs/library/235724/skills%20development%20in%20india%20the%20vocational%20education%20and%20training%20system.pdf. Accessed on 2 Mar 2015.

World Bank. (2008). *Skill development in India: The vocational education and training system*, *Report no. 22, January 2008*. Washington, DC: World Bank.

Yao, J., Yi, H., Zhang, L., Wang, H., Yang, C., Shi, Y., Chu, J., Loyalka, P., & Rozelle, S. (2013). *Exploring dropout rates and causes of dropout in upper-secondary vocational schools*. Palo Alto, CA: REAP Working Papers, Stanford University.

Chapter 4
Systemic Curricular Change

Katherine Namuddu, Nitika Jain, and Bob Adamson

Introduction

It is generally acknowledged that the curriculum of secondary education in many developing countries has remained unchanged for more than half a century. Its main focus is on enabling students to acquire discipline-orientated cognitive knowledge leading to entry into tertiary education.

Yet, in the context of today's global economy, secondary education is the level from which the majority of youth try to enter the labor market. The labor market demands three sets of skills from youth for employment – cognitive, non-cognitive, and technical. While the youth must draw on all three sets of skills in order to find, retain, and pursue employment successfully, research discussed elsewhere in this book reveals that transferable and non-cognitive skills (such as critical thinking, business skill, openness to learning, good work habits, planning, independence, self-confidence, communication, leadership, social interaction, time management, financial management, teamwork, entrepreneurialism, ability to solve problems, and flexibility) are increasingly important. This implies that the secondary education and training curriculum must find effective ways to develop these three sets of

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skills in all students if it is to successfully prepare youth for employment. The curriculum at secondary school must undergo a major overhaul in order to include content, practices, methods of teaching, and learning attitudes through which students will acquire, practice, consolidate, and master sufficiently the skills for employment. The major question is how might the curriculum of secondary education approach this challenging task?

Traditionally, systemic change of the curriculum in an education system has been a national endeavor entrusted to the education sector and, in particular, to the curriculum development agency under ministries of education. The agency would review the content and carry out upgrading or retraining of teachers so that they can deal with new topics using new teaching methods and delivery technologies.

Recently, however, the range of stakeholders in the education system has expanded to include NGOs, industry, the private sector, and a variety of funding partners and labor market associations. Not only do these stakeholders have a major interest in the nature of the curriculum that will lead to acquisition of skills for employment but they also have often been at the forefront of planning innovative experimentation designed to introduce new content, skills, and methods of teaching in this particular area of the curriculum.

Usually innovative experimentation with curriculum change carried out outside the national education policy sector, though very successful, is at a small scale, covering only a few schools. Often it is difficult to get the national education sector to learn from the results of such experimentation so as to incorporate the successes into systemic curriculum reform. This chapter offers two innovative and instructive case studies on how two countries – Senegal and India – are focusing on systemic curriculum change that incorporates skills for employment and access to the labor market.

Three Critical Issues

It is crucial to appreciate three critical issues that face those education systems that are attempting to provide the three sets of skills for employability through systemic curriculum change. First, it has to be acknowledged that, indeed, a proportion of students in mainstream secondary education will advance to university and other tertiary institutions. Therefore, the curriculum at secondary education has to ensure that students acquire sufficient background knowledge of a core of disciplines in order to successfully enter tertiary institutions.

Second, it has to be appreciated that a proportion of students in mainstream secondary education will complete secondary education and then move immediately into the labor market. This implies that if these students learn only the knowledge of the core disciplines, they will not have the requisite skills and attitudes required for entry into the labor market and will, in all probability, have to do additional training so as to acquire such skills. However, the majority of these students are not likely to have the resources needed to fund their post-secondary skills training courses.

Therefore, the curriculum at secondary education has to ensure that students acquire sufficient skills and attitudes for employment in order to successfully enter the labor market at the completion of secondary education.

Third, it has to be recognized that a sizeable proportion of students who enroll in mainstream secondary education drop out before completing the full course. These dropouts usually enter the informal labor market and begin to make a long and often frustrating effort to acquire skills with which to sustain self-employment. Patterns of dropping out of secondary education are uneven across this level of education. However, rates are generally highest during the first 2 years.

This implies that a secondary school curriculum that front-loads and emphasizes many of the non-cognitive skills in the early part of secondary education cycle is more likely to benefit students who drop out and join the informal labor market.

The two case studies described in this chapter take full consideration of these three categories of youth. However, given the very different national contexts and the levels of economic development, the systemic curriculum change models take slightly different approaches and emphases in addressing the three types of youth.

The Education de Base (EDB), Senegal

In Senegal, the Education de Base (EDB) program was designed to improve the quality of middle school. Like much of the rest of Africa, the secondary school level is now the level from which most Senegalese youth are entering the workforce, highlighting the importance of ensuring that these youth are equipped not only with basic literacy and numeracy skills but also with transferable skills – such as critical thinking, communication, flexibility, and other skills relevant to the twenty-first-century labor market.

In some respects, EDB was a more conventional approach to systemic curriculum change promoted by the government. Its innovative aspects consist of the partnership between the national education policy sector, USAID as a donor partner, and a US-based NGO FHI-360, who provided the technical assistance for implementation.

Unlike the model in India (later in this chapter) – where the greatest emphasis is on mobilizing the private sector to offer skills training in private technical and vocational training institutes – in Senegal, the large-scale initiative was aimed at revitalizing middle schools countrywide. The multifaceted program emphasized five core components:

(a) *Curriculum and pedagogy were reformed*. There was original mapping to assess the state of curriculum and pedagogy, which led to defining new objectives of the curriculum including a set of competencies that every student should possess by the time they complete middle school. The overall goal was to improve the quality and relevance of middle school curriculum content by incorporating twenty-first-century skills and introducing student-centered teaching methods

and continuous assessment tools. The process of developing a reformed curriculum engaged a multitude of stakeholders including the Ministry of Education, curriculum development authorities, the inspectorate, teacher training schools, other government bodies, business, teacher associations, school administrators, parent associations, and other non-state actors not only to ensure buy-in but also to increase relevance to national demands for employment.

(b) *Integrating the use of information and communication technology resources*, including infrastructure and training, to enhance teaching and learning.

(c) *Strengthening good governance and management* by building the capacity of actors involved in education governance (local ministry officials, school boards, parent associations, and others) to collaborate and effectively oversee the administration of middle school resources and encourage transparent and well-governed educational communities to ensure that resources are effectively managed.

(d) *Enabling the development of public-private partnership* especially with industry and the private sector through their contribution of additional ICT infrastructure and resources to schools as well as their enabling students access to industry and the world of work.

(e) *Paying specific attention to enabling vulnerable children and marginalized children populations* to have access to high-quality, relevant education and training.

Overall, EDB's approach effectively takes care of the three types of students in mainstream secondary education in Senegal. First, the program has a strong component of core disciplinary knowledge that enhances the consolidation of literacy, numeracy, and scientific cognitive skills supported by a strong component of developing and using ICT skills in learning. Therefore, the students that want to advance to tertiary education acquire a strong knowledge foundation but are also orientated to considering alternatives to purely discipline oriented work attitudes and future careers.

Second, EDB uses a combination of strategies to provide for those students that are likely to enter the labor market at the end of secondary school. First, there is a strong component of non-cognitive skills, with emphasis on skills needed for success in the twenty-first-century labor market relevant to Senegal's economy. Second, students get firsthand experience of how these skills are applied and used at the workplace by participating in industry mentorship and community events. Third, the most emphasized methods of learning are student centered whereby through the use of problem-solving frameworks, independent research through the use of ICT, and learning using student workbooks, students develop independence and self-reliance as well as teamwork and responsibility.

Third, EDB's approach to the third category of students, namely, those who drop out prematurely, has two prongs. First, EDB has supported vulnerable populations in over 350 *daaras* (Koranic schools), offering a 3-year program where students learn French, math, history, and life skills. The goal is to equip them with knowledge and skills and allow them to transfer to formal schools at the end of the

program. Second, EDB has worked toward eliminating the in- and out-of-school factors that cause early school dropout in the middle school. One of the efforts has been to balance the curriculum such that it combines proportionate amounts of core discipline content as well as content with non-cognitive and technical skills. The emphasis on student-centered pedagogy (which focuses on learning rather than on teaching) and the development of supporting materials for each subject (including curriculum guides by subject, pedagogical guides, student handbooks, multimedia tools, and ICT) ensure that all students have an opportunity to participate actively and display their talents and preferences which are, then, nurtured by teachers who have been reoriented to appreciate students' unique capabilities and aptitudes. Third, EDB has paid specific attention to the total school environment by enabling leadership in the education sector to understand better the effects of good school management, governance, and accountability. In addition, parents have been involved in various aspects of the initiative's implementation so that the home environment supports the new and more vigorous school environment. Finally, the introduction of competency-based assessment makes it easier for parents, students, and teachers to understand the objectives and importance of every learning component and provides motivation for students to pursue more concretely the practices needed to acquire and demonstrate the required competencies. Additionally, continuous assessment ensures that all stakeholders have ample opportunity to gauge where they are at strategic points of the courses and what they need to do in order to achieve set targets.

The next section features the detailed case study of EDB program.

Case Study 1: Improving the Quality and Relevance of Middle School in Senegal – FHI 360's "Education de Base" ("Basic Education") Program[1]

Introduction

In 2000, the Government of Senegal (GOS) launched a 10-year plan of action to support the realization of the Millennium Development and Education for All Goals by 2015. This *Programme Décennal de l'Education et de la Formation* ("Education and Training Development Plan" or PDEF) established a framework to guide the continued expansion of the education sector. However, while the expansion was successful and enrollment levels continued to rise, it became increasingly apparent that education quality was actually deteriorating and that efforts to improve the quality would be needed simultaneously to ensure that education resources were not being wasted (DeStefano et al., 2009).

Meanwhile, with the expansion of access – in particular at the primary level – the growing influx of students into secondary-level schools became a pressing concern. Like much of the rest of Africa, the secondary level was now the level from which most Senegalese youth would be entering the workforce, highlighting the importance of ensuring that these youth are equipped not only with basic literacy and

[1] Summarized from Brown, E. J., Acedo, J. M. R., et al. October 2013. Pathways to Employability: Part II: Case Studies of Six Innovative Programs to Enhance Skills for Employabilty in Youth. *Results for Development Institute.* Accessible from: http://r4d.org/knowledge-center/innovative-secondary-education-skills-enhancement-isese-phase-ii-research

numeracy skills but also transferrable skills such as critical thinking, communication, flexibility, and other skills relevant to the twenty-first century (R4D, 2013). However, by the middle of the PDEF's implementation period, middle school pass rates remained low and dropout rates stubbornly high (DeStefano et al., 2009), and an outdated curriculum meant that many students were leaving school without the skills necessary to obtain productive and lasting employment.

The Education de Base ("Basic Education" or EDB) project seeks to address these challenges at the national level by reforming the secondary-level curriculum, introducing alternative teaching methods and tools, and encouraging a transparent and well-governed educational community to ensure that resources are effectively managed. While many innovative models identified in the ISESE Phase I research tackle the skills gap through a particular approach or targeting a specific geographic or demographic population, EDB is unique in its national-scale implementation, the comprehensive nature of its curricular and instructional reform, and its systemic approach to improving skills development at the secondary level. It is for these reasons that it was selected as the Africa Winner of the ISESE competition in 2012.

Program Overview

EDB is a 5-year, US$33.5 million project funded by USAID and implemented in full partnership with the Ministry of Education (MoE) and other local partners. The program's self-described goal is to create an "engaged and efficient education community," and, as noted above, it champions the values of equity, relevance, and transparency through five key components:

1. *Curriculum and pedagogy reform*: improving the quality and relevance of middle school curriculum content and delivery
2. *Information and communication technologies*: enabling schools and students to enhance teaching and learning through access to ICT resources, including infrastructure and training
3. *Good governance and management*: building the capacity of actors involved in education governance (local ministries, school boards, parent associations, and others) to collaborate and effectively oversee administration of middle school resources
4. *Public-private partnerships*: facilitating partnerships between public and private sectors to improve middle school and Koranic school education
5. *Vulnerable children*: ensuring that vulnerable and marginalized populations in Senegal (including girls) have access to high-quality, relevant education and training

The project works with public schools, including community *daaras* (Koranic schools) in 10 of the 14 regions in Senegal. To date, it has reached almost 9000 teachers and 200,000 students in over 500 middle schools and 25,000 vulnerable children in *daaras* and other informal education centers in Senegal. In the final year of the project, a *Compendium of Resources* containing all of the project tools was distributed to all 1300 middle and high schools, 355 *daaras*, school officials,

parents' associations, representatives of elected officials, and other partners of the project, to equip them with EDB's innovations and best practices for use moving forward as the project comes to a close.

Curriculum and Pedagogy Reform

EDB's curriculum and instruction reform component is one of the project's flagship programs. It is unique in its comprehensive nature, national scale, and support and cooperation from the Government of Senegal. The curriculum reform process began with a participatory mapping exercise to assess the current state of curriculum and pedagogy in Senegal and then to define what the objectives of the curriculum should be – including a set of core competencies that every student should possess by the time they complete middle school.

A revised curriculum was then developed, grounded in a student-centered approach that focused on twenty-first-century skills development. The curriculum was developed to be competency based, with updated content relevant to today's knowledge and employment demands. This process engaged a multitude of stakeholders, including the MoE, curriculum development authorities, the inspectorate, the teacher training school, and other government bodies, businesses, teacher associations, school administrators, parent associations, and other non-state actors.

It was also recognized that any reformed curriculum would need to be imparted through an alternative, student-centered pedagogy focused on learning rather than teaching. To this end, EDB developed supporting materials for each subject, including curriculum guides by subject, pedagogical guides, student handbooks, multimedia tools, and ICT support. To ensure that materials are used effectively, EDB implemented a teacher training program to assist schools in delivering the new curriculum and also trained principals and other school administrators on instructional leadership, good governance, and ICT usage. Continuous assessment methods were also introduced through the updated instruction, accompanied by an assessment tool kit. For the schools not reached by the project, the teaching and learning materials used in the teacher training are publicly available via a professional development website developed by the project (discussed below).

Recognizing that a one-off training of teachers would be insufficient to produce a lasting change in teaching and learning, EDB piloted an intensive teacher training program, *Formation Rapprochée Intensive* ("Close Intensive Training" or FRI). The program was implemented in 40 schools during the 2011–2012 school year and consisted of an intensive 4-h training session every 2 weeks by pedagogical experts to train teachers in the usage of the EDB pedagogical guides and the continuous assessment tool kit. The training was collaborative and involved expert guidance as well as peer feedback mechanisms. The FRI also had a built-in monitoring and evaluation scheme, designed to provide feedback on the success of the training and pedagogical guides by comparing student assessments in math and science as compared to control schools without the FRI.

Information and Communication Technologies

The ICT component of EDB enables schools, administrators, and teachers to access innovative teaching and learning tools by introducing computer labs in middle schools across the country and provides students with critical twenty-first-century

skills. This includes the provision of infrastructure (hardware and software), Internet connectivity, IT support, and training of two teachers as school-based ICT coaches, who, in turn, train teachers and students in each participating school to use the computer and Internet.

Each of these schools is also supported to create a school website, which is managed by the ICT clubs and supervised by trained teachers. The websites provide a forum for greater communication and transparency in school affairs, including postings from student newspapers, student government reports, and school management committee and budget reports. In addition to school websites, EDB has also developed a portal for professional development in education, which provides a collaborative space for teachers and administrators to share and access digital content and other resources. Through a training of trainers' structure, teachers are taught how to integrate these technology-driven tools into current pedagogical approaches.

Good Governance and Management

EDB works with school governance systems to engage the full spectrum of school stakeholders – including elected officials, local school boards, school administrators, parent associations, and other community associations – to increase effectiveness and efficiency, transparency, and accountability of middle school management and ensure that they are responsive to the community's needs. After a thorough and participatory audit of the governance and management needs of middle schools, EDB developed an action plan for good governance in education in partnership with the MoE.

Central to the action plan is building the capacity of key education management actors, including training on communication and leadership, educational policy and governance, project planning and management, administrative and financial management, and public dialogue. Strategic advisory sessions are also organized to provide targeted and context-specific support to local education boards, community organizations, parent-teacher associations, and school administrators. Finally, public dialogue efforts at the national and regional levels are supported to promote and reinforce the importance of good governance and management of educational resources.

Public-Private Partnerships

EDB aims to foster an engaged and efficient education ecosystem by involving the private sector in important ways. Firstly, the private sector has been engaged to provide financial or in-kind contributions to schools in the form of infrastructure improvement, ICT materials and maintenance, and training programs. The private sector was also engaged in a consultative process when evaluating and reforming middle school curriculum to ensure that the skills developed would be relevant to the demands of the job market.

Vulnerable Children

Responding to Senegal's high out-of-school youth problem, EDB targets poor and marginalized populations to ensure that quality education is provided to those who are particularly at risk. EDB has worked to rally national and state governments, local elected officials, and national opinion leaders to champion the cause,

publicly committing to improve the situation of these children through targeted interventions.

Central to efforts to support vulnerable populations is the project's support to over 350 *daaras*. EDB introduced a 3-year program that provides *daaras* with a volunteer teacher who teaches French, math, history, and life skills to children from 6–12 years old, with the goal of equipping them to transfer to formal schools at the end of the program. In addition to strengthening teaching capacity, EDB has rehabilitated the teaching and learning spaces of these schools, built latrines, and put in place *daara* management committees to support the long-term management needs of these schools. The project also supports the development of vocational education and training interventions for 13–18-year-old children in *daaras* and for school dropouts and works to return street children to their homes through the development of life skills projects implemented by local community organizations. Finally, more broadly, in middle schools throughout the country, school dropout prevention councils have been created in order to offer a structured approach to recognizing and supporting at-risk children.

Costs

EDB's activities are funded primarily through the USAID cooperative agreement. Given the wide range of inputs to the various components and activities, it is difficult to estimate a per-student cost of this program overall. Establishing the ICT centers costs approximately US$ 10,000 per school, or approximately a one-time cost of US$ 25 per student. The MoE has brokered an agreement with utility companies to provide power and connectivity to these centers at a 50 % reduced rate and cost-share agreements with ICT vendors, which contribute to reduced costs for materials, training, and other support. The curriculum reform innovations cost approximately US$4.2 million and have reached 400 schools and 160,000 students. This represents a US$ 26 per student cost expended over the course of the 5 years of the project.

Impact to Date

Given EDB's strong partnerships with the government and the resulting opportunity to implement on a national scale, the project has had widespread impact on Senegal's middle school system over the past 5 years. The project's monitoring and evaluation plan tracks impact in all five project components, monitoring indicators ranging from the number of schools instituting new curriculum and materials; the number of teachers, administrators, parent associations, and other bodies trained; and the number of schools with functional school websites, among others.

By the Numbers

Through its improved curriculum and instruction component, over 400 schools have been reached by the project, but anecdotal data suggests that all 1200 schools in Senegal are using the curriculum materials. By the project's fourth year (ending September 2012), the project had trained 7835 teachers to use the revised curriculum and relevant educational materials, with 1022 other school principals, administrators, and pedagogic advisors trained on how to support teachers in implementing the new curriculum.

More broadly, through the good governance component, 2500 school administrators and elected officials and over 5000 parents have been trained on the better

management and implementation of educational resources. Also by 2013, 295 schools have been equipped with computer labs, Internet connectivity, and ICT support – including the institution of 295 ICT clubs and over 3000 teachers and administrators trained on how to integrate ICT in teaching, learning, and school management. To support the ICT programs, businesses have contributed over US$2.5 million in in-kind or cash donations since the project's inception.

At the student level, EDB estimates that 50,000 students have been exposed to the world of work through career days and other activities designed to encourage visioning of future goals for students and focusing on development of transferrable skills. The project also estimates that 38,000 vulnerable children now have access to better quality education through the project's work with *daaras* and efforts to engage street children and other at-risk populations.

Teacher Training Impact

Through the FRI program, teachers in 40 schools participated in the intensive training program and were evaluated in comparison with 40 schools participating in the EDB program more broadly – as well as 40 schools not involved with EDB. While no statistically significant impact on student test scores could be found between FRI and non-FRI schools, the project found positive correlation between FRI schools and usage of learner-centered teaching methods, parent knowledge and understanding of critical thinking and good governance in schools, and of teachers helping struggling students to improve.

Additionally, and perhaps even more importantly, the FRI generated great enthusiasm among teachers in FRI and non-FRI schools alike, driving teachers to the project's online professional development portal and instituting independent teacher support systems within schools. Because of the high demand, the EDB project has supported the generalization of the FRI model through the use of a zonal approach, enabling all schools in a region to participate in these half-day training sessions. While the project supports the trainers' travel to the training site, teachers' pay their own way to attend, and the host schools ensure the availability of snacks and refreshments.

At the Policy Level

Perhaps EDB's greatest successes have been the adoption, and, in many cases championing, of reforms by the Senegalese government. This speaks to the program's overall sustainability as well. For example, despite the inconclusive effects of the FRI on student test scores, the MoE has adopted this training model and plans to institutionalize it as a structure for professional development in education at the national level.

Success Factors and Lessons Learned

The success of the EDB project rests largely on its determination to build strong partnerships and create ownership among local stakeholders. While projects funded by development aid agencies like USAID and implemented by large international development contractors like FHI 360 have a specific set of inherent challenges (to be discussed below), the EDB project sought to counter these challenges by ensuring that actors at every level in Senegal's education ecosystem – from national to regional to local – were invested in the project from the beginning. Instead of driving the process from the outside, FHI 360 played the role of facilitator by encouraging

collaboration among these actors, helping to develop a well-defined structure and strategy for reform, and providing technical assistance along the way.

Key Partnerships

The most important partnership is that with the Government of Senegal and in particular the Ministry of Education. The project responded to an existing and expressed need of the MoE to reform – or, as some might argue, build – its middle school education system and decided to engage external support to design and implement this reform. In its role of facilitator, FHI 360 has provided the ministry with a "scaffold" for innovation: drawing upon national priorities and innovations and assisting the ministry in creating a framework for implementation. This can be seen most prominently in the development of the reformed curriculum and instruction guides, where many different actors within and outside the ministry played a role in defining the content for the curriculum, and FHI 360 played the critical role of moderating between sometimes competing minds to steer the process toward a clear and comprehensive outcome.

Clear-Cut Strategy from the Beginning

Another key factor to EDB's success was its clear vision from the very beginning for a successful implementation strategy. The strategy involved a phased approach (see Fig. 4.1) to ensure that reforms were carefully thought through, tested, and scaled up after appropriate adjustments were made.

In the first "conceptualization" phase, the consultative process with a variety of stakeholders led to creating a plan for reform that was responsive and well defined. The second phase, "modeling and experimenting," involved testing this plan with a small group of schools to gauge receptiveness and capability of schools and communities to respond to and embrace the reforms, providing support and making

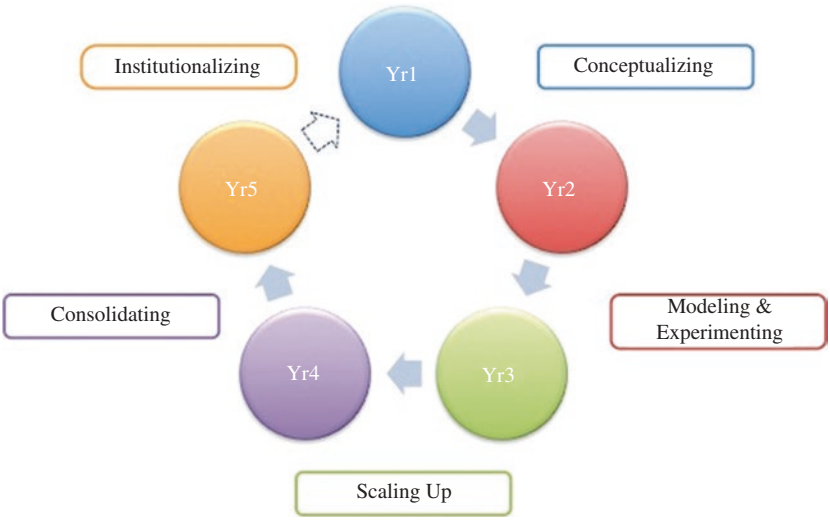

Fig. 4.1 Phased approach to EDB implementation (Adapted from Nicoleau, 2013)

adjustments along the way. The third phase, "scaling up," involved taking these tested models to a larger scale, again monitoring closely for issues cropping up related to scale, new communities and geographies being reached, and providing assistance to adjust implementation strategies. The fourth phase, "consolidation," involved taking lessons learned from these testing and scale-up phases and streamlining the model at the national scale, and the fifth and final, "institutionalization," phase involves ensuring that the model is sustainable both at the administrative and financial levels once EDB support has been phased out.

Critical to the success of this phased approach has been an eye to the final "institutionalization" phase from the very beginning. This involves building partnerships at the outset to create the ownership necessary to carry the reforms forward after the project ends and the engagement of the private sector to create financial sustainability for components of the project that are unable to be fully self-sustaining, such as the ICT component.

Challenges

One of the primary challenges faced by the program has stemmed from one of its strengths: ensuring that the input and interests of all involved parties are respected. This particularly came to the fore during the consultative curriculum reform process, where elements even within the Senegalese government had difficulty agreeing on inputs to the new curriculum. Agreement had to be brokered between the MoE, the national teachers' faculty, the directorate for educational reform, and the national education curriculum department – with inputs from external interests, such as businesses and civil society, as well.

In addition to coordination challenges, EDB encountered a challenge faced by most USAID-funded projects: the pecuniary environment engendered by "aid culture" in countries such as Senegal, which receive a large volume of international aid money. Projects such as these often encounter challenges such as individuals participating in training or other activities based on the level of per diem offered or organizations wanting to partner with the project for their own financial gain rather than to further the objectives of the program.

Future Priorities

With the cessation of USAID funding in September 2013, EDB faces the challenge inherent to any project fully funded by international donors with a fixed budget and timeline: how to make the activities and impact of the project sustainable over the long run.

As discussed in the section on "Impact," the government's adoption of the revised curriculum and several accompanying policies, such as the school government and dropout council decrees, means that these elements of the EDB project will have lasting effect on a national scale. The question now becomes how to sustain the various activities initiated by the project that will no longer be able to count on USAID funding to operate.

The partnerships built over the life of the project leave hope that many of these activities will be carried forward. The government has committed to continuing the teacher training work, adopting its approach into a national training scheme. The MoE and other state agencies in charge of ICT, including *l'Agence d'Information de*

l'Etat ("State Information Agency" or ADIE) and the Ministry of ICT, and some private sector companies have made commitments to maintaining the ICT program – at least in the short term. However, the sustainability of other activities such as the *daara* educational program and dropout skill-building programs, currently implemented by community-based organizations with few resources to carry on independently, will rely largely on the establishment of the Private Sector Education Foundation, which in theory will help fund these activities.

The National Skills Development Corporation (NSDC), India

In India, the approach is driven by the realities of the large population of youth that is in and out of mainstream secondary education, as well as the vast new job opportunities that are being created as the private sector increasingly becomes the driver of the economy. Realizing that millions of youth who strive to take advantage of these new employment opportunities lack the skills that are demanded by employers – and that the skills training opportunities available and offered by both government and the private sector's vocational and technical training initiatives do not fully fulfill or fit the needs of industry – the government of India established a National Skills Development Corporation (NSDC) in order to embark on major strategies to strengthen skills development.

The NSDC is a public-private partnership in which the private sector has taken an equity stake while public funding provides debt, equity, and grant financing. The mandate of NSDC is three pronged: to serve as an interlocutor between the industry and government and encourage more private sector skilling initiatives, to strengthen skills of 150 million youth by the year 2022, and to generally strengthen the country's overall skills ecosystem.

Cognizant of the existing mismatch between the skills demanded by industry and the skills training opportunities available, the NSDC has supported the development of new curricula for skills development to be used in all public and private sector vocational and technical training initiatives. It is important to note that several curricula have been developed in order to ensure relevance to the different subsectors of industry. The curricula were developed by, first of all, engaging in significant labor market research to better understand skills gaps throughout the country. The NSDC mapped skills gaps across 12 states (out of the 29 in India) and documented human resources and skill requirements in 21 focus industries including high-growth sectors such as telecommunications, retail, and construction. This ensured that the curriculum to be delivered by all training institutions would deliver skills that are in demand in the labor market.

However, instead of attempting to mainstream the National Skills Development Curricula into the existing secondary school curricula as a first step, the NSDC supported the founding of (often in partnership with industry associations) 21 Sector Skills Councils (SSCs) to take on a diverse set of responsibilities including:

(a) Conducting research on the labor market skills gaps and on the productivity of human resources in industry
(b) Improving the delivery mechanisms of the curriculum through developing training delivery platforms and modules and identifying technologies that can be used in teaching and training
(c) Developing quality assurance mechanisms to ensure quality of training curricula, quality of training institutions, quality of instruction, learning, and long-term employment success of graduates
(d) Carrying out certification and accreditation of sector-specific curricula and other relevant courses and modules

The NSDC approach is effectively taking care of the three types of students in mainstream secondary education. First, the NSCD incorporates important employability skills into the secondary education curriculum and assessment and works toward standardizing a skills development curriculum at the national level. Second, it supports the establishment of SSCs that oversee the work of a wide range of private sector vocational training institutes and initiatives financed by NSDC grants. The private sector vocational training institutes and initiatives recruit and train both students in mainstream education who complete secondary education and then move immediately into the labor market, as well as students who enroll in mainstream secondary education but drop out before completing the full course. In addition, the approach extends training to those already employed in order to upgrade their skills and obtain certification. Below is the detailed case study of the corporation.

Case Study 2: Catalyzing Skills Development in India – The National Skills Development Corporation (NSDC)[2]

Introduction

As India has opened up its economy and allowed the private sector to flourish, new job opportunities have been created, and the country has come to rely on its pool of qualified human talent to sustain this growth. Although this scenario holds immense promise for millions of Indians who strive to take advantage of new employment opportunities, there is an imbalance between the skills that youth have as they enter the workforce and those demanded by employers. In fact, India tops the global average for the difficulty that employers face in filling jobs (FICCI, 2012), and some estimates suggest that only 25 % of professionals are considered employable by the formal sector (Talwar, 2011). Strengthening skills development within India is a critical step to ensuring that the burgeoning youth population is prepared for meaningful employment.

The government has embraced this priority. The Eleventh Five-Year Plan by the Planning Commission – in recognizing that the skills training opportunities available did not fully fulfill or fit the needs of industry – laid the groundwork for the

[2] Summarized from Brown, E. J., Acedo, J. M. R., et al. October 2013. Pathways to Employability: Part II: Case Studies of Six Innovative Programs to Enhance Skills for Employabilty in Youth. *Results for Development Institute.* Accessible from: http://r4d.org/knowledge-center/innovative-secondary-education-skills-enhancement-isese-phase-ii-research

National Skills Development Mission to coordinate and scale up skills development efforts across the government (India, 2008). In line with this mission, the government created the National Skills Development Corporation (NSDC) in 2008 to facilitate effective training through vocational institutes and to support the skills development ecosystem in the country.

Based on interviews with select key experts and available literature, this case study provides an overview of the NSDC's approach to countrywide skills development, discusses its organizational tenets, and considers its framework for results. Since the need for better secondary skills development is global, this case study concludes with lessons that other countries can draw from the NSDC about taking such a program to scale. Although the organization was founded in 2008, it took about 2 years for it to gain effective leadership and begin acting on its mandate. The experience of the NSDC thus far is preliminary, and its full results and impact will only be known in the coming years.

Governance and Structure

Governance and Funding

The NSDC is a PPP that was created under the aegis of the Ministry of Finance. The government owns 51 % of the corporation, and private sector shareholders hold the remaining 49 % of the 10 crore rupees (about US$1.9 million) equity base (NSDC, 2012a). The government elected to keep the equity base small so that the barriers for industry participation would remain low. Private shareholders largely consist of India's most prominent industry associations (Business Standard, 2012). The corporation also maintains the National Skills Development Fund (NSDF), which has an initial corpus of 995.1 crore rupees (or approximately US$187.8 million), that is wholly owned by the government (India, 2011). This funding base is used to invest in the NSDC's partner organizations.

Goals

The NSDC's explicit goal is to meet 30 % of the government's target to skill/upskill 500 million people by 2020 by providing catalytic funding and supporting private sector initiatives. The organization's overall mission includes developing frameworks for industry standards, accreditation, and relevant curricula; investing in private sector skilling initiatives; focusing on underprivileged segments of society and skilling the informal sector; and supporting initiatives that will have a long-term impact in national skills development (India, 2011).

Staffing

The NSDC has a small number of in-house staff and relies on extensive support from outside consultants. The organization has about 28 internal staff and outsources due diligence and project monitoring to external consulting groups.

Activities

The NSDC's primary function is to financially support private sector skilling initiatives. It provides funding mostly in the form of loans and equity to training and vocational institutes and sector-based skill groups. On average, the loans and other financing provided by the corporation constitute 70 % of total project costs, although this figure is slightly higher for the organization's top four projects (KPMG, 2012). The NSDC funds industry, training, and skills development organizations; NGOs;

business associations; and social entrepreneurs based on the strength of their proposals.

Between April 2011 and March 2012, the NSDC approved 30 new projects, requiring about 693 crore rupees (about US$130.8 million) over the next 10 years (NSDC, 2012b). Although the NSDC has approved 71 projects, only 37 have started operations, and, of those, only 10–15 have fully begun their proposed activities, which reflect the organization's youth. The corporation seeks projects that are sustainable, large scale, and partnership based. Proposals are typically reviewed within 3 months of submission (Banerjee, 2011; NSDC, 2012a). Although NSDC-funded projects are designed to be self-financing in the long term, the corporation aims to fill short-term financing gaps by providing patient capital to skilling enterprises and offering low interest rates. The long timelines for earning returns on new skilling investments may deter traditional financiers.

In addition to traditional vocational training institutes, NSDC invests in a number of Sector Skills Councils (SSCs) to strengthen the labor market in select sectors and coordinate up-to-date labor market information. The next section discusses SSCs in greater detail.

Sector Skills Councils (SSCs)

Following in the footsteps of select high-income countries, the NSDC champions the establishment of SSCs in its 21 focus industries that can conduct research on the labor market, improve the quality of existing skill delivery platforms, and ensure the quality of skilling institutes. The NSDC's focus industries include automobile/auto-components, electronics hardware, textiles and garment, leather and leather goods, chemicals and pharmaceuticals, gems and jewelry, building and construction, food processing, handlooms and handicrafts, building hardware and home furnishings, IT or software, ITES-BPO, tourism, hospitality and travel, transportation/logistics/warehousing and packaging, organized retail, real estate, media/entertainment (including broadcasting, content creation, and animation), healthcare, banking/insurance and finance, education/skills development, and the informal sector.

One of the most important activities of an SSC is to contribute labor market data and forecasts to the NSDC's labor market information system, which aims to provide a comprehensive picture of the skills gap in the economy. The NSDC intends for SSCs to aggregate all of the needed and relevant demand data about a particular industry.

The NSDC provides grant-based seed funding to SSCs to assist with start-up costs, but intends for SSCs to be financially self-sustaining over time. The NSDC acknowledges that SSCs have an important role to play in ensuring the quality of training institutes rather than simply meeting targets. Accordingly, the corporation expects SSCs to reach a point of financial viability within 5–7 years – unlike its partner training institutes which are expected to be self-financing within 2–5 years. The small number of SSCs interviewed did not raise the goal of becoming self-financing as a challenge, but did note that for some industries – especially fragmented ones – SSCs would require a longer time horizon for financial viability. An additional consideration is the balance that SSCs should take between performing no- or low-profit activities such as reviewing the quality of training curricula and

conducting the services that industry is willing to pay for. Sustained government support may lead to a greater emphasis on activities related to quality and monitoring.

Engagement with Other Stakeholders

In addition to its core funding work, the NSDC works closely with other stakeholders and engages in targeted advocacy to strengthen the skills ecosystem and elevate the skills policy agenda. The corporation also works closely with other ministries and state governments to support regional and sector-specific labor market studies, design targeted skills programs, and create training initiatives in order to staff large government ventures.

Measuring Results and Impact to Date

The NSDC measures success against its core mandate of contributing to the skilling/upskilling of 150 million people. The NSDC's goal is to train half a million students a year, but thus far has managed to achieve about 16 % of this target or about 75,000 students a year (KPMG, 2012).

Similarly, partner organizations must set explicit targets for their work. Although they are permitted to fluctuate on these targets in the short run based on implementing realities on the ground, in the long run, they are expected to meet these goals. If a project is struggling but makes a good faith effort to improve or is faced with unavoidable difficulties in the labor market, then the NSDC will work with the partner to overcome these challenges and reach scale. However, if the project has no plan in place to improve performance, then the NSDC reserves the right to withhold future tranches of funding.

The NSDC requires that the employment rate of students graduating from its affiliated centers is at least 70 %. In the year 2011–2012, NSDC's affiliated centers have trained over 180,000 students, 79 % of which had found employment upon graduation (NSDC, 2012a). Telecommunications and education skills development were two major areas of focus for these students (NSDC, 2012a). Long-term retention among employers has not been measured.

Factors for Success

Although the NSDC is still a relatively new organization, the underlying factors for its success so far offer initial lessons for other countries considering a large-scale public-private skilling initiative. The factors needed for planning an initiative of such scale are particularly important in India, where the need for skills enhancement is vast and previous initiatives were fragmented.

Strong Leadership and Clear Mission

To effectively mobilize and deploy funding across dozens of sectors and partners, the NSDC relies on strong leadership and a clear mission. Although there may be drawbacks to its target-driven approach, it gives staff and partner organizations a clear vision to follow.

Collaboration

Investing in skills development at the country level requires a high degree of collaboration with industry partners in every sector. The role of industry associations in founding the NSDC and establishing SSCs has helped ensure the relevance of the

organization's programming. The private sector's equity stake in the NSDC was a good first step in securing industry participation.

Flexible Funding

The NSDC's ability to make loan, grant, and equity investments allows it to pursue a wide range of partnerships and to find the right mix of financing for a particular skilling initiative. For example, training institutes for capital-intensive industries may require longer and more flexible repayment terms than service-focused institutes.

Attention to the Ecosystem

The NSDC's support of broader labor market issues will be valuable for the country in the future. Encouraging SSCs to continuously collect data on the labor market, for instance, can help ensure that skilling programs are responsive to market changes.

Challenges

Although stakeholders view the NSDC as a promising, if nascent, mechanism to stimulate skills development across the country, a few challenges have been identified, some of which may be resolved as the organization continues to grow and develops new systems.

Reaching Scale

To fulfill its mission of contributing to the skilling and upskilling of 150 million people, the NSDC must support hundreds of private sector initiatives. Although it has already approved about 70, many more projects must be initiated. Yet members of NSDC management note that the process of identifying partners and helping them develop sustainable business plans and write proposals has been difficult and time-consuming. While the organization receives many applications, many are not suitable for support. Some applications include requests for land or building acquisition, which are outside of the NSDC's mandate.

Balancing Quality with Scale

Building the NSDC's mandate around a clear skilling target has certainly helped focus the organization's mission and activities, but it does not capture quality considerations. To reach its 150 million skilling target, the NSDC will have to continue aggressively investing in new projects, but this growth in volume could detract attention from quality. Careful evaluation of training institutes' curricula, quality of instruction, and long-term employment success are important if India is to close its employability gap. Given that the organization currently operates as a venture capital-like investor driven by returns in the number of people skilled, its staff has limited capacity to aggressively track quality in partner organizations and faces few incentives to withdraw support from poorly performing partners.

Funding Fungibility

The NSDC has clear priorities for how partners can leverage NSDC financing and requires partners to set explicit targets. Investments intend to grow or strengthen existing skilling programs, and the NSDC's financing is not to be used for asset-heavy investments such as land or building acquisition. However, other government initiatives also support skilling initiatives, and in cases where one program receives funding from multiple sources, there is no procedure in place to track whether the

NSDC's investment has been used for unintended activities and whether the same targets are reported as unique results to multiple funders. This information is important as NSDC begins to establish its cost effectiveness for reaching skilling targets.

Autonomy

Although the private and public sectors jointly govern the NSDC, the government has set its objectives and supplied its core funding. This commits the organization to respond to the government's priorities and maintain a set course. Similarly, although the NSDC freely selects its own skilling and sector partners, it cannot receive financial or technical support from international partners without approval from the central government. As a consequence, some international partners must directly engage SSCs or partner institutes rather than the NSDC itself. While this does not limit its core functions, international support could help the organization widen its reach and strengthen existing programs.

Challenges for SSCs

Apart from the NSDC, SSCs face a number of challenges in meeting their core objectives:

- *Industry buy-in:* SSCs face difficulties in getting industry to fully buy into the norms and occupational standards that they are setting. For example, SSCs explained that establishing quality standards and accrediting programs are the first steps in a long consultative process. To establish their credibility, firms must hire according to these guidelines and show a preference for accredited institutions when hiring. Otherwise low-cost low-quality programs that have not been accredited will continue to flourish.
- *Quality* vs. *results:* SSCs may also face a tension in pursuing activities that ensure quality versus meeting discreet targets. The expectation of self-financing may discourage SSCs from spending too much time reviewing the quality of training curricula and monitoring. No SSC has reached a point of financial sustainability yet, although most have been in operation only for a very short time.

There is an opportunity to establish strong peer learning mechanisms among SSCs. Interaction with established SSCs may help start-up SSCs put critical systems in place more quickly. Similarly, learning about the experience of SSCs in other countries may help management better adapt to an evolving labor market.

Future Priorities

The NSDC faces an ambitious mandate of contributing to the skilling/upskilling of 150 million people and strengthening India's skills ecosystem. As the NSDC moves forward in attempting to fulfill this enormous expectation, it will have to pay close attention to quality and scale and aggressively begin new partnerships. At its current pace, the NSDC is unlikely to reach its target by 2020 unless lessons from engagements with existing partners allow the organization to make new large-scale investments more quickly and existing partners ramp up activities. This may be possible as the organization grows. In addition, the NSDC must prioritize the quality of the programs delivered by its partner institutes and SSCs to ensure that its investments make a meaningful difference in long-term employment trends.

Conclusion

Both India and Senegal face substantial challenges in sustaining the momentum in the future. The NSDC seems to be better positioned to sustain financial support for the project, having evolved a fairly solid financial proposition of a public-private partnership in which the private sector has taken an equity stake, while public funding provides debt, equity, and grant financing. Nevertheless, it might be a challenge to always ensure that the Ministry of Finance and the private sector shareholders are up to date with their 51 and 49 % equity base, respectively. Senegal is, however, in a more precarious position having funded the EDB reform through a USAID grant, which has ended. Given the comprehensive nature of the reform involving multiple stakeholders at national and local levels, it is important to have the financial resources not simply for replenishing materials such as ICT equipment, teachers' guides, and student workbooks but also to ensure that the stakeholders remain focused and carry out their work such as the overseeing of accountability by the community. Therefore, EDB needs to explore new funding avenues in order to continue the work.

The NSDC is not yet reaching its target numbers per year. Its goal is to train half a million students every year, but thus far has managed to achieve about 16 % of this target or about 75,000 students a year. Additionally, the NSDC will have to develop special capabilities in order to oversee an increasing number of SSCs that, in turn, will oversee the large number of industry and private sector vocational training institutes and initiatives that are expected to emerge. Similarly, EDB has a challenge working with multiple stakeholders to consolidate work in the 500 schools covered so far, as well as addressing all the vulnerable children in the *daaras* that have not yet been reached.

The two case studies – Senegal's EDB program and the NSDC of India – aim to reduce the gap between the skills training opportunities available and the skills demanded by industry. While the former's objective is to revitalize secondary schools on a national scale, the latter supports a wide range of private sector vocational training institutes and initiatives that cater to multiple industries. Both, however, are reliant on collaboration with stakeholders – industry, in particular. In order to successfully implement a nationwide skills development initiative, the NSDC is required to have a high degree of cooperation with industry partners in every vital sector. On the other hand, to ensure EDB's program featured content relevant to today's knowledge and employment demands, a multitude of stakeholders were heavily involved and consulted, and EDB attempted to take all their perspectives into consideration.

Today's global economy demands that we vigorously engage with one another to come up with combined solutions to problems that are affecting us all. If secondary education becomes obsolete and irrelevant, this directly affects individuals who are then unable to secure jobs, which hurts employers and, in turn, the economy. The involvement of multiple stakeholders has proven to be substantially beneficial in both abovementioned cases: The NSDC has, thus far, trained 75,000 students a year, while EDB's program has reached over 200,000 students, 9000 teachers, and 2500 school administrators.

Although the NSDC is in a better financial position to sustain itself than EDB, it will remain a challenge for them to push the SSCs toward financial autonomy. The organization also needs to establish itself as a worthwhile affiliation for industry partners to buy into and adhere to the norms and quality standards they are setting. EDB's program, on the other hand, while requiring a substantial amount of funding to continue the work, also must ensure that the curriculum is aligned with all the stakeholders' interests and demands in terms of skills development. As programs that are undergoing systemic curricular changes of sorts, both have been successful in their efforts to train the youth in twenty-first-century skills that are essential for employment in this day and age.

References

Banerjee, B. (2011, February 3–4). *Approaches to skill formation, enhancement, refinement.* Presentation at advancing strategies to deliver welfare and livelihood development services to India's informal sector workers.

Business Standard. (2012). *RAI becomes ninth private sector shareholder of NSDC.* http://www.business-standard.com/article/companies/rai-becomes-ninth-private-sector-shareholder-of-nsdc-111102800060_1.html. Accessed 14 Dec 2012.

DeStefano, J., et al. (2009). *The quality of basic education in Senegal: A review*. Prepared for USAID/Senegal report on education quality in Senegal.

FICCI. (2012). *Knowledge paper on skill development in India learner first.* Available from http://www.ey.com/Publication/vwLUAssets/FICCI_skill_report_2012_finalversion/$FILE/FICCI_skill_report_2012_finalversion_low_resolution.pdf. Accessed 15 June 2016.

KPMG. (2012). *A skilled India @75 – NSDC's role, challenges, and opportunities.* http://www.kpmg.com/in/en/issuesandinsights/articlespublications/investing-in-india/pages/education.aspx. Accessed 15 June 2016.

Nicoleau, G. (2013, March). *Accessing quality middle school education through curricular reform: The case of USAID/basic education project – Senegal*. Presented at the 57th annual conference of the Comparative and International Education Society, New Orleans.

NSDC. (2012a). *Central profile.* http://www.nsdcindia.org/sites/default/files/files/mediakit/nsdc-profile.docx. Accessed 15 June 2016.

NSDC. (2012b). *Annual update 2012.* http://www.nsdcindia.org/sites/default/files/files/NSDC%20Annual%20Update%202011-12.pdf. Accessed 15 June 2016.

Planning Commission: Government of India. (2008). *Eleventh Five Year Plan (2007–2012).* http://planningcommission.nic.in/plans/planrel/fiveyr/11th/11_v1/11th_vol1.pdf. Accessed on 15 June 2016.

Planning Commission: Government of India. (2011). *Mid-term appraisal of the Eleventh Five Year Plan (2007–2012).* http://planningcommission.gov.in/plans/mta/11th_mta/chapterwise/Comp_mta11th.pdf. Accessed 15 June 2016.

R4D. (2013). *Innovative secondary education for skills enhancement, Phase I synthesis reports*. Washington, DC: Results for Development Institute.

Talwar, S. (2011). *India today: A skilled India.* http://indiatoday.intoday.in/story/a-skilled-india/1/146363.html. Accessed 15 June 2016.

Chapter 5
Reimagining Pedagogy

Guitele Nicoleau and Risa Sackman

Introduction

This chapter will discuss two initiatives that are focused on improving youth outcomes by bettering the quality of teaching and learning in government-run secondary schools. The featured case studies, the Mindset Teach program in South Africa and the Skishana Foundation in India, highlight the importance of supporting the development of high-quality instruction, learning standards, content, and professional development and the role these key educational components play in nurturing the academic and the non-cognitive mindsets, habits, and skills youth need to be well-prepared citizens in both a local and global context. They also emphasize the positive impact partnerships (both government and NGOs) and a cross-sectoral approach have on systemic improvements to education.

In order for secondary schools to effectively support students and promote their ongoing academic and life success, educators must facilitate learning and healthy development while safely guiding students through the opportunities and challenges of adolescence. While the adolescent experience varies around the world, it is helpful to consider common pedagogical approaches to supporting youth within this age range (10–18 or 19 years of age) who are making the transition between childhood and adulthood (American Psychological Association, 2002; Brown & Larson, 2002) and preparing for adult roles and responsibilities with adulthood defined differently in different cultures. As the world's youth data fact sheet highlights, "Ensuring that

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adolescents start and complete secondary education is crucial to their acquiring the knowledge and skills needed for healthy, productive lives" (Population Reference Bureau, 2013, page 5). Participation and completion in secondary school helps to raise an individual's standard of living, and secondary schools are well positioned to help adolescents develop the essential skills and behaviors necessary for lifelong success. Successful secondary schools make sure all young people have access to a positive relationship with at least one caring adult, a safe and inclusive environment, opportunities for mastery, the chance to see oneself as an active participant in the future and experience self-determination, and an environment that values and practices service for others (Lerner, 2005). When young people live in communities with high levels of poverty or violence, or when they experience daily struggles to get their basic needs met, the school has an even more important role in providing the necessary resources and structures for healthy development (Benson, 2003).

Quality secondary education considers the developmental needs and characteristics of adolescents and incorporates the assets, or building blocks, that all youth need to be healthy, caring, principled, and productive. By preparing youth in all five of the developmental areas – physical, cognitive, social, emotional, and moral (APA, 2002) – schools ensure that youth develop the assets (Scales & Leffert, 2004) and characteristics (Lerner, 2006) necessary to thrive. In addition, attention to the five developmental areas helps educators design school structures and instruction that best support the health, well-being, and success of adolescents.

How Pedagogy Can Support the Developmental Needs of Adolescents

Physical Developmental Characteristics

Adolescence is a time of rapid physical growth and sexual maturation, though individuals mature at varying rates (Atkinson & Sturges, 2003). This can cause youth to feel awkward and uncoordinated in their own body as they get used to the changes. The school day should take the physical development of adolescence into account. Students should have access to water and nutritious food during the school day, and the schedule should allow opportunities for physical activity, as well as periods of rest (Atkinson & Sturges, 2003). Teachers should vary instructional methods to allow for physical activity and movement within a class period (Atkinson & Sturges, 2003). Hands-on (e.g., experiential and project based) and active learning experiences (e.g., groups, role play, turn and talk) take this into consideration and are especially conducive to the needs of young adolescents. A range of tactile and physical activities can help students channel energy, release stress, and develop greater focus.

Cognitive Developmental Characteristics

The adolescent brain is undergoing significant change and maturation, the result of which is an increase in young people's ability to understand, think, reason, and make sense of the world. Since cognitive maturation is characterized by the transition from concrete to abstract thinking, curriculum and instruction should incorporate the deliberate teaching of critical thinking and metacognition to help students develop complex thinking skills, and constructivist and active learning approaches that give students hands-on experience and make learning relevant and engaging (Jackson et al., 2000; McNeely & Blanchard, 2009; NMSA, 2010; Spano, 2014). The curriculum should be rigorous, and the bar should remain high for all students. Learning should be relevant to their present and future lives (Nsamenang, 2002), keeping in mind their cultural and regional contexts. Additionally, because learning is intrinsically tied to emotions, activities that engage emotions (such as simulations and role playing) help establish a meaningful context for learning, which helps prepare students to recall and apply the information at a later time.

Emotional Developmental Characteristics

The preparation for adult roles is a type of identity formation for youth across the globe, since, in its general sense, identity formation refers to both how a young person sees himself or herself right now, and the future, or possible self he/she would like to become (Markus & Nurius, 1986). Schools can provide opportunities for youth to explore their personal and cultural identity through curriculum choices, organizational structures, and instructional approaches (Caskey & Anfara, 2007). Curriculum may include fiction/non-fiction stories and films featuring identity development, reflective journal writing, personal memoirs, and community interviews. Advisory programs, community service, and student government can be built into school-based organizational structures, and instructional strategies such as asking open-ended, non-threatening questions can help students to feel safe thinking through ideas and options. Building emotional intelligence is an effective way for young people to develop the habits and skills to negotiate interactions, build relationships, and manage stress. The Collaborative for Academic, Social, and Emotional Learning (CASEL) has identified five social and emotional learning (SEL) competencies that are critical to young people's healthy development: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (CASEL, 2014; Haggerty, Elgin, & Woolley, 2011). The outcome of SEL education is that adolescents are able to recognize and manage their emotions, develop empathy and respect, learn to resolve conflict constructively, and develop a cooperative spirit, all of which help them to become compassionate and productive adults.

Social Developmental Characteristics

Social learning is an effective instructional strategy for adolescents. Western psychologists assert that the adolescent's "primary lens is that of social interaction: finding one's place in the social context" (Atkinson & Sturges, 2003, page 11). Similarly, the African worldview conceives the adolescent, "or socialized neophyte as growing out of childhood and poised for an adulthood that lies in the future…. [where] adolescence is a way station between the stages of social apprenticeship in childhood and the full social integration into adult life" (Nsamenang, 2002, page 69). Even in India, where peer interactions vary by social class, locale, and gender, social interaction is an important part of the school experience (Verma & Saraswathi, 2002). Knowing adolescents learn best through peer interaction, educators can maximize social interaction through discussion, collaboration, and feedback. Instruction can include a combination of group, partner, and independent work. Sometimes groups can be based on interest, other times ability, and other times social engagement. Direct instruction on social and emotional skills helps students develop self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. As students develop these competencies, they are given multiple opportunities to practice them throughout the school day. Opportunities for students to practice leadership, governance, and conflict resolution are also important for social development (CASEL, 2014; Haggerty, Elgin, & Woolley, 2011; Payton, Weissberg et al., 2008).

Moral Developmental Characteristics

A young person's emerging values and ethical behaviors are often referred to as moral development (American Psychological Association, 2002). The capacity for morality is a result of students' increasing cognitive abilities, including their ability for abstract thought, as well as their developing social and emotional capacities. Moral development marks the transition away from a sole focus on one's own needs and interests, toward a consideration of the feelings and rights of others, and the use of their own moral framework to guide them. Through real-world problem solving activities and simulations, youth can reflect on and further define their own values, motives, and their sense of right and wrong. The school should also establish systems and processes that promote and apply communal rules and a sense of fairness and provide a structure for students to have their voices heard (e.g., peer mediation, class meetings, and student councils). Learning experiences can encourage students to debate points rather than accept ideas as fact (e.g., debate, discussion, and giving voice to diverse perspectives). Rich class discussion can help youth establish an ethical framework, and adults can help students recognize inconsistencies in their moral behaviors (e.g., they are motivated to help with global issues, but can be mean to friends and peers). Activities that allow students to ponder ethical dilemmas and

consider possible responses help students to refine their critical thinking skills and ethics.

Lessons Learned: Effective Pedagogy and Practice for Secondary Schools

According to the World's Youth 2013 Data Sheet, more youth around the world are enrolling in secondary education than ever before. However, while many countries have made significant progress in primary education, ensuring that adolescents start and complete secondary education, which is crucial to their acquiring the knowledge and skills needed for healthy, productive lives, remains a bigger challenge (World's Youth 2013 Data Sheet, 2003). In addition, even when more students are entering secondary education, schools are often "poorly fitted to the culture of their students, and in many cases the curriculum fails to provide them with the skills that will be most useful to successful adult work" (Brown & Larson, 2002, page 9).

In this way, secondary schools in developing countries have a unique challenge to simultaneously prepare students for the global economy and the realities of their local community. This means that education systems must incorporate global, twenty-first century skills, while still honoring the indigenous systems and needs. In writing about adolescence in sub-Saharan Africa, A. Bame Nsamenang references the work of Robert Serpell as he describes: "As it stands today, the school is not yet fully suited to the agrarian life paths of the bulk of the continent's peoples, as its quality has been declining and its relevance to the life journeys of Africans" (Nsamenang, 2002, page 85–86; Serpell, 1993). The indigenous system is built around peer-to-peer interactions and experiential/participatory learning and emphasizing the importance of socializing responsible participation in the family and community – objectives that are not traditionally included in formal education structures and systems (Brown & Larson, 2002). A good example of this can be found in FHI 360's Active Schools methodology, a comprehensive pedagogical approach that uses personalized instruction and the development of strong bonds between school and community to ensure that children learn the skills they need for life both inside and outside school (with successful implementations at the elementary level in Guatemala, Peru, and Nicaragua, and recent adaptations of the principles and strategies of the model to be used in lower secondary schools in Equatorial Guinea, and El Salvador). One of the keys to the success of active schools is that it is adapted to the specifics of each context and situation (Mogollon & Solano, 2011), but consistently built upon progressive teaching pedagogy that promotes a learning mindset in which educators treat children as competent contributors, with interests and natural curiosity, unique skills, the potential to learn, and the confidence to make important decisions on their own. This approach develops a whole child,self-directed, confident, and capable of interacting with the world, and it promotes a process of collegial, or peer learning among teacher, who work collaboratively in teacher circles to co-develop student learning guides.

In its best case, as this example illustrates, school improvement and reform can integrate the best of international education research with indigenous strategies that promote and maintain historical and cultural distinctiveness. These changes often mean a shift away from the traditional didactic, teacher-centered teaching approach toward a more student-centered, constructivist approach, where students are actively involved in making meaning through direct experience, by working collaboratively and by solving real world problems. In this new paradigm, students must constantly reflect on how what they are learning fits into their existing understanding. In other words, they are learning how to learn, an important skill in a rapidly changing twenty-first century landscape.

When secondary educators design instruction and school supports around the needs and characteristics of adolescent learners and use active learning and constructivist methodologies, they are better able to engage students in learning; promote strength-based practices that build students' assets; nurture students' self-understanding, self-worth, hope, and resiliency; and ensure that students have the knowledge and skills to succeed in the local and global economies. "The learning of right answers is not enough…beyond answers alone, we must help children ask the right questions, and discover their answers through creative thinking, reasoning, judging, and understanding" (NMSA, 2010, page 4). Effective secondary schools should be developmentally responsive, challenging, empowering, and equitable (NMSA, 2010). They should also be "organized to focus on student learning rather than on managing students" (Martinez, 2005).

Four categories emerge from the literature as essential principles and practices for secondary schools (Jackson et al., 2000; Martinez, 2005; National High School Alliance, 2005; NMSA, 2010), and the strategies within each category are broad enough to adapt and reinterpret for the local, cultural context of schools. Effective secondary schools have the following practices in place:

Rigorous Curriculum, Instruction, and Assessment

- A focus on academic rigor that integrates curriculum, instruction, and assessments
- Effective instruction that promotes active learning and is personalized for the needs of individual students
- Multiple assessments that are aligned with state standards and include performance-based measures to provide schools with individual student's data to improve teaching
- Targeted interventions and supports to raise the skills of low-performing students
- School-wide initiatives to improve reading and writing literacy

Example from the field: In the Bronx, NY, in New York City, USA, a middle level school has instituted common benchmark assessments at key points throughout the

year that helps teachers to determine the degree to which students are demonstrating competency based on a set of predetermined standards and objectives (Sackman, 2011). This includes a set of pre-assessments prior to the start of each year to determine the interventions, supports, and acceleration students may need to support their engagement and success. Then, because the focus on instruction has shifted to outcome based, the teachers and support staff create systems and structures for intervening and reteaching when a student continues to struggle with mastery of a key learning outcome. In this model, academic success is everyone's responsibility. Data is used to identify students' support needs, and all staff shares the distributed responsibility of individualized and/or small group, targeted learning.

Distributive Leadership and Teacher Quality

- Distributive, empowered leadership
- Highly prepared teachers with subject-area competency, knowledge of effective pedagogy, and a repertoire of engaging and effective instructional strategies
- A professional, collaborative educator community that focuses on improving teaching and learning for every student

Example from the field: Mindset Teach, an initiative based in South Africa (described in more depth in one of the two case studies in this chapter), supports teacher quality through locally produced authentic teacher development videos that showcase classroom and teaching practices. Growing out of the belief that teacher development should be done *with* the teachers rather than *to* the teachers, the videos aim to change habits and practice, not just share information. Teachers are also supported through professional learning communities (PLCs), workshops, and peer-to-peer networks, where they plan together, interact with one another about effective pedagogy and instruction, and work together to critically reflect on the videos. This type of professional practice empowers teachers to get into the habit of discussing and debating with one another on effective teaching practices, which serves to profoundly improve individual as well as collective practice.

A Learning Community/Positive Learning Environment

- A common group of teachers teach a cohort of students.
- Opportunities for positive relationships between staff and students and among students.
- A safe and healthy school environment.
- High expectations for students.
- Family and community engagement.

Example from the field: The Sikshana Foundation (described in more depth in one of the two case studies in this chapter) is working to improve the public school system in India using a holistic approach to education that involves all key stakeholders (students, teachers, parents, the community, and the school) and stresses the importance of cooperation. Decisions that are made about the types of supports and interventions that are needed at a school are based on their potential impact on the learning levels and healthy development of the students. Sikshana reviews data and identifies the academic and non-cognitive gaps, which help them to better understand the educational situation and identify how the foundation can best support the schools. Students are constantly motivated, challenged, and pushed to do better. In addition to successful reading and writing programs that provide students with academic supports, Sikshana introduces a range of activities to encourage learning (e.g., sports tournaments, quiz competitions, and regular prizes distributed to well-performing children).

Continuous Improvement

- The strategic use of data to inform curriculum and instruction
- The strategic use of data to select appropriate interventions and supports
- Evaluating assessment data as a means to inform program effectiveness

Example from the field: The USAID Education for Children and Youth project in El Salvador (FHI 360, 2015) is committed to embedding the principles of positive youth developmental into the structure and environment of secondary schools. As a part of this effort, a pilot group of schools are implementing FHI 360's Schools 360 model that reimagines schools as an integrated human development solution and provides a systemic framework for implementing positive youth development to reduce dropouts, facilitate student engagement, and create a safe and proactive learning environment. As part of this process, pilot schools conduct a needs assessment to collect data around student success indicators in order to analyze where youth currently have strengths, where they have unmet needs, and what systems, structures, and supports are proving to be most effective. School teams use this data to create a plan for increasing students' access to specific assets. They will evaluate progress by conducting follow-up assessments and comparing the results.

A Focus on Teacher Quality and Professional Development

Even when they are culturally relevant, schools in many parts of the world are challenged to recruit quality staff and develop programming suited to the changing nature of adult work (Shanahan, Mortimer & Kruger, 2002). Of all the school supports, an effective teacher has the most significant impact on student academic

success (Hanushek, 2011). Research indicates that teacher effectiveness is correlated with a thorough knowledge of subject matter, an understanding of pedagogy and a wide range of instructional strategies, and experience teaching in a classroom. In addition, a report on teacher effectiveness in industrialized nations stresses that well-prepared teachers are more likely to remain in teaching and produce higher student achievement (NCATE, 2006). Thus, properly preparing teachers, and providing them with effective, ongoing professional development, is essential for secondary school improvement. Two highly effective professional development practices that are shown to lead to quality programs and student academic success include job-embedded professional development and the implementation of professional learning communities.

The most effective professional-development initiatives are job embedded (Darling-Hammond et al., 2009; Yoon et al., 2007). The authors of the report, *Professional Learning in the Learning Profession: A Status Report on Teacher Development in the United States and Abroad* write, "Research on effective models of professional development (PD) suggests that intensive and sustained efforts over a period of time are more likely to be effective in improving instruction than intermittent workshops with no follow-up mechanisms — a design that is typically not powerful enough to produce the impact desired" (Darling-Hammond et al., 2009, page 58). She explains that a few themes emerge in the research and literature that help to define the most effective content and contexts for professional development. These include the following best practices: PD that focuses on concrete act of teaching and learning strategies; a commitment to the integration of curriculum, instruction, assessment, standards, and professional learning; sustained learning where teachers participate in PD for 30–100 h over the course of a school year; collaborative learning, where teachers work together to make meaning; and active learning and constructivist approaches, where teachers instantly put what they have learned into practice and receive constructive feedback for continual improvement.

One of the most effective ways to support job-embedded professional development is through professional learning communities (PLCs). In *Results Now* Mike Schmoker writes, "Professional learning communities have emerged as arguably the best, most agreed upon means by which to continuously improve instruction and student performance" (Schmoker, 2006). PLCs are most effective when they are small grade level or subject area teams that meet regularly and use an empirical process that includes common planning (content, instruction, and assessment), followed by a collaborative analysis of student work in order to continually improve instruction. The PLC provides opportunities for teachers to learn from one another, and learning is often supported and extended through interclass visitations, collaborative viewing of video lessons, and teacher mentoring/coaching. These practices serve to create a common vision and language around effective teaching and shared implementation strategies that ensure a unified, high quality approach to teaching and learning across a grade level or school.

Case Studies: Reimagining Pedagogy in Two Secondary Schools

The two case studies in this chapter provide important snapshots into successful secondary school improvement initiatives that focus on teacher quality and professional development as key catalysts for positive change. The first example, Mindset Teach, which comes out of South Africa, addresses the country's general realization that secondary schools were not fulfilling their primary objectives to deliver rigorous learning outcomes and prepare students for employment. The second example, The Sikshana Foundation from India, introduces the challenges that resulted from the 2010 Right to Education Act (RTE), including the increasing disparity between the quality of government and private sector schools. These case studies highlight the kind of localized, culturally specific, sustained job-embedded professional development that the research has shown to be best practices. And the data shared in the case studies indicate that these programmatic inputs have led to significant increases in teacher quality and student achievement.

Mindset Teach

The Mindset Teach program in South Africa, launched in 2002, provides teacher development support through the production and sourcing of video content that portrays good teaching practice. This support service was provided in response to the fact that, because of the challenging educational conditions in post-apartheid South Africa, and because teachers are poorly treated, there is a shortage of teachers. And those teachers who are in the classroom often lack key content knowledge and pedagogical skills. It was clear that in order to improve education in South Africa, and re-professionalize the teaching practice, a systemic approach to teacher education was paramount. And, as mentioned in this study, the Mindset Network, the organization behind Mindset Teach, believes that "the quality of an education system cannot exceed the quality of its teachers, and therefore improving instruction and motivating teachers is what they feel will have the most impact on education" (Mindset, 2015). Based on the type of research mentioned in the previous section, the Mindset Teach videos are short, target-specific instructional strategies and make it easy for teachers to instantly try out the featured strategies in their own classroom instruction. This video learning is supplemented through participation in professional learning communities and peer networks, both of which are cited by the literature as highly effective professional practices. And, because the videos are developed by regional agencies, there is a built-in system for ensuring that instruction will be culturally relevant and can be customized to the needs and characteristics of the local community. Given the research-based foundation of this program, it is not surprising that these supports for teachers have been shown to have a significant positive impact on student learning achievement. Below is the detailed case study of Mindset Teach.

Case Study 1: Mindset Teach (South Africa)

Nitika Jain

Introduction

The human development index (HDI), put forward by Mahbub Ul Haq and Amartya Sen in 1990, regards health and education as the two key measures of human development. In the Human Development Report of 2013, South Africa ranked 121st out of 187 countries (UNDP, 2013); over the last 10 years, it has ranked predominantly in the medium human development sector of the index and continues to have one of the highest youth unemployment rates in the world (almost 50 %). One can accurately say that there has been a general failure on the part of the South African government to address the critical issues of poverty, education, and job creation.

South Africa has realized that its education system is not delivering the much-needed employment skills, and the overall outcomes of learning are very poor. One of the key ways in which to improve outcomes is to first improve instruction, and this is where the not-for-profit organization, Mindset, comes into play.

Launched in 2002, the Mindset Network[1] focuses on the two key measures of human development, creating, sourcing, and delivering high-quality educational content to be used in the formal education and health sectors (Mindset, 2015). The organization's three principle programs – Mindset Learn, Mindset Teach, and Mindset Health – produce and source video content that is distributed via broadcast television, the Internet, and DVDs and is supported by print and multimedia materials. Mindset Teach, in particular, provides teacher development support that is economical, holistic, and easily accessible. This case study reviews the Mindset Teach program, its costs, impact to date, success factors, and challenges. How the program can be implemented on a larger scale will also be briefly looked at.

Program Overview

The educational situation in South Africa post-apartheid has been critical. Teachers are not only discouraged and disheartened, but lack necessary knowledge of the content and relevant pedagogical skills. Many schools are poorly maintained and teachers poorly treated, causing a shortage in those attracted to the profession. Most of the current teachers have received their training and education under apartheid, and the schooling program is still reflective of the apartheid legacy. There also remains the issue of available educational resources being disproportionately accessible to the more affluent learners of society, thereby perpetuating the inequality in society.

Nelson Mandela once asserted that education was the most powerful weapon one could use to change the world. Based on this very idea, the founders of Mindset recognized that if they were to cultivate human development, it was essential to focus on the education, as well as the health, sector. Rather than working in parallel

[1] The information on this case study draws heavily upon conversations and email correspondence with Dylan Busa (former Schooling Executive at Mindset Network) between April and August 2015.

to the government, the organization actively assists the government in enhancing the quality of education in South Africa.

Mindset Teach seeks to simply augment the quality of instruction, empower teachers, and reestablish their status as valued members of society. The videos produced by the network are not content based or curriculum driven, but rather simply portray good teaching practice. Authentic teacher development videos, showcasing classroom and teaching practices, are distributed with PDF lesson plans via broadcast (on Mindset Learn, TopLearn, and Mindset free-to-air), video on demand, DVDs, and youtube.com. These videos cover primary and secondary level mathematics, literacy, school management, physical sciences, and general lesson ideas, each no longer than 15 min. With the belief that teacher development needs to be activated not delivered (done *with* the teachers rather than *to* the teachers), the videos aim to change habits as opposed to solely impart knowledge, and encourage reflective learning and mentoring. Other than digitally, teachers are also supported through professional learning communities (PLCs), workshops, and peer-to-peer networks, where they can interact and learn from one another. Teachers are invited to these forums to critically reflect on the videos and, therefore, get into the habit of discussing and debating with one another on effective teaching practices.

Mindset works with a number of partners including governmental bodies, such as the teachers' unions, the National Department of Education, and other such national organizations. The South African government not only recognizes their work, but also sees them as being at the forefront of creating online resources for teacher development. Mindset aids in defining and implementing certain governmental policies, while also undertaking official projects of design and implementation, delivering material to national departments for them to deploy. This ensures the development of a strong relationship with the government, and their consequently enhanced credibility further allows them to expand their network of connections.

In essence, Mindset Teach supports the system from a distance. With such an approach, scale is inherent. Previously, the network has created videos with teams in other countries, such as Kenya and Papua New Guinea, as well as provided them with training on how to make their own educational media. Hence, due to their videos not being specific to any curricula, they can be generalized; other than having to take cultural sensitivity into account, the teaching practices and methodologies they share are the same everywhere in the world. The organization is not interested in micromanaging the process of teaching in the classroom, but rather digging out principles that are universally applicable. And, therefore, there is much scope to expand this program to other countries, especially within the continent of Africa. However, due to the limited ability to receive or consume digital media in many of the other countries in the region, expanding the program may be an elongated process.

On occasion, the network also works with schools and educational institutions; however, as they are not a strong contact organization, but rather one that supports the system by working at the system level, they mostly choose not to partner with schools. On the other hand, they are very much open to the prospect of having their

videos included as part of a certified training course, once these courses expand and gain credibility in South Africa.

Costs

The cost for producing one of the Mindset Teach videos is close to ZAR2800/minute (the equivalent to US$270/minute), which is relatively cheap in terms of video production. As a not-for-profit organization, the network relies on external funding to maintain most of its operations: providing sites with the vital equipment to receive its materials, and train teachers on how to use and integrate the Mindset infrastructure and materials to enhance their teaching, is included. So far, the organization has been funded, in cash and in kind, by South African and international businesses, as well as a range of funding agencies and multilateral donors. Some of its funding partners include Liberty, Standard Bank, Telkom Foundation, and Sunday Times. However, Mindset is increasingly moving toward financial independence and sustainability, by serving a range of additional clients through its video production and, thereby, developing its own revenue streams.

Impact to Date

Over the last 12 years, Mindset has developed over 500 h of video content for South African learners and teachers, accompanied by hours of interactive media and pages of print content. Due to the content being available on multiple forums and in multiple formats, the foundation ensures that their work is able to benefit as many people as possible. At the moment, Mindset broadcasts to over 2.5 million households and over 1500 individual schools and resource centers. Its work is also recognized by the South African government, who includes their content on the country's Thutong Portal – an online community developed to support South African teachers.

The organization's most recent evaluation is based on one of their programs – Ukusiza – that trains teachers and provides teaching and learning resources to the schools it works with (this report, not available online at the time of writing, is the draft version of a midline report focusing on Grades 1–6 Literacy and Language). Most learners in the test schools achieved marks of 50 % or higher than those in controlled schools in all measures, demonstrating the effectiveness of their programs.

Success Factors

Digital Network

In an era that is increasingly driven by technology, an online presence of any organization is necessary. Not-for-profit, educational establishments, such as the Khan Academy, have utilized the digital space in order to enhance education worldwide. Similarly, it is Mindset Teach's widespread digital network that augments its success. Digitalization has not only made distribution easier, with information now available to us on our fingertips, but has also allowed the phenomenon to spread quicker. There is a growing need to distribute content as widely and economically as possible, in order to ensure positive outcomes – and the Mindset Network fits right in between the demand-and-supply chain.

The Mindset Teach Videos

As previously mentioned, the Mindset Teach videos focus on the act of teaching – behaviors and practices that make for good teaching – as opposed to actual

content. For example, one of the videos looks at the art of questioning – good and bad ways to ask questions in class. It highlights what good questioning will be like rather than its application to a particular subject. In essence, a math teacher can watch a teacher teaching English, but still see principles and practices that they themselves can apply. In order to enhance the content's educational benefits, Mindset also gives its users the creative freedom to add value to the content, in ways that Mindset could not do so and, therefore, invests in building the skills of its content developers and users. Each media format is also utilized in terms of the extent of benefits it can offer.

Focused on Motivating and Supporting Teachers

One of the issues faced in South Africa is that neither the system nor the teachers themselves view teachers as professionals. Teachers' unions are very powerful and militant, thus perpetuating a vicious cycle: teachers behave like workers so the system treats them like workers so the teachers behave like workers. One of the aims of Mindset Teach is to re-professionalize the teaching profession, by helping teachers see themselves as professionals and pushing them to engage in the self-reflective habit of professionals.

And, therefore, out of all the stakeholders in the educational sector, the organization chooses to focus specifically on teacher development. They believe that the quality of an education system cannot exceed the quality of its teachers and, therefore, improving instruction and motivating teachers to bring about what they feel will have the most impact on education. By sharing valuable classroom practice and school improvement ideas – effectively giving teachers a reason to change and develop and providing them with a forum where they can talk about their difficulties – Mindset meets the educational needs of the teachers. Their face-to-face workshops are also opportunities for teachers to learn from one another, as well as for Mindset to test the efficiency of their content. Teachers, like other professionals, improve their practice through reflection, collaboration, and mentoring.

Challenges

Measuring the Extent of Impact

Although Mindset regularly undertakes programmatic evaluations on a large scale in order to measure the effectiveness of their program, as well as ensure it is running smoothly, it is a challenging task for them to measure the exact extent of their impact. It may be difficult to gauge certain aspects of this program, for example, how many teachers are aware of this network? How many are active users? Do they find the content useful? And, most importantly, is what they learn being implemented in their own classrooms? By being digital and freely available, they have ensured accessibility; however, at the same time, this also hinders their ability to qualitatively and quantitatively measure the degree of influence they have.

Future Priorities

Mindset Teach has, for many years, strived to improve the quality of instruction in South Africa. By being innovative, flexible, and focusing simply on educational

quality and contextual relevancy, the program has positively impacted the primary and secondary educational community. While the network is aiming at the personal, social, cultural, and economic development of all people in Africa, in order to develop itself continent-wide, they are required to be more accessible to those living in the less affluent parts. Continuing to work with national governments, as they have been working alongside the South African government, will ensure they can achieve cooperation and success on a larger scale.

The Sikshana Foundation

The Sikshana Foundation is an NGO in India that works with the government to improve the public school system. This type of public/private partnership was implemented to improve facilities and teaching standards in government schools which have struggled with issues around the quality of education. The Sikshana model begins with data analysis using assessments and other data sets to identify the academic and non-academic gaps that are present in the partner school or network of schools. Once the needs assessment is complete, a plan of action is developed that includes four primary supports: school mentors who guide and advise the stakeholders and counsel the children; motivational inputs for students to build extrinsic and intrinsic motivation; resource optimization, which typically includes the necessary school supplies and educational materials to support teaching and learning; and teacher training that enhances teaching methods and learning outcomes in schools and facilitates the transition from traditional, didactic approaches toward more learner-centered, inquiry-based, active-learning practices. Major learning programs embedded into the model include a focus on reading and writing instruction. This program design includes research-based practices such as an integrated approach to curriculum, instruction, and assessment, job-embedded professional development, strategic use of data, and a focus on continuous improvement. Again, it is no surprise that Sikshana schools are well ahead of state and national averages. The following section is the detailed case study of the organization.

Case Study 2: The Sikshana Foundation (India)
Nitika Jain

Introduction

Implemented in April 2010, the Right to Education (RTE) Act was hailed as a radical venture, promising to improve several aspects of education in India. It is the first piece of legislation of its kind that puts the responsibility of sending children to school on the government, as opposed to the parents. The act has been closely followed by NGO Pratham's Annual Status of Education Report (ASER) – a household survey that has measured enrolment, as well as levels of reading and arithmetic, since 2005. One of the growing concerns is the increasing gap between government and private sector schools in terms of the quality of education provided: they report

that although school facilities are showing improvements, thanks to the act's focus on infrastructure, government schools are still lagging behind, now more than ever.

The ASER (Rural) of 2013 maintains that learning outcomes, specifically in the government schools of many states, are poorer today than they were a few years ago, due to issues over quality of learning being largely neglected (Pratham, 2013). As a result, there has been a dramatic increase in private school enrolment in rural areas – from 17 % in 2005 to 29 % in 2013. In some states, the pace of enrolment in private schools noticeably quickened *after* the government declared it would provide free and compulsory education to all children, validating the fact that government schools are failing to reach even the basic levels of quality education (Pratham, 2013).

Having realized the need for educational reform years before the RTE Act was initiated, both the central and certain state governments introduced initiatives that have improved facilities and teaching standards in public schools. In order to accelerate this process, states such as Karnataka – a pioneer in this venture – introduced the idea of working with NGOs to develop schools and enhance learning outcomes. The Sikshana Foundation[2] is one such organization that is assisting the government in improving the public school system. Since 2002, the not-for-profit organization has partnered with state governments of India and supported existing government schools. Sikshana believes that with over 80 % of students in India studying in government schools, if the quality of education is to be improved, the effort should be made here. Through their holistic approach to education, the foundation involves all key stakeholders (students, teachers, parents, the community, and the school), and stresses the importance of cooperation.

Sikshana largely focuses on the child as the sole beneficiary of all the efforts; therefore, the decisions made regarding the kind of support offered to each school is based on how effectively it would augment the learning levels of the children. Once affiliated, the foundation supports the school for a period of 3 years, providing it with a full-time mentor and needs-based resources, aids in developing the skillset of the staff, and assists stakeholders in devising a strategic vision for their school. From financial support to teacher training, Sikshana provides both academic and non-academic assistance, working as a facilitator rather than a provider. The model they have established, born of effort and experience, is continuously evolving, sustainable, and can be replicated on a larger scale. So far, they have successfully impacted the lives of over 180,000 children in more than 1100 schools in Karnataka, Andhra Pradesh, Gujarat, and Maharashtra.

This case study reviews the model put forward by Sikshana, their costs, impact to date, success factors, and challenges. In view of its remarkable growth over the last 12 years, its relationship with the government and the positive manner in which the quality of education has been affected, this case study will briefly look at the potential to expand Sikshana's work in other states.

[2] The information on this case study draws heavily upon conversations and email correspondence with V. R. Prasanna (Executive Director of Sikshana Foundation) between June and August 2015.

Program Overview

The Sikshana Foundation took off in early 2002 through the Sivari Trust, when founder E. S. Ramamurthy signed an official document to "adopt" and improve the learning outcomes of a small primary school in Arehalli, Karnataka. Not only was it necessary to provide them with teaching aid, workbooks, and extra teachers, but also, in order to eventually establish self-sustainability, it was essential for him to motivate them. Every one of the students had passed in the examinations, and the school scored a perfect 100, proving that this method was indeed successful. And thus, through initial trial and error, the Sikshana model had emerged. At first the organization concentrated only on primary schools, as they believed in strengthening the base upon which the larger structure of the education system was going to be built. However, over the years, they have slowly expanded their model in order to cater to the lower and upper secondary schools as well.

The foundation shares a strong relationship with the government, which allows them to successfully conduct their intervention in schools that are owned and run by the government. Other than working with the school staff, Sikshana also ensures that officials of the education department, resource department, and district officers are constantly updated and involved with the activities run by the foundation.

Initially, Sikshana often faces a certain amount of hostility from the teachers and schools it adopts. However, thanks to the determination and enthusiasm of the mentors, who invest a substantial amount of time and effort in engaging with the school, barriers are eventually broken, a connection is made, and a two-way communication emerges. Over the course of their intervention, Sikshana is directly involved in developing the plans of action for the school and brainstorming solutions to problems they have collectively identified. This relationship with the school and community is essentially the basis of their program: by involving all the various stakeholders, they are able to mobilize the community as a whole and eventually push them toward self-sustainability.

The public school staff and students are supported for a period of 3 years, and the local community members are extensively involved in the school activities. The foundation disengages from the school programs by the fifth year.

The Sikshana Model

Once a cluster of schools has been identified, Sikshana identifies the academic and non-academic gaps that are prevalent and uses its learning assessments, as well as those based on the ASER's assessment methods for arithmetic and languages, to test the levels of the following: basic skills, conceptual knowledge, and science and technology. Using these results, a certain amount of time is invested in understanding the educational situation and identifying the manner in which the foundation can support the schools. Thereafter, a plan of action is developed and implemented using their already-established model, which is both sustainable and easily replicable. There are four principal areas of development the foundation looks at:

- *School mentoring*: Immediately after a relationship has been established, Sikshana provides each school with a full-time mentor. Each mentor is respon-

sible for a cluster of about 20 schools and visits each school three times a month in order to guide and advise the stakeholders (the teachers, principals, administration, community, etc.), as well as to counsel the children. This mentor also assists the stakeholders in establishing the short- and long-term goals for the school, to ensure continuous growth and development.

- *Motivational inputs*: Sikshana believes in the power of motivation and sees it as a key factor to evoke an interest in learning. Positive reinforcement, encouragement, and the use of incentives have been successful in motivating students. In some schools, for example, students are awarded a star badge for their skills or academic performance, redeemable for a gift in the future. By proudly wearing it on their uniform, they further encourage both themselves and their peers to progress further. This is further emphasized through appreciation awards for students and teachers that motivate them to continually perform better.
- *Resource optimization*: As developing learners, students are in constant need of material that challenges and intrigues them. Depending on the need, Sikshana supplies schools with a range of learning resources, educational material, and multimedia equipment; from notebooks and school libraries to laptops and desktops, the schools are provided with a substantial amount of material to nurture the minds of the children. (The laptops and desktops are mostly used by the staff rather than the students, as the foundation does not really encourage their use in learning. However, the presence of technology generates a sense of pride in the schools and therefore has proven to be an effective motivational tool).
- *Teacher training*: In order to enhance teaching methods and learning outcomes in school, and move away from the traditional rote-based pedagogy, Sikshana ensures that its teachers are provided with vigorous and engaging training programs throughout the year. Teachers are also given total quality management (TQM) training, and the concepts learned are applied in the schools. These camps and workshops focus on honing personal skills, developing leadership qualities, and coaching the teachers on innovative pedagogical methods. Teachers are, therefore, equipped and empowered to positively impact the quality of education in the schools.

Major Learning Programs and Pedagogy

Traditionally, government school teachers have no say in how the pedagogy is structured or how the students are assessed. Due to years of non-involvement and a distinct lack of authority, there seems to be growing resentment on the part of the teachers, who, over time, become largely demotivated and disengaged. However, a considerable amount of effort is put in to train, motivate, and connect with the school teachers. They are motivated to perform better, delegated responsibility, and given overall ownership of their classrooms and students. Sikshana's programs that focus on developing skills also aid in improving the overall quality of education. Thus, a substantial amount of pedagogical reform is indirectly implemented through Sikshana and occurs outside of the classroom. Some of their major learning programs include:

- *The reading program*: After extensively studying a variety of methods, Sikshana devised a program on how children can learn to read in their native language. In order to improve the weaker students' reading ability, they are paired with peers who are good at it and helped to read a non-academic book for a period of 30 days. Not only do the students develop their vocabulary and reading skills, but by bonding with their peers, they successfully create a healthy learning environment in the classroom. Sikshana also aids in establishing libraries and encouraging children to develop an interest in reading.
- *The writing program:* Other than reading resources, many government schools are also lacking in writing resources, which result in children not being able to write and express themselves well and eventually performing poorly in academic examinations. Sikshana's writing program provides children with plain sheets of paper, which they are encouraged to fill by the end of every week. These are then exchanged for fresh sheets and the process continues. This task has resulted in a drastic improvement in students' pace and quality of writing, while also boosting their confidence in their writing ability. Alongside this, children are also given diaries in which they maintain a log of activities and organize their work, further enabling them to practice their writing skills.

Other than these, each of the Sikshana schools organize different activities to encourage learning, for example, children are encouraged to participate in sports tournaments to develop a balanced set of skills, winners of a quiz competition are given the opportunity to visit New Delhi, and prizes are regularly given to children who perform well. The students are constantly motivated, challenged, and encouraged to do better.

Costs

On the whole, it costs Sikshana between Rs. 300–400 (USD 4.5–6) to impact one child per year. With the current model, a school with around 120 children will typically need an investment of Rs. 50,000 (USD 752) per annum, in order to significantly improve the learning levels. The foundation also provides financial assistance for students at high school level, whereby each student receives up to Rs. 1800 (USD 27) a year, for 3 years.

As a non-governmental organization, Sikshana receives most of its funding through individual and corporate donors, as well as state governments and organizations, such as Dell, GE Energy, the Michael and Susan Dell Foundation, the Monsanto Fund, and Vibha. Vibha, specifically, has been a partner of the organization since 2005, providing both physical and financial support. They have aided in expanding Sikshana's work to other states, connected them to many schools, marketed their program in order to attain other partners, and provided them with scores of volunteers. Annually, Sikshana's operating budget is between Rs. 2–7 crore: over 70 % of this money goes to school expenses, over 20 % on mentoring, and around 5 % on administration.

Impact to Date

Since its establishment, the Sikshana Foundation has adopted over 1135 schools and impacted over 180,000 students, across rural Karnataka, Andhra Pradesh,

Gujarat, and Maharashtra. Sikshana's cost per student has also been decreasing as it scales – over the last 10 years, the foundation has grown by over 80 % in terms of the number of students it impacts – while its annual cost per student has decreased by 10 %.

Sikshana's vision is to evolve a sustainable model for an effective and decentralized government schooling system and to use it to improve the quality of education in government schools in India. So far, their own as well as ASER's method of evaluation has shown that their intervention has resulted in an overall improvement in the children's learning. Many of Sikshana's adopted schools have consistently produced outstanding results in board examinations, while other schools have managed to secure a 100 % pass rate. Many of the students in schools who were identified to be at the risk of not passing have also passed, due to the timely intervention and rigorous monitoring of the foundation.

When comparing the National ASER 2011 results in reading and arithmetic with Sikshana-affiliated schools, results have shown that Sikshana schools are well ahead of the state and national averages. Standardized assessments have also indicated that 85 % of the children in the foundation's reading and writing programs have improved their reading and writing skills. Overall, many schools have benefitted considerably and enhanced their quality of learning owing to the support of the Sikshana Foundation.

Although Sikshana does not closely monitor the school once the period of intervention is over, they are aware that their programs continue to be sustained by the schools. Many of their high schools, for example, have maintained their high standard, bringing about a particular change in the overall environment. As a foundation, Sikshana strongly believes that the community, as well as other stakeholders, should fully take over the responsibility of the school once Sikshana has stopped intervening actively. The CEO, V. R. Prasanna, states: "The more you transfer the ownership to the community, the higher the success rate." His vision is essentially to empower the stakeholders.

Success Factors

Positive Relationship with State Governments

In order to be successful in their venture, it is extremely important for Sikshana to have a good relationship with state governments. Many NGOs working in the educational sector are seen by the government as a threat – as organizations that are working against them. However, due to Sikshana's focus on supporting schools rather than taking over them and stressing upon their role as a facilitator rather than a provider, state governments see the foundation as a force working with them and not against them. Not only have they built a good rapport with each other, but state governments actively promote Sikshana's initiatives through programs of their own, as both share a common goal of enhancing the learning experience.

Strong and Flexible Model

The Sikshana model, cultivated over the years, is a strong and sustainable model. The four principal areas of development (school mentoring, motivational input, resource optimization, and teacher training) are strong pillars that successfully allow schools to develop and enhance the quality of education provided. Although

the base factors of the model remain the same, the kind of support offered to each school also differs from case to case. Due to its evolving nature, the model also ensures that it can be replicated in other locations.

Strong Mentoring Program

The success of the model is highly dependent on the support and supervision of the Sikshana-trained mentors, who are the strength of the foundation and have effectively managed the process of implementation. Chosen on the basis of how well they can work in an unstructured environment, where each school is different from the next, the mentors are able to leverage local relationships to their benefit, as most of them are also locals who have existing relationships with the community. The initial goals and vision of every school are also formulated under the guidance of the mentor, who ensures that progress is being made and the school is on track. Mentors are also responsible in advising and constantly motivating stakeholders, and counseling the children, which puts them in a crucial position. Although the extent of impact is intangible, there is a certain spirit they have created in the schools: the students tend to be much more excited and invigorated, and the teachers feel supported and look forward to their visits, verifying their overall effectiveness.

Challenges

Motivating Students

Motivating the various stakeholders affiliated with the school has always been a difficult task, but not more challenging than motivating the students themselves. Due to their rural backgrounds, most of the students in these schools have little ambition or aspiration. This has proven to be a challenge for Sikshana, but something they place an enormous amount of importance on, as motivational inputs is one of their core development areas. Motivating students is also understandably tougher in high school than in primary schools, as by that age it becomes more difficult to alter their mind-set.

Pushing Schools to Be Self-Sustainable

One of the core missions of Sikshana is to motivate the schools to set their own goals, work toward achieving them, and eventually assume responsibility for the entire process over a period of time. However, on many occasions, the foundation faces the struggle of trying to push the community to take responsibility for the school, as, according to Sikshana, they are comfortable letting others manage the program. Their unwillingness is both risky and damaging for the school and community.

Implementing Change on a Larger Scale

While Sikshana has clearly identified the area they want to develop, they are not actively looking to aid the government or engage policymakers to enforce change at any level. As previously mentioned, any organization is welcome to support the government in their ventures, as long as they are not pushing nor criticizing the government – or becoming activists. Therefore, on the whole, it may be difficult for the foundation – or for any NGO for that matter – to bring about permanent change in the system.

Future Priorities

After 13 years of successfully implementing the model and impacting a large number of students, Sikshana is pushing to expand and replicate the model in other

states. Although possible, the foundation does not want to implement their model in conjunction with the central government of India and prefer working through state governments – after all, it is the states that have to run the schools. Many state governments are also wary of Sikshana and find it hard to accept that a simple model as theirs can impact the quality of learning in public schools. It is only a matter of time until governments will realize that in order to continue developing and enhancing the public education system, they are required to work alongside promising NGOs such as the Sikshana Foundation.

Conclusion

Both of these case studies highlight the positive results that come from supporting teachers and helping them to improve their instructional skills, content knowledge, and overall pedagogical understanding. They also underscore that teacher and student motivation and engagement go hand in hand with improved outcomes and that designing challenging, relevant, engaging, and developmentally appropriate instruction and support help youth to build the essential knowledge, skills, mind-sets, and habits they need to succeed in work and life, both locally and globally.

These examples from the field provide evidence of the four essential research-based principles and practices for highly effective secondary schools in action: rigorous curriculum instruction and assessment, distributive leadership and teacher quality, a positive learning community/learning environment, and a focus on continuous improvement. In addition, they stress how having a flexible model of school improvement, which can be adapted to the local context, is crucial to success. Thus, while these four principles and practices are key to improving secondary school outcomes around the world, the strategies within each category are broad enough to adapt and reinterpret for the local, cultural context of schools.

The Mindset Teach and the Skishana Foundation case studies are models of the power of partnerships and an integrated, cross-sectoral approach to development. Through a shared commitment to improving school access and quality for youth and an integrated approach to services and supports, countries can better address the critical issues of education, healthy development, and economic independence.

References

American Psychological Association. (2002). *Developing adolescents: A reference for professionals*. Washington, DC: American Psychological Association.

Atkinson, M., & Sturges, J. (2003). *At the turning point: The young adolescent learner*. Boston, MA: Center for Collaborative Education.

Benson, P. L. (2003). Developmental assets and asset-building community: Conceptual and empirical foundations. In R. Lerner & P. L. Benson (Eds.), *Developmental assets and asset-building communities: Implications for research, policy, and practice* (pp. 19–43). Norwell, MA: Kluwer Academic Publishers.

Brown, B. B., & Larson, R. W. (2002). The kaleidoscope of adolescence: Experiences of the world's youth at the beginning of the 21st century. In B. B. Brown, R. W. Larson, & T. S. Saraswathi (Eds.), *The world's youth: Adolescence in eight regions of the globe*. Cambridge: Cambridge University Press.

CASEL. (2014). *Social and emotional learning competencies. Social and emotional learning outcomes*. http://www.casel.org/social-and-emotional-learning/core-competencies. Accessed on 15 July 2014.

Caskey, M.M., & Anfara, V.A. Jr. (2007). *Research summary: Young adolescents' developmental characteristics.* http://www.nmsa.org/Research/ResearchSummaries/DevelopmentalCharacteristics/tabid/1414/Default.aspx. Accessed on 12 July 2014.

Darling-Hammond, L., Wei, R. C., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the United States and abroad*. Stanford, CA: National Staff Development Council and the School Redesign Network at Stanford University.

FHI 360. (2015). *Education for children and youth program*.http://www.fhi360.org/projects/education-children-and-youth-program. Accessed on 24 Mar 2016.

Haggerty, K, Elgin, J., & Woolley, A. (2011, January 5). *Social-emotional learning assessment measures for middle school youth.* Social Development Research Group, University of Washington. Commissioned by the Raikes Foundation.

Hanushek, E. A. (2011). The economic value of higher teacher quality. *Economics of Education Review, 30*, 466–479.

Jackson, A., Davis, G., Abeel, M., & Bordonaro, A (2000). *Turning points 2000: Educating adolescents in the 21st century.* A report of Carnegie Corporation of New York. New York, NY: Teachers College Press.

Lerner, R. M. (2005). *Promoting positive youth development: Theoretical and empirical bases*. White paper prepared for the workshop on the Science of Adolescent Health and Development, National Research Council/Institute of Medicine. Washington, DC: National Academies of Science.

Lerner, R. M. (2006). *The good teen: Rescuing adolescence from the myths of the storm and stress years*. New York, NY: Stonesong Press/Crown Publishers.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41*, 954–969.

Martinez, M. (2005). *Advancing high school reform in the states: Policies and programs*. Reston, VA: National Association of Secondary School Principals.

McNeely, C., & Blanchard, J. (2009). *The teen years explained: A guide to healthy adolescent development*. Baltimore, MD: Johns Hopkins Bloomberg School of Public Health.

Mindset. (2015). *Mindset network: About us*. http://www.mindset.co.za/about-us. Accessed on 3 July 2014.

Mogollon, O., & Solano, M. (2011). *Active schools: Our convictions for improving the quality of education*. In Ana Florez (Ed.). Washington, DC: FHI 360. http://www.epdc.org/sites/default/files/documents/Active_Schools.pdf. Accessed on 16 June 2014.

National High School Alliance. (2005). *A call to action: Transforming high school for all youth.* Washington, DC: National High School Alliance. http://www.contracostayouth.com/docs/CalltoAction2005.pdf. Accessed on 2 July 2014.

National Middle School Association. (2010). *This we believe: Keys to educating young adolescents.* The position paper of the National Middle School Association. Westerville, OH: National Middle School Association.

NCATE. (2006). *What makes a teacher effective? A summary of key research findings in teacher education*. Washington, DC: National Council for Accreditation of Teacher Education.

Nsamenang, A. B. (2002). Adolescence in sub-Saharan Africa: An image constructed from Africa's triple inheritance. In B. B. Brown, R. W. Larson, & T. S. Saraswathi (Eds.), *The world's youth: Adolescence in eight regions of the globe*. Cambridge: Cambridge University Press.

Payton, J., Weissberg, R. P., et al. (2008). *The positive impact of social and emotional learning for kindergarten to eight-grade students: Findings from three scientific reviews*. Chicago, IL: Collaborative for Academic, Social and Emotional Learning.

Population Reference Bureau. (2013). *World's youth 2013 data sheet*. http://www.prb.org/Publications/Datasheets/2013/youth-datasheet-2013.aspx/. Accessed on 19 July 2014.

Pratham. (2013). *Annual status of education report (rural) 2013*. Mumbai: Pratham. http://img.asercentre.org/docs/Publications/ASER%20Reports/ASER_2013/ASER2013_report%20sections/aser2013fullreportenglish.pdf. Accessed on 7 July 2014.

Sackman, R. (2011). *FHI 360 PSO best practice report*. Unpublished internal project findings.

Scales, P. C., & Leffert, N. (2004). *Developmental assets: A synthesis of the scientific research on adolescent development*. Minneapolis, MN: Search Institute.

Schmoker, M. (2006). *Results now*. Alexandria, VA: ASCD.

Serpell, R. (1993). *The significance of schooling: Life-journeys in an African society*. Cambridge, UK: Cambridge University Press.

Shanahan, M., Mortimer, J., & Kruger, H. (2002). Adolescence and adult work in the twenty-first century. *Journal of Research on Adolescence, 12*, 99–120.

Spano, S. (2014, May). *Stages of adolescent development. Facts and findings*. A collaboration of Cornell University, University of Rochester, and the New York State Center for School Safety. Ithaca, NY: ACT for Youth Upstate Center for Excellence.

UNDP. (2013). *Human development report 2013: The rise of the South: Human progress in a diverse world*. New York: UNDP.

Verma, S., & Saraswathi, T. S. (2002). Adolescence in India: Street urchins or Silicon Valley millionaires? In B. B. Brown, R. W. Larson, & T. S. Saraswathi (Eds.), *The world's youth: Adolescence in eight regions of the globe*. Cambridge: Cambridge University Press.

Yoon, K. S., Duncan, T., Lee, S. W-Y., Scarloss, B., & Shapley, K. (2007). Reviewing the evidence on how teacher professional development affects student achievement. *Issues & answers report,* REL 2007–No. 033. Washington, DC: U.S. Department of Education.

Chapter 6
Soft Skills: What They Are and How to Foster Them

Shubha Jayaram and Rose Musau

Introduction

Soft skills, also known as behavioral or non-cognitive skills, are interpersonal skills that are increasingly seen as crucial to employability. While technical and cognitive skills are important in the workplace, transferable, non-cognitive skills such as communication, problem solving, punctuality, and flexibility are increasingly important – particularly for the informal economy (R4D, 2013a, 2013b). The significance of soft skills is gaining momentum particularly in the context of the post-2015 education debate, with an increased focus on what these skills encompass, how to measure them, and how to foster them. This chapter provides an overview of these issues, with two case studies (Educate! and Yuwa) presented to illustrate various mechanisms to foster these skills in youth.

What Are Soft Skills?

Although terminology and definitions may vary, soft skills are transferable, foundational skills that are critical to employment and individual growth. The ILO notes key skills for the world of work include basic/foundation skills (e.g., literacy and numeracy), vocational/technical (e.g., job-specific skills for a specific task), professional/personal skills (e.g., individual attributes such as honesty and reliability), and

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DOI 10.1007/978-3-319-49485-2_6

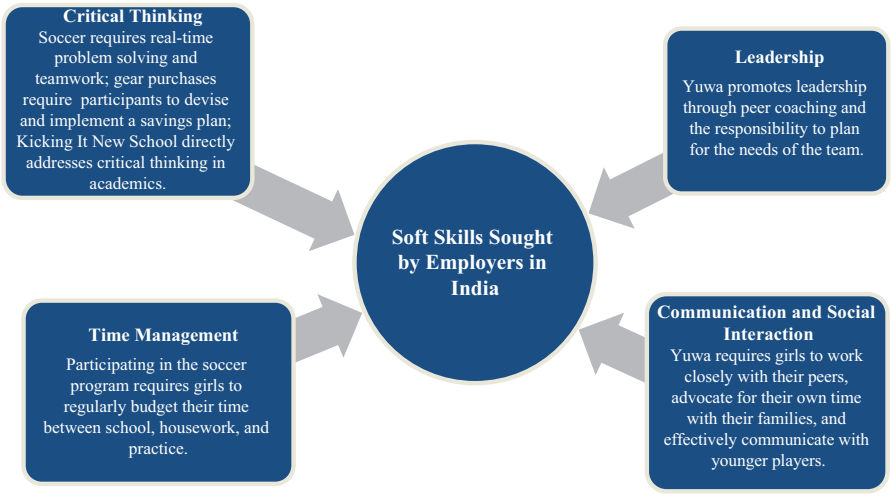

Fig. 6.1 Skills for employability through Yuwa's soccer program (Reproduced by permission of Yuwa)

core work skills (e.g., communication, teamwork). The ILO further unpacks these "core employability" skills as falling into four categories, namely, learning to learn, communication, teamwork, and problem solving (ILO, 2013). Together, these core traits broadly encompass what are considered soft skills, particularly crucial for today's twenty-first-century labor market (Fig. 6.1).

A 2012 R4D study revealed that employers are as concerned about non-cognitive skills as they are about cognitive and technical ones; while there are some regional and sectoral differences, those are not as important as this broader finding. A 2015 report also noted that soft skills "rival academic or technical skills in their ability to predict employment and earnings" (Child Trends, 2015). Non-cognitive skills are also much more important for the informal sector than previously realized; a particularly crucial finding given that the vast majority of the labor market in developing countries is in this sector (R4D, 2013a, 2013b). Most informal workers are self-employed and thus need to be able to work along the entire value chain; a broad range of skills are needed to effectively run a business, interact with clients, and make executive decisions. This requires soft skills such as discipline, confidence, negotiation, communication, and decision-making. It also requires entrepreneurial and business skills, such as financial management, market research, and marketing. Indeed, informal economy workers need to be more self-reliant than formal economy ones.

More broadly, however, soft skills are seen to be crucial to become a global citizen and contribute to the fostering inclusive, sustainable, and peaceful societies. For example, the UN Secretary-General's Global Initiative on Education focuses on three priorities, namely, access, quality, and global citizenship; the inclusion of this last priority illustrates clearly the value of non-cognitive skills in today's world. It is

being increasingly seen that soft skills not only contribute to an individual's growth but also to that of communities and countries. Indeed, the Global Education First Initiative's last priority states that: "It is not enough for education to produce individuals who can read, write and count. Education must be transformative […and it] must give people the understanding, skills and values they need to cooperate in resolving the interconnected challenges of the twenty first century" (United Nations, 2012b). It is apparent in this definition that education imparts more than cognitive and technical skills and includes concepts such as instilling respect, citizenship, and broader awareness about the larger world.

Anecdotal Reflections from Employers[1]

Insight from recruiting agencies and candid interviews with CEOs and senior business leaders in Kenya reveals that organizations are beginning to realize that soft skills are at the heart of their businesses and are critical to their employees' performance, progression, and motivation. In the past, companies have concentrated on training and recruiting based on hard skills; however, for companies to maintain their competitiveness, they will have to invest in training for soft skills. Anecdotal conversations with recruiters and employers in Kenya reveal that the following soft skills are seen to be of paramount importance:

- Self-confidence
- Innovative and creative thinking
- Communication
- Leadership
- Empathy
- Persistence

From the perspective of employers, soft skills complement hard skills and are needed to excel as a leader. In candid conversations, employers remark that in today's competitive work environment, while technical skills alone may lead to an initial job offer, traits such as work ethic, integrity, honesty, teamwork, self- confidence, and communications are critical to an individual's job success and professional growth.

[1] Musau, one of this chapter's coauthors, is Founder and Chief Executive Officer of Preferred Personnel Africa (PPA), a Human Resource firm in Nairobi, Kenya, which was established 17 years ago. Musau's personal experience and informal conversations with employers over the past two decades inform this section.

How to Acquire Soft Skills?

Traditionally, skills are acquired through quality primary and secondary education and complemented by vocational training, apprenticeship, and other forms of on-the-job training. Indeed, secondary school has been shown to be particularly crucial to acquiring workplace relevant skills, including soft skills – the focus of this chapter. However, issues of quality and access meant that youth are not acquiring the skills needed for today's labor market.

Surveys show that employers believe that secondary and tertiary graduates do not have the right skills needed for employment. For example, a 2013 McKinsey study found that 58 % of employers in countries surveyed did not believe their newly hired graduates were adequately prepared for the job (McKinsey, 2013). In a 2006 Conference Board study, only 24 % of employers gave their employees top marks for skills such as collaboration, work ethic, and communication, even though they rated these skills as vital for success in the workplace (Conference Board, 2006).

When youth do have the opportunity to attend some level of schooling and "soft skills" have been incorporated into curricula, outdated pedagogy and poorly trained teachers mean soft skills are not acquired. Many teachers view learning as a "direct transmission" process, where the teachers direct the students toward specific knowledge rather than help students develop necessary skills and knowledge independently. Rote memorization is often used, and students do not have an opportunity to practice and acquire skills such as teamwork, collaboration, and leadership. Moreover, even when soft skills development programs are present, those who are poor, female, or from a marginalized group often do not see the needed benefits that such programs can provide. Access to any form of education is challenging for marginalized youth. They are more likely to start school late and drop out early. This difficulty extends to soft skills acquisition as well, which is why programs incorporating soft skills learning are making concerted efforts to reach excluded youth.

In India, for example, Jawahar Navodaya Vidyalayas (JNV) boarding schools are run by the Ministry of Human Resources Development under the Department of Education. These schools reach out to rural and often marginalized children by reserving 75 % of all spaces for students from rural areas. The program incorporates culture, values, environmental awareness, physical education, and other non-cognitive activities into lesson plans in order to develop its students. With 565 JNV schools as of 2013, and a pass rate 10 % higher than national upper secondary averages, this program has made a real impact (R4D, 2013a, 2013b). Meanwhile, in Thailand, a vocational secondary education program for 7-Eleven convenience stores, organized independently by the CP All Company, has also demonstrated promising potential. As a result of a curriculum that includes major investments into work-based learning opportunities, over 10,000 of these business students have received valuable preparation in leadership, language, and other skills needed for future success (R4D, 2013a, 2013b).

Programs like these have demonstrated value, but their reach remains too small to fully meet the challenge ahead. 121 million youth of primary and lower secondary school age remain out of school, and an estimated 12.5 % of people aged 15–24 are unemployed (UNESCO 2012). To reach these youth, alternative mechanisms may be needed, and innovative solutions to soft skills delivery have to be explored. In order to complement these reforms, more data is also needed on assessing and measuring soft skills instruction.

How to Measure Soft Skills?

Measuring the effectiveness of non-cognitive skills development can be inherently difficult. However, data collection efforts are becoming more and more adept.

The World Bank STEP Skills Measurement Program uses direct assessment, household, and employer surveys to examine skills development in low- and middle-income countries (World Bank, 2014). The STEP program measures the skills labor markets require, the relationship between skills acquisition and educational achievement, as well as the connection between skills acquisition and future economic or social benefits. The WorkKeys assessment system, founded by ACT, is another tool providing information for non-cognitive skills advocates. The assessments measure traditional workplace skills such as reading, business writing, and applied mathematics, but also evaluate soft skills like teamwork, capacity to constructively listen, as well as more personal characteristics such as fit with workplace cultures (McKinsey, 2013).

Measurement instruments in the field of non-cognitive research are now numerous enough for aggregation analysis to occur. The Forum for Youth Investment demonstrates the potential for this next step with its report, “From Soft Skills to Hard Data: Measuring Youth Program Outcomes.” Their analysis goes beyond traditional academic assessment and accumulates surveys and other research to provide guidance for soft skills like communication, creativity, determination, and independence, among others (Wilson-Ahlstrom et al., 2014). The guidance is not specific advice, but in the aggregation of information through the forum’s research. This broad data is a critical announcement that can inform practitioners and policymakers in a variety of education or development contexts.

In sum, evaluation methods for soft skills are now more advanced than ever. Quantifying these sometimes nebulous concepts remains a challenge, but the present context does warrant some excitement. The next step will be to merge the accumulating data with mounting experiences from organizations and learning institutions in the field.

Case Studies: Incorporating Soft Skills Through In-School and Out-of-School Mechanisms

The two case studies in this chapter illustrate how soft skills can be fostered in both a traditional brick-and-mortar school as well as in a nonformal, out-of-school setting.

Educate!

The first model, Educate!, is an organization based in Uganda that seeks to develop young leaders and entrepreneurs and empower youth via an experiential learning program and rigorous mentorship. The organization's flagship program is the Educate! Experience, which is based on a model of in-depth mentorship and an experiential learning course. In addition, the Teacher as Mentor (TAM) Program also works with teachers around the country to foster and support entrepreneurship skills within the classroom. In the flagship program, mentors start working with students ("Educate Scholars") in their second to last year of secondary school, with the program continuing for 2 years. Students are selected based on their commitment and motivation, with about 30 students at each school selected for mentorship. Meanwhile, mentors are strong recent graduates from local universities in Uganda and receive thorough training before being placed at partner schools. Each mentor at the partner school works directly with students to help build essential non-cognitive skills such as self-confidence, communication, and leadership. Students often do not receive opportunities to build such relationships or receive both professional and personal counseling in the typical school setting, and the goal is to empower students to have the confidence to create a positive impact in their communities.

A second key component of the program is experiential learning. The mentors teach a more formal, two-year entrepreneurship and leadership course to students, where practical business skills are developed. Scholars are also required to start their own business that tackles an issue faced by their community. Support for this is also provided via student-run after-school "business clubs," where mentors play a key role in advising students on the day-to-day mechanics of effectively running a business.

The key emphasis of Educate! Experience is to provide youth with a relevant skill set to become leaders and to empower them to reach out and impact others. Although not all students may go on to become entrepreneurs after they graduate, the mentorship, business knowledge, and transferable skills they receive are assets as they seek employment. The next section is the detailed case study of the organization.

Case Study 1: Empowering Youth Through Entrepreneurship: Educate![2]

Introduction

Entrepreneurship is a way of life in many parts of sub-Saharan Africa, with youth and adults choosing self-employment either out of choice or necessity. Given that sub-Saharan African countries tend to have the largest informal economies, many workers secure employment in this sector (R4D, 2013a, 2013b). Indeed, the 2012 African Economic Outlook notes that between 2008 and 2010, jobs in informal activities increased, and anticipates that this sector will continue to play an important role going forward (African Economic Outlook, African Development Bank, 2012). However, entrepreneurship – and particularly "informal entrepreneurism" – faces challenges in financing and attracting capital, navigating public infrastructure, and recruiting skilled workers (Omidyar Network, 2013). Specifically, on the last point, studies have found that students often do not learn entrepreneurial skills at the secondary or tertiary level, lack mentorship and career counseling opportunities, and do not have access to a supportive entrepreneurship culture (Omidyar Network, 2013).

Given these challenges, it is important to foster entrepreneurial skills and ensure that youth receive the training and support they need at an early stage. One program attempting to achieve this is Uganda-based organization Educate! Uganda has the youngest population in the world – with 78 % of the population less than 30 years of age – and the highest youth employment rate at 83 % (Bwambale, 2012). More than 70 % of young workers are also self-employed, with women more likely to be working than men (African Economic Outlook, African Development Bank, 2012). Within this context, Educate! seeks to empower youth at the secondary school level through a comprehensive entrepreneurship program that aims to develop their leadership and business skills so that they are effective entrepreneurs in their own communities.

Program Overview

Eric Glustrom first conceived Educate! in 2002, following a visit to refugee camps in Uganda where he gained a firsthand perspective of the role of education in lifting youth out of poverty. Together, Glustrom, Boris Bulayev, and Angelica Towne officially launched Educate! in 2004. The goal of the organization is to develop young leaders and entrepreneurs and to empower youth via an experiential learning program and rigorous mentorship.

The organization's flagship program is the Educate! Experience, which is based on a model of in-depth mentorship and an experiential learning course. In addition, the Teacher as Mentor (TAM) Program also works with teachers around the country to foster and support entrepreneurship skills within the classroom. Together, both programs currently reach roughly 8000 students and expect to expand to reach more

[2] Summarized from Brown, E. J., Acedo, J. M. R., et al. October 2013. Pathways to Employability: Part II: Case Studies of Six Innovative Programs to Enhance Skills for Employability in Youth. *Results for Development Institute.* Accessible from: http://r4d.org/knowledge-center/innovative-secondary-education-skills-enhancement-isese-phase-ii-research

than 20,000 by 2014. Educate!'s programs operate in schools across the country, and current partner schools include public, private, and religious schools in rural, peri-urban, and urban areas. Peri-urban schools are defined as those that are on the outskirts of urban areas. Programs do not have a gender-specific focus and target students from all income levels.

Educate! Experience

The flagship program was launched in 2009 at 24 partner schools in Uganda; key components include mentorship, experiential learning, and continued support following graduation from secondary school. Today, the program reaches 36 schools across the country and has touched 1600 students.

In the program, mentors start working with students ("Educate Scholars") in their second to last year of secondary school, with the program continuing for 2 years. Students are selected based on their commitment and motivation, with about 30 students at each school selected for mentorship. This application process means that students are more likely to be fully engaged in the program. Meanwhile, mentors are strong recent graduates from local universities in Uganda and receive thorough training before being placed at partner schools. Each mentor at the partner school works directly with students to help build essential non-cognitive skills such as self-confidence, communication, and leadership. Students often do not receive opportunities to build such relationships or receive both professional and personal counseling, and the goal is to empower students to have the confidence to create a positive impact in their communities.

A second key component of the program is experiential learning. The mentors teach a more formal, two-year entrepreneurship and leadership course to students, where practical business skills are developed. Each mentor works with four schools of 30–40 students, spending 4–6 h/week on-site. Scholars are also required to start their own business that tackles an issue faced by their community. Support for this is also provided via student-run after-school "business clubs," where mentors play a key role in advising students on the day-to-day mechanics of effectively running a business. Each mentor is also responsible for bringing in experts in different industries to provide students with more hands-on, specialized training. Students have started a variety of businesses over the years, including a piggery, a savings scheme, and a soap making business.

Lastly, scholars continue to receive mentorship and guidance after they graduate. Educate! has developed a strong alumni program that sustains ties between the mentors and scholars. Additional mentors are on call to provide targeted advice to graduates, and peer-to-peer learning and networking is encouraged via regional meetings.

The key emphasis of Educate! Experience is to provide youth with a relevant skill set to become leaders and to empower them to reach out and impact others. Although not all students may go on to become entrepreneurs after they graduate, the mentorship and business knowledge they receive are assets as they seek employment. Most importantly, the self-confidence and other non-cognitive skills fostered via mentorship will likely have a lifelong impact.

Teacher as Mentor (TAM) Program

Through the TAM program, Educate! helps teachers and administrators further support youth and entrepreneurship within the school setting. For instance, this includes guidance on teaching the entrepreneurship curriculum and training on providing mentorship to students. Unlike Educate! Experience, no mentors are sent into schools, and Educate! does not deliver any element of the entrepreneurship program. Instead, "teacher support coordinators" work to help schools implement the key components of the program.

The program today reaches 18 schools in Uganda. Educate! views TAM as a way to develop a long-term culture supportive of entrepreneurship within the school setting. TAM will eventually be crucial in scaling up the key pieces of the Educate! model and ensuring scale-up and reach across the country.

National Curriculum

With the support of the Ugandan government and the ILO, Educate!'s entrepreneurship curriculum has also been integrated into the national entrepreneurship curriculum in Uganda. Roughly 25,000 students are currently studying this curriculum at the secondary level.

Costs

Educate! costs vary by program; in both programs, however, capital and infrastructure costs are minimized as Educate! partners with existing schools. The Educate! Experience costs roughly USD $150/student/year and includes the cost of the mentors and materials used within the program. At present, the program is offered at no cost to both students and schools, as Educate! has wanted to build up its credibility and demonstrate the impact of the program. However, beginning next year, each school will be required to pay up to US$200/year for the program, with the goal of growing the cost annually (although it will still be offered free to participating students).

Meanwhile, the cost of running the TAM program is significantly lower, given that Educate! does not incur the cost of mentors. The program costs roughly US$50/student/year, with each school contributing US$40 per year. Bulayev recognizes that this is a token sum and concedes that in both programs, cost structures are not optimized to permit scale-up. Nearly all of Educate!'s revenue comes from donor funding, and key donors include the Segal Family Foundation, the Barr Foundation, and the Halloran Philanthropies. The annual operating budget stands at roughly US$1 million.

Going forward, the organization's priority is to increase the cost-effectiveness of both programs without compromising their quality and impact. One mechanism for this in the TAM program is to increase the number of schools served by each mentor; currently, one mentor serves four schools, and Bulayev believes that in time, each mentor can serve as many as 8–16 schools instead.

Impact to Date

The Educate! Experience has prioritized monitoring its results in a rigorous manner: mentors are required to share data on student attendance and information on the mentorship session on a biweekly basis and provide an assessment of each student each term. Meanwhile, Educate! staff assess each mentor three times a term and

audit the mentors' self-reported data. Principals are also required to fill out a survey on the program every term, while students are also tested to measure the impact of the program; tests are conducted at the beginning of the program, the end of the program, and on a yearly basis (for 2 years) after the program's completion. Results show that, to date, Educate!-supported youth have started 284 enterprises that have earned thousands of dollars in revenue and have created over 50 jobs.

Meanwhile, the TAM program is assessed by measuring a mix of outputs and short-term outcomes to ensure that the outputs delivered via the Educate! Experience are also being delivered via the TAM program. For instance, this may include recording whether business clubs were formed, revenue from the enterprises established, or whether mentors asked the appropriate questions in their lessons.

Educate! is now also developing a tool to measure the psychosocial development of the students that participate in its flagship program. When ready, the tool will be a survey that will measure personality traits and motivations (particularly related to leadership and entrepreneurship) and also incorporate an economic status index with indicators that reflect changes in the economic status of both youth and households (Measuring Educate!, n.d.). These metrics will provide a quantitative method to measure the increased levels of empowerment and entrepreneurship as a result of students participating in the Educate! Experience.

Success Factors and Lessons Learned

Given the crucial need to support entrepreneurship training within sub-Saharan Africa, Educate! offers some valuable lessons. These lessons and success factors are discussed below, with an effort made to distinguish the context-specific factors and general factors for success.

Although the organization is relatively young, it is placing a priority on results measurement and capturing the impact of its mentorship on students. The development of the innovative psychometric tool also has the potential to try to quantify the non-cognitive impact of various skills development programs and allow an understanding of the most effective mechanisms to support characteristics – such as leadership and communication – that are highly sought after by employers. These metrics, together with the results from the Randomized Control Test (RCT), will offer additional lessons in the coming years.

Contextual Factors for Success

Buy-In and Support from Local Stakeholders

Educate! has been fortunate to receive support from local education administrators and policymakers in Uganda. Unlike many programs that set up their standalone centers and face high capital costs, Educate! has instead partnered directly with local schools, using existing infrastructure and minimizing these costs. The organization has also deliberately worked to cultivate the support of local stakeholders and showcase its results to build its brand and credibility. Bulayev and his team managed to incorporate their entrepreneurship curricula into the national curriculum, and the TAM program now directly supports teachers and administrators in effectively teaching the subject.

General Factors for Success

Demand-Driven Experiential Learning Model

The experiential learning model – where students learn entrepreneurial skills in a hands-on manner and are actively supported to start their own businesses – has led to greater engagement and commitment from its "scholars." Unlike the traditional classroom model in Uganda, Educate! allows its scholars to apply what they learn in a meaningful manner. The program allows students to take ownership over their work, with youth given the freedom to choose the enterprise they want to start, and mentors providing support throughout the business development process.

Recruitment of Strong Mentors and Program Staff

Bulayev credits the mentors and staff on the ground for a large portion of the model's success. The experiential learning model is not a commonplace in Uganda, and Educate!'s cofounders recognized that selecting strong mentors would be key to the program's success. It was not only crucial for the mentors to be local Ugandans so that students could relate to and look up to them, but they had to understand the Educate! vision and model. This latter point is crucial, as mentors interact with the other teachers at the schools and need to be able to share the Educate! story and experiential learning model. In effect, Educate! mentors play a role in transforming pedagogy and help increase the buy-in from teachers and administrators.

Given the importance of its staff, Educate! is now working to ensure that it can retain its talent. Staff attrition is around 10 % in 2012–2013, and the organization has been working to create clear career pathways and ensure top staff are being trained to step into roles of greater responsibility. Staff salaries are also competitive by industry standards.

Educate! also plans to tap into the growing Educate! alumni base. This pool of youth could serve as mentors or as "foot soldiers" to spread knowledge and awareness about the program. Indeed, having gone through the program themselves, they could serve as strong resource points for current students and offer guidance and counseling about developing the skills needed for post-secondary school opportunities. Some alumni are also already using their own funds to teach a condensed version of the program to others – so "paying it forward."

Challenges

Educate! has managed to successfully demonstrate its basic model and concept, but now faces some key issues as it starts to try to achieve scale. The majority of these concerns are specific to the life-stage the organization has now reached (for instance, retaining talented staff, as discussed in the section above) and are pertinent issues if the model were to ultimately expand to other countries. However, one consideration – changing the perceived negative attitude toward entrepreneurship – is a broader issue that needs to be tackled.

Negative Perception Toward Entrepreneurship

A recent study remarks that there is often a pervasive negative attitude toward entrepreneurship in many African countries, with society often valuing other "professional" courses or career paths (Omidyar Network, 2013). Indeed, Bulayev has reported the same experience in Uganda: there is often resistance from families if their children want to pursue entrepreneurship. Educate! hopes to counter this atti-

tude by quantifying the impact created and developing a brand synonymous with job creation and improved livelihoods.

Financial Sustainability

As discussed in the "Costs" section above, the organization realizes that its current cost structure doesn't permit scale-up across the country. Given that the concept of the model has now been tested, with efforts underway to quantify its impact, Bulayev and his team have now prioritized trying to reduce the operation costs without compromising quality. For instance, this could involve schools contributing a greater portion of the costs or mentors working in a greater number of schools.

Future Priorities

Educate!'s 10-year vision is to reach 100,000 students across 1000 schools and to be able to replicate the model in at least three other countries. The Educate! model has already been adapted and replicated by AfricAid's Kisa Project in Tanzania, and there is significant potential to replicate key components of the model in other countries in Africa or elsewhere.

It is clear that achieving this level of scale-up will involve increasing the cost-effectiveness of its programs. As mentioned earlier in this analysis, schools will need to be required to pay a growing portion of the costs in the coming year. The results from the RCT could help Educate! garner this financial support, but it will be interesting to see whether this change will have an impact on the take-up and popularity of the program.

However, the revenue from schools will not be sufficient to cover the bulk of the operating costs incurred and ensure financial self-sufficiency. The flagship Educate! Experience program is currently offered free to all students, but in time, one option may be to start charging a small fee; a potential option could even be to structure this as a "loan" which the student repays upon graduating and earning an income. Price differentiating between different income quintiles could be also another option. Indeed, Educate! is already in the process of testing different price points and exploring the optimum cost to charge for both TAM and the Educate! Experience.

It may also be helpful to explore whether the different components of the model could be implemented in a modular fashion. For instance, the student-run business clubs and the TAM program could be tailored as stand-alone programs and may be more suited to scale-up and replication. Meanwhile, the Educate! Experience could be possibly offered as a complementary program at certain schools.

Ultimately, empowering youth and fostering the skills required for effective entrepreneurship are particularly crucial in today's climate, given the skills shortages and elevated rates of youth unemployment. While further adjustments may be needed to increase the cost-effectiveness of the model – which in turn may involve making pieces of the program more modular – the vision and core principles of the Educate! model have the potential to be replicated in not only other parts of sub-Saharan Africa but also in other developing countries.

Case Study 2: Empowering Girls in Rural India Through Soccer: Yuwa[3]

Yuwa: Kicking it New School is an example of a program catering to the needs of out-of-school youth and uses an alternative model to foster soft skills. The Yuwa core program uses soccer as a mechanism to foster confidence, teamwork, and leadership in girls. Importantly, Yuwa's teams are self-initiated and peer-led, with girls leading the organization of their teams. Importantly, the program is also designed to encourage financial saving and planning, with the participants encouraged to plan and budget for the gear and equipment they need.

In addition, the program also uses sport as a vehicle to encourage peer mentorship. Girls are encouraged to train younger players and placed in roles of respect and authority. Importantly, this not only shifts perceptions about the role and capabilities of women, but helps build self-worth and confidence that is carried over to other aspects outside soccer.

Below is the detailed case study of the program.

Employment does not only require technical skills specific to a particular job but also so-called "soft" or "behavioral" skills that help people find, secure, and retain employment in the long term. These skills include capacity for management, entrepreneurialism, ability to problem solve, dependability, commitment, and many others (Srivastava & Khare, 2012). An analysis of the skills in demand for employment in South Asia suggests that Indian employers value employees that possess critical thinking, leadership, communication/social interaction, and time management skills (Srivastava & Khare, 2012). Unlike technical skills, youth accumulate these competencies from a wide variety of sources such as family life, school, extracurricular activities, etc. Youth that miss out on opportunities to develop these soft skills may struggle to secure meaningful employment.

There are different approaches to fostering these skills in youth, but sports are attracting attention as one vehicle for empowering participants with soft skills. Sports are an evolving platform for international development initiatives (UK Sport, 2011), and the UN has passed a resolution endorsing sports as a broad tool for social development that can be leveraged to empower and educate women and girls (United Nations, 2012a, 2012b).

One program following such an objective is Yuwa, a fledgling nonprofit organization based in rural Jharkhand. Yuwa aims to empower young girls through the practice of soccer in one of the toughest environments for Indian women. Jharkhand is one of India's newest states and was created to return land to Bihar's tribal populations in 2000 (Ministry of Health and Family Welfare, Government of India, 2012). Female literacy has only reached 56.2 % – although this is even lower in rural areas and among scheduled castes and tribes (Census, 2011) – and 55.7 % of women in Jharkhand experience early ("child") marriage (UNICEF, 2011). For

[3] Summarized from Brown, E. J., Acedo, J. M. R., et al. October 2013. Pathways to Employability: Part II: Case Studies of Six Innovative Programs to Enhance Skills for Employability in Youth. *Results for Development Institute.* Accessible from: http://r4d.org/knowledge-center/innovative-secondary-education-skills-enhancement-isese-phase-ii-research

many families, educating female children is a low priority, and girls are expected to spend their time contributing to housework and conducting other physical labor. Leisure time is rare for girls, and even when they have it, few, if any, opportunities exist to play organized sports.

In this environment, Yuwa works to bring girls out of social isolation, fight gender inequality, and empower girls with the necessary skills to shape their own futures. Yuwa uses soccer as a platform to bring girls together in a supportive and safe context and ultimately strives to increase their school attendance and equip them with the skills to pursue further studies, secure employment, and empower them in everyday life.

Program Overview

Franz Gastler founded Yuwa after moving to rural Jharkhand in 2009. After working in New Delhi, he had spent some time in the area working with another nonprofit organization and teaching English. Unimpressed with the quality of the nonprofit organization operating in the region, he planned to launch a holistic youth-focused organization. Yuwa's core soccer programming took shape when local girls asked for an opportunity to learn soccer.

Soccer Program

Unlike a typical soccer program, Yuwa's soccer teams are self-initiated, peer-led, and designed to encourage financial saving and planning. These are important design principles as they encourage the core skill set needed for employment. When a group of girls expresses interest in starting a team, Yuwa poses three questions to them: (1) How often do you want to play? (2) What do you need to play? (3) How can you get what you need? The first question establishes the girls' commitment to the sport. They usually answer that they want to play every day, which is what Yuwa encourages. The other two questions initiate a longer process that encourages participants to plan and budget for the gear that they need.

Yuwa requires that girls save a portion of the money needed to obtain the gear necessary for a team, namely, sneakers and soccer balls. Yuwa subsidizes the gear and requires regular attendance at practice for girls to be eligible for the gear. For example, a player must save 100 rupees (under US$2) and attend practice for 6 months (playing at least 20 days a month) to receive a pair of sneakers. Although a small number of girls may take on work at local farms to earn additional income, most girls save the few rupees that their parents provide them every week for candy and basic supplies. They forego purchasing these products in order to save for their gear. Through this mechanism, players mentally invest in their team from day one.

In addition to encouraging financial planning and independence, the program focuses on leadership by encouraging peer coaching. As girls regularly attend prac-

tice and advance through the program, they are charged with training younger players. This places young women in a position of respect and authority – something that young girls in Jharkhand may not see on a regular basis. This not only helps improve their perceptions about the capabilities of women but it may also encourage reluctant new players to join the program. Girls who have never played soccer before may be nervous to try, but working with older girls whom they already know or recognize helps overcome this barrier. Finally, this aspect of the program helps build the self-worth and confidence of the peer coaches. Some even rotate through the program in Mumbai and have the opportunity to coach young children in Dharavi; this journey would have been inconceivable to most of Yuwa's participants before joining the program.

Box 6.1: Differences Between the Jharkhand and Dharavi Programs
Yuwa's soccer programs in Jharkhand and Dharavi follow the same basic program design, but have a few differences. Whereas Yuwa provides direct daily oversight to the sites in Jharkhand, a local partner organization and young coaches who have risen through the program in Jharkhand oversee the program in Mumbai. Yuwa is not currently running its Kicking It New School education initiative in Dharavi (see below).

The demographics of participating families differ between the two sites. Yuwa finds that families in the slum are more financially secure than families in rural Jharkhand, and girls in Dharavi are usually able to quickly generate the money needed for gear. Girls in Dharavi are also much more likely to be enrolled in and regularly attending school, and the local government has taken small steps to support the program. For example, the local authorities installed lights around the soccer field to make the space safe for the players. In contrast, the Government of Jharkhand has demonstrated limited interest in Yuwa.

Kicking It New School

"Kicking it New School" is the newest component of Yuwa's work in Jharkhand. It is in the early stages and intends to provide supplementary education through technology. Yuwa uses five Nooks (an e-reader marketed by Barnes and Noble) and 600 Urdu-language lessons freely downloaded from Khan Academy to train 11 peer educators. Yuwa has categorized and documented the 600 available videos by level and subject. The peer educators are generally between 12 and14 years old and will be "guides on the side" for the subsequent batches of children to use Yuwa's learning resources. The program will run after the regular school day, and the Nike Foundation has provided a grant to build an appropriate classroom to house this program.

Once the program is fully initiated, one peer educator will work with four girls at a time. After the girls watch the day's videos, the peer educators will lead them through an interactive supplementary lesson designed by Yuwa. The organization

hopes to build classroom curiosity, transition girls from being passive learners to active ones, and raise participating girls' math and science levels by two standards. The program's use of e-readers, and perhaps eventually tablet computers, familiarizes girls with technology – an opportunity that many low-income girls lack and a necessary experience for many of the jobs available to youth (Campbell, Mehr, & Mayer, 2013). The program is still starting up in Jharkhand, but if carried out successfully, it could be expanded to Dharavi and other sites.

Costs

Yuwa operates at a modest scale with low costs. Thus far, Gastler and his cofounders have invested US$32,000 of their personal funds in the organization. In addition, Yuwa has received small philanthropic grants and individual contributions.

The basic soccer and education programs incur minimal expenses. The tablet program, for instance, costs about US$13 per student per year, assuming each Nook lasts for at least 3 years. The soccer program relies on the free use of fields and donated jerseys. Yuwa purchases shoes and balls from local retailers drawing from its own funds and the predetermined contributions of the players.

Notably, the organization does not pay for full-time staff. Gastler and a rotating international volunteer work with the program full time, but all other staff members are part-time coaches and unpaid volunteers; six volunteers reside in the United States and provide back-office support such as administrative and budget oversight. Yuwa hopes to add two full-time staff members dedicated to fund-raising and mentorship in the future. Coaches are paid a small sum of 30 rupees per practice for their contribution. The coaches that are sent to the Dharavi program from Jharkhand receive 5000 rupees for 3 months of service and free accommodation. The organization currently has 11 coaches in total.

Over the last year, the organization has spent US$100,000, but most of this was discretionary expenditure. For example, the organization tested a pilot nutrition program to improve participants' diets.

Impact to Date

Yuwa's vision is for every girl in the program to become empowered to steer her own life, similar to other youth sports programs (Doherty, 2011). The organization struggles to effectively measure and track progress toward this goal but is open to the adoption of new tools and strategies to better quantify its impact. Part of this challenge lies in the organization's youth. So far, no girls have fully graduated from the program; once they do, Yuwa will have the opportunity to track their progress in educational attainment, delayed marriage, and employment.

Success Factors and Lessons Learned

Yuwa's experience in launching its initiative offers lessons for designing similar programs to develop soft skills in young girls through athletics. These success factors are discussed below. However, given the organization's small-scale and nascent results framework, "success" is an early term noting Yuwa's impressive achievements in launching and sustaining this program in an incredibly challenging cultural environment. Long-term success will be determined in the years to come as more girls complete the program and their progress is measured.

Contextual Factors for Success

Establishing Trust in Rural Jharkhand

Families in Jharkhand are reluctant to allow their daughters to join Yuwa's soccer teams on two accounts. First, female children perform valuable household labor, and mothers in particular lose support when daughters spend time away from home. Second, playing soccer is not a traditionally "female" activity and may be viewed as culturally unacceptable. To overcome these cultural barriers, Yuwa had to establish a significant level of trust and credibility with the community. Gastler's ongoing presence in the areas in which Yuwa works and his repeated engagement with families were critical factors in building Yuwa's reputation. His earlier work in the area, such as teaching English in a local government school, was likely contributed to demonstrating his commitment to the community.

General Factors for Success

Demand Driven

Yuwa's soccer program requires girls in poor areas to spend time away from their families, coach younger children, and save money. None of this would be possible if girls did not want to participate in the program. Yuwa's initial response to participants' requests for a soccer program and its requirement that new participants initiate their own teams ensures that participants are invested in the program. In the places where Yuwa operates, there are no other organized activities that offer young girls a fun, supportive, and constructive way to spend time.

Peer Coaching

Although the effects of using peer coaches have not been formally measured, there are indications that peer coaches help draw reluctant newcomers to the program and give younger participants role models. Peer coaches also directly gain leadership

and management experience themselves. By placing young women in positions of authority and respect, Yuwa is taking an important step in fighting gender stereotypes in rural Jharkhand. Evidence from other social programs suggests that exposing youth to female leaders can increase girls' educational attainment (Beaman, Duflo, Pande, & Topalova, 2012).

Role of Volunteers

The use of unpaid volunteers controls Yuwa's costs and allows the local community to help shape the program. By eliminating staff expenses, the organization's core expenditure is simply the infrastructure, materials, and supplies for its education and soccer programs. This is particularly valuable for the soccer program as it allows youth to take on peer coaching activities, thereby filling leadership roles with members of the local community.

Dedicated Founder

Yuwa would not have succeeded without Gastler's dedication to the girls of rural Jharkhand. Living in Jharkhand, engaging with the community, investing personal funds, and relentlessly collecting information and best practices about soccer were critical steps in getting Yuwa's soccer program off the ground. His drive to bring the program to fruition is its ultimate success factor.

Challenges

Yuwa has encountered a few challenges in both its soccer and educational programs. Some of these challenges, such as resistance from families and lack of access to the Internet, may be particularly significant in rural Jharkhand, but nearly all of the challenges summarized below are relevant considerations for expanding the program to other parts of India.

Resistance from Families

As noted earlier, poor families in Jharkhand hesitate to allow their daughters to spend time away from home, especially to pursue a traditionally male activity. Yuwa has patiently worked with girls and their families to overcome this resistance, but the organization will likely continue to face this problem among prospective entrants to the program for the foreseeable future.

Educational Practices in Traditional Schools

Although Yuwa tries to foster academic inquisitiveness and active learning in its Kicking it New School participants, youth struggle to balance these traits with the rigid expectations of their regular schools. While they may be encouraged to ask questions at Yuwa, students may be punished for doing the same in school.

Securing Space

Playing soccer requires space, and currently, Yuwa divides all of its teams among three sites in Jharkhand and one site in Mumbai. As the program grows, it will need to find more dedicated space for soccer practices. Finding space has thus far been most difficult in Mumbai, but as the city of Ranchi (capital of Jharkhand) grows, property developers are buying plots of nearby rural land. Yuwa runs its Jharkhand practices on abandoned fields at no cost, but if the situation changes and Yuwa has to rent land, then the organization's lean cost structure will be compromised.

Designing Practices

With no background in soccer, Gastler had to invest significant time learning about the sport, finding model practice sessions, adapting them to suit Yuwa's program, and developing coaching methodology. Although this was a challenge in the beginning, the base of knowledge that Yuwa has developed can be used to more easily start programs in the future.

Technology and Access to Reliable Internet

Technology and the Internet are the centerpieces of Yuwa's Kicking it New School initiative, but both pose difficulties to the organization. The Nooks that Yuwa relies on to run Khan Academy videos are ill-suited for playing video files and cannot run the complementary lessons available on the Khan Academy website. Alternative technologies, such as tablet computers (rather than e-readers), would be more suitable – but also more expensive – for this purpose. The organization's Internet access also limits how efficiently it can update each reader with new materials.

Capacity for Measuring Impact

Measuring the impact of its programs is important for Yuwa as it plans to grow and seek further support, but its current capacity to do so is weak. Although Yuwa's volunteer-run model enables its low-cost structure, the lack of specialized staff limits the organization's ability to assess its impact. Since Yuwa has initiated an

innovative program, it likely needs newly designed tools and strategies to measure the impact of both its soccer and education programs, especially if its ultimate goal is to empower young girls. To measure progress toward this goal, Yuwa must either bring new talent on board or seek help from third-party groups.

Reaching Scale Through Replication

Yuwa has immense potential for scale through program replication by other groups, especially for its soccer program. Since the soccer program only runs for part of the day (before or after school), and can be managed in-part through older participants, any youth organization willing to learn the ins and outs of soccer can work with Yuwa to replicate its model. If Yuwa were to directly expand into new areas, then it would again encounter some of its start-up challenges, such as capital costs and resistance from the local community. Instead Yuwa can build partnerships with local organizations that have been running successful youth programs and maintain strong ties with the local community and equip them with the knowledge and tools needed to start a girl-centric soccer program.

If Yuwa systematically documents its practice and training schedule, coaching methods, approaches to encourage saving, etc., then it can share these resources with other organizations dedicated to empowering girls. The organization is just beginning this process. Yuwa is planning to share online videos of their on- and off-field activities through the "Yuwa Virtual Academy."

Future Priorities

Yuwa's soccer and education programs are a promising way to build the confidence of young girls and equip them with the soft skills necessary to perform well in school, secure and retain meaningful employment, and direct their own lives. If Yuwa can develop and implement an evaluation plan to regularly assess its impact and adapt as necessary, then it can improve its reach in Jharkhand and beyond. The program's low-cost structure and limited barriers to start-up create the potential to test the model in other organizations and scale-up through replication. Although Yuwa has encountered some challenges in launching its initiatives, the knowledge that they have gained in working through these obstacles can be synthesized and strategically disseminated to reduce the time needed to launch subsequent programs.

Conclusion

The value of soft skills in fostering livelihood and lifelong learning opportunities is clear. Close links between employers and educators can help ensure that relevant, quality skills are being instilled. Indeed, the two case studies in this chapter illustrate innovative approaches to foster soft skills in youth using a mix of methods. It is clear that in-school and out-of-school mechanisms are equally valuable and necessary in fostering these lifelong skills, vital to not only gaining employment but allowing youth people to thrive and grow as individuals. Indeed, soft skills are increasingly becoming the hard skills of today's workforce.

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References

African Development Bank. (2012). *African Economic Outlook,* 2012.

Beaman, L., Duflo, E., Pande, R., & Topalova, P. (2012). Female leadership raises aspirations and educational attainment for girls: A policy experiment in India. *Science, 335*(6068), 582–586.

Brewer, L. (2013). *Enhancing youth employability: What? why? and how? Guide to core work skills*. Geneva, Switzerland: International Labour Organization. http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_213452.pdf Accessed on 28 June 2016.

Bwambale, T. (2012, December). *Uganda has the youngest population in the world.* http://www.newvision.co.ug/news/638120-uganda-has-the-youngest-population-in-the-world.html. Accessed on 28 June 2016.

Campbell, K., Mehr, H., & Mayer, B. (2013). *Education technology in India: Designing Ed-Tech for affordable private schools*. Bangalore, India: IDEX.

Casner-Lotto, J., & Barrington, L. (2006). *Are they really ready to work? Employers' perspectives on the basic knowledge and applied skills of new entrants to the 21st century US workforce*. The Conference Board, Inc. http://www.p21.org/storage/documents/FINAL_REPORT_PDF09-29-06.pdf. Accessed on 28 June 2016.

Doherty, C. (2011). Measuring the impact of sports on youth development. *USAID*. Available at: http://blog.usaid.gov/2011/03/measuring-the-impact-of-sports-on-youth-development. Accessed on 9 Mar 2013.

Lippman, L., Ryberg R., Carney R., & Moore K. (2015). Workforce connections key soft skills that foster youth workforce success: Toward a consensus across fields. *Child Trends*. http://www.fhi360.org/sites/default/files/media/documents/workforce-connections-soft-skills-small.pdf. Accessed on 28 June 2016.

Ministry of Health and Family Welfare, Government of India. (2012). *Jharkhand*. http://www.mohfw.nic.in/NRHM/State%20Files/jharkhand.htm. Accessed on 9 Mar 2012.

Mourshed, M. (2013). *Education to employment: Designing a system that works.* McKinsey & Company. http://mckinseyonsociety.com/downloads/reports/Education/Education-to-Employment_FINAL.pdf. Accessed on 28 June 2016.

Omidyar Network. (2013). *Accelerating entrepreneurship in Africa: Understanding Africa's challenges to creating opportunity-driven entrepreneurship.* https://www.omidyar.com/sites/

default/files/file_archive/insights/ON Africa Report_April 2013_FInal.pdf. Accessed on 28 June 2016.

Population Census Data. (2011). *Population Census India 2011*. http://www.census2011.co.in/census/state/jharkhand.html. Accessed on 9 Mar 2012.

Results for Development Institute. (2013a). *Innovative secondary education for skills enhancement, Phase I synthesis reports.* Washington, DC: Results for Development Institute. http://www.resultsfordevelopment.org/sites/resultsfordevelopment.org/files/resources/Phase I - Synthesis Reports_1.pdf. Accessed on 28 June 2016.

Results for Development Institute. (2013b). *Pathways to employability: Part II: Case studies of six innovative programs to enhance skills for employability in youth.* Washington, DC: Results for Development Institute http://r4d.org/knowledge-center/innovative-secondary-education-skills-enhancement-isese-phase-ii-research. Accessed on 28 June 2016.

Srivastava, A., & Khare, M. (2012). *Skills for employability: South Asia*. Washington, DC: Results for Development Institute.

UK Sport. (2011). *Next step conference 2011: Promoting global partnerships for sports in development*. http://assets.sportanddev.org/downloads/uk_sport_next_step_reflection_report.pdf

UNESCO. (2012). *Education for All Global Monitoring Report: Youth and skills – Putting education to work*. http://unesdoc.unesco.org/images/0021/002180/218003e.pdf. Accessed on 28 June 2016.

UNICEF. (2011). *Child marriage UNICEF information sheet.* http://www.unicef.org/india/Child_Marriage_Fact_Sheet_Nov2011_final.pdf. Accessed on 9 Mar 2012.

United Nations. (2012a). *Sports as a means to promote education, health, development, and peace.*

United Nations. (2012b). *Global education first initiative.* http://www.globaleducationfirst.org/220.htm. Accessed on 28 June 2016.

Wilson-Ahlstrom, A., Yohalem, N., DuBois, D., Ji, P., Hillaker, B., & Weikart, D. P. (2014, January). *From soft skills to hard data: Measuring youth program Outcomes*. The Forum for Youth Investment. http://forumfyi.org/files/soft_skills_hard_data_0.pdf. Accessed on 28 June 2016.

World Bank. (2014). *The step skills measurement program*. The World Bank. http://microdata.worldbank.org/index.php/catalog/step/about. Accessed on 3 June 2015.

Chapter 7
Principles of Successful Skills Development Models

Michelle Engmann, Aarthi Rao, and Bob Adamson

The landscape of skills development models is markedly diverse, as exemplified by the case studies that this book explores in detail. Some models work to create improvements within the existing education system, while others offer an alternative method outside of the traditional system. Some models are implemented by just one organization (either private, public, or nonprofit), while many draw upon the strength of multi-stakeholder partnerships to improve their quality, relevance, and sustainability. Many focus on harnessing new technology while others focus on strengthening the human element (indeed, many do both at the same time). However, across all models, some key themes have emerged that help us understand how these models can be particularly effective in improving the quality and relevance of education and the skills imparted to secondary level students.

This chapter draws upon research findings in this area and looks at lessons learned from case studies. It uses a framework (Fig. 7.1, adapted from Adamson and Morris, 2014) to create a coherent overview of the program elements that were effective and that can be transferable to other contexts. The framework focuses on four interconnected dimensions: design, implementation, outcomes, and sustainability. Placing these dimensions is not intended to suggest a linear view of program processes; on the contrary, program processes, as demonstrated by the various case

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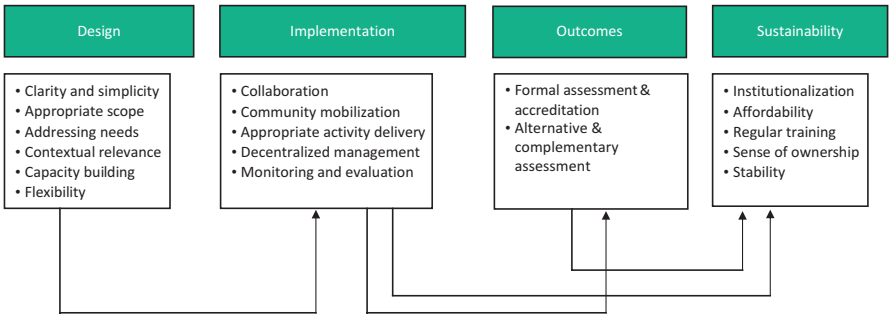

Fig. 7.1 Facilitators of effective programs

studies in this book, are complex and dynamic. The four dimensions are organized in this manner merely for conceptual convenience in teasing out the significant factors, as each of the dimensions has distinctive elements. *Design* refers to the planning stage; *implementation* is the program in action, especially in terms of learning processes; *outcomes* are the products of the program – what has or has not been achieved, either intentionally or unintentionally, quantifiable or non-quantifiable; and *sustainability* designates the capacity of the program to continue on a long-term basis, which also has implications for its potential to be scaled up.

In the latter stages of the chapter, we distil the various components of the four dimensions into five crucial aspects for the consideration of policy-makers and curriculum designers when seeking to upscale the innovations or to design their own initiatives.

Design

Clarity and Simplicity

In many formal curricula, the objectives relating to employability skills tend to be overcomplicated and in need of streamlining, according to delegates at a conference organized for policy-makers and other stakeholders (Results for Development, 2013). Among the programs examined through the Results for Development's research, the most successful models were those that articulate clear and simple objectives for their activities. Clarity and simplicity are important because they allow the objectives to be easily communicated to stakeholders. Devising appropriate program delivery and assessment of outcomes are also facilitated.

The objectives selected for a particular program reflect the values system underpinning it. Many programs seek to develop technical and non-cognitive skills in youth as preparation for the workforce. This development demonstrates a values system known as "social and economic efficiency," which views the main function of education as meeting the human capital requirements of a society. Many models highlighted in our study emphasize non-cognitive or life skills as complementary to

curricula based on traditional cognitive or technical skills, not only because crucial communications, teamwork, and accountability skills are valuable in themselves but also because these skills show promise in improving learning outcomes and employment success, particularly for disadvantaged students (UNESCO, 2012). For example, some models also focus on non-cognitive skills because they can have a direct impact on employment outcomes; Educate! (Chap. 6) is a student mentorship scheme that seeks to empower secondary school students in Uganda by developing their leadership and business skills so they can become effective entrepreneurs in their own communities. The program delivers this training in the form of a supplementary course in public and private schools in Uganda, accredited by the national government, which focuses on both non-cognitive and practical skills and emphasizes experiential learning. Youth are encouraged to develop and test an enterprise in their community; this provides them with a relevant skill set so they can become leaders and successfully enter the labor market. Some programs, such as *Education de Base* (EDB) in Chap. 4, also endeavor to foster whole-person development, which includes emotional, interpersonal, cognitive, and moral aspects. This emphasis matches the "individualism" values system that is concerned with enabling students to fulfil their personal potential (Morris & Adamson, 2010). However, whatever the values system that informs the program, simplicity in stating the program objectives is a virtue. It does not mean dumbing down of content: as the case study of the EDB program shows, rigor is vital, to ensure that the program is worthwhile.

Appropriate Scope

The objectives need to be realistic, taking into account the resources (human, financial, and material) that are available as well as of the capacity of the support systems to handle the strains imposed by the program. Prudence in this regard does not necessarily imply a conservative approach. Many of the programs studied in our research were successful because they found innovative ways (often using information technology) to facilitate the achievement of ambitious aims.

Addressing Needs

Successful programs address local or national needs. For example, many programs reviewed have an explicit strategy to target vulnerable or marginalized youth, particularly those that have been excluded from formal education for financial or geographical reasons. To reach rural populations, for example, the Lend-A-Hand (LAHI) program's strategy is to incorporate the Introduction to Basic Technology (IBT) program into rural government schools (see Chap. 3), and Yuwa has located its main soccer program in a rural village in Jharkhand.

One strategy to reach financially excluded students is to charge low or no fees for participating in a skills development program, opening up programs to youth from low-income groups. Educate! and Yuwa do not charge any fees for participation, and LAHI encourages only a small charge of 100 rupees (under US$2) a month. Evidence from Colombia suggests that subsidizing vocational training has employment benefits for disadvantaged youth, especially women (Attanasio, Kugler, & Meghir, 2011). The National Skills Development Corporation (NSDC) model is different given its scale, and most of its partner institutes charge students tuition; however, the corporation is lobbying banks to provide student loans with deferred payment plans to individuals pursuing technical and vocational education and training (TVET) in hopes of increasing access to TVET among low-income groups. Similarly, while the EDB program targets all middle school students in Senegal, it specifically reaches out to vulnerable children by working with Koranic schools, out-of-school children, and other at-risk groups.

Besides targeting low-income or marginalized groups, many programs also establish opt-in systems, sometimes accompanied by an application or a set of qualifying criteria, which allow them to target individual youth with specific characteristics. While this may deter some youth, programs generally seek participants that show some level of motivation or willingness to commit to the program, even if they do not have financial resources to contribute. For example, Yuwa requires girls to regularly attend practice and save money for their own gear. Educate! stipulates that students apply for the program and demonstrate basic personality traits that will help them succeed in their courses. LAHI, however, takes an alternative approach. While students do not need to submit an application to enroll in the IBT course, they must transfer into the school division offering the program. This small barrier ensures that participating students demonstrate interest in the course, while not excluding students who fail to meet predefined criteria. Creating an opt-in system encourages buy-in from participants and helps organizations with limited resources (that are not seeking to reach *all* youth in a particular place) screen for youth who will most benefit from their programs.

Another area of need that programs can address is that of the demand side. However, one critical finding was that none of the 12 focus countries studied by Results for Development Institute under the ISESE project has a systematic internal assessment of skills gaps at the country level. The lack of available data on the supply of skills compared to demand demonstrates the need to conduct further in-depth, country-specific research before any skills development strategy can be truly effective on a large scale. Individual industry or geography-specific training initiatives may succeed in training students for particular jobs, but the region needs models that can prepare students for work more broadly at the secondary level; this will require a rigorous assessment to provide a body of evidence on the broader skills students lack when they enter the workforce. India's NSDC has begun to undertake targeted analyses of skills gaps at the industry, state, and district levels, suggesting that, particularly in large countries, an industry- or geography-specific approach to skills development may be a more effective tactic. However, given that employment can shift rapidly and frequently in today's dynamic economy, a broader and more

inclusive skills gap analysis may be better suited to determine how to better prepare youth for an ever-shifting employment landscape.

Building on findings from a skills gap analysis and inputs from employers, some countries may need to rethink their general education curriculum to ensure that students at the secondary level acquire the foundational skills they need to succeed in any field of employment. Specifically, if educators can create multiple pathways to employment through articulation across traditional academic and vocational curricula, they can provide students with a stronger and more flexible set of the competencies that will make them employable (Wang, 2012). In some countries, such as Vietnam, this would help to counter the surplus of low-skilled workers by increasing mobility among those who ultimately choose the vocational stream. In addition, as vocational training programs become more flexible, they can allow students to enter and exit at various points along the work spectrum. This would ensure that programs are demand driven and responsive to the fluctuating needs of the workforce.

Contextual Relevance

A program will be effective only if the design takes into account the particular characteristics of the context in which it will be delivered. These characteristics include sociocultural, political, infrastructural, pedagogical, and institutional factors. Sensitivity to sociocultural factors is shown by the program run by the Kanjanapisek Royal Goldsmith College in Thailand, which enjoys strong support from the communities it reaches because it not only creates jobs but also targets an industry that preserves an artistic element of national heritage.

Political factors might involve alignment with local or national government priorities, which was a strategy deployed by India's Sikshana Foundation. Infrastructural factors include existing channels for internships and full-time employment. For instance, the LAHI program employs local tradesmen as instructors, and all of the programs organize site visits to markets and workplaces to introduce students to work environments and potential employment opportunities. This exposure can help youth choose a career path and better appreciate the skills that they need to hold a job. Pedagogical factors encompass teachers' beliefs and practices about learning and teaching. These are not static and can be further developed, provided that the new demands of an innovative program fall within teachers' capacity to acquire new beliefs and practices. The same is true of demands placed upon an institution—they must be within the scope of the institution as a learning community to master (Adamson, 2011). The innovations inherent in the majority of programs under review required teachers and institutions tasked with implementing or managing them to acquire new skills, understandings, and practices, but the requirements were feasible.

Capacity Building

UNESCO (2012) identified the problem of poorly prepared teachers and trainers as a serious impediment to effective education and skills development. This gap in teacher preparedness highlights the importance of supporting models that improve not only on the structure and content of secondary education and training programs but also on teachers' and trainers' knowledge and readiness to deliver the content effectively.

Teacher training models in Africa and Asia are beginning to recognize this important shift and have begun to focus on teacher preparedness in order to improve learning. Especially noteworthy is an emphasis on upgrading traditional teaching methods, such as lectures and rote memorization, which may prepare students for examinations but do not encourage them to apply knowledge in multidimensional ways or to retain it for the longer term. Many programs have begun to partner with governments to improve the quality of public school teachers. For example, the Sikshana Foundation provides ongoing pedagogical training and supplementary teaching and learning materials to promote active learning in public schools in four Indian states.

In addition to reforming teaching methods in general secondary education, it is just as critical to train trainers in technical and vocational education programs to ensure that students emerge employable with a well-rounded skill set. Here, employers and industry leaders must play a critical role in training trainers, whether by working directly with training institutes to improve trainers' capacity to effectively deliver curriculum or by lending employees to training institutes where they can serve as trainers on a temporary basis.

Likewise, research (e.g., Tong, 2005) demonstrates the importance of including the preparation of managerial staff in the pre-implementation stage of a program. Senior and middle management play a determinant role in how a group or an institution interprets a program and transforms it into implemented reality. Well-prepared managers facilitate and enrich the process; poorly prepared managers can subvert the best-intentioned program.

An important caveat regarding the preparation of teachers, instructors, mentors, and managers is that such training should not be framed in terms of a deficit on the part of those receiving training. As noted at by Results for Development:

> … there is a danger of demonizing teachers by placing the problems of poor outcomes on their shoulders. Instead, emphasis should be placed on empowering teachers. … Teachers could greatly benefit from professional development resources and support, such as an online portal to share lessons plans or learning tools, or a professional support group, where they can share problems and discuss solutions. (Results for Development, 2013, p. 3)

Flexibility

Plans need to take account of the fact that circumstances change: contexts of implementation vary, budgets can be boosted or reduced at short notice, key officials might leave, and unforeseen opportunities or challenges arise. The Idara-e-Taleem-o-Aagahi (ITA) TVET program (see Chap. 3) shows how the option to modify the management and curriculum content enabled local implementers to ensure that the program suited the local conditions.

Implementation

Given clear, relevant, properly resourced, flexible plans, implementers can be in a strong position to run effective program. This in turn is enhanced by inclusivity, appropriate pedagogy, and robust management structures.

Collaboration

Addressing the often difficult choice between work and education, some innovative models have begun to integrate vocational and workplace learning at the secondary level, providing an example of how to prepare students for the workplace while still ensuring that they continue to acquire general academic skills. In many cases, such workplace learning also lets students earn while they learn, helping to counter the financial constraints facing many students who cannot afford to take time away from the workplace to pursue their education. Finally, such programs also improve students' chances of finding employment after they finish school, as they build relationships and professional networks through internships and apprenticeships.

Workplace learning models have been shown to be particularly successful when employers take an active role in students' trajectory, committing to supporting them throughout the education-to-employment continuum (Mourshed, Farrell, & Barton, 2012). One such program is the Kanjanapisek Royal Goldsmith College, which provides training in goldsmithing and jewelry making to young students who are also studying for academic qualifications. Building on an active relationship between local businesses and the college, it provides a combination of work-based learning, a competency-based curriculum, and job opportunities for students when they finish school.

Among all the critical stakeholders, participation of industry is critical for any skills development scheme aiming to improve the odds of labor market success for participants. Industry involvement can and should be solicited at both the micro-level (providing technical or financial inputs to specific programs or groups of programs, discussed here) and the macro-level (working with government to set standards and

create a framework for success, as discussed later in this chapter). Linkages with industry at the micro-level primarily manifest in three ways: programs involve employers in developing curriculum and course materials; they engage the private sector to help financing and sustainability; and they expose students to the world of work through internships and by providing information on career opportunities.

Many programs, including EDB, Educate!, and NSDC, take a deliberate approach to involving industry in the developing the content of their programs. EDB included employers in redesigning the middle school curriculum for Senegal to ensure that the curriculum captured skills needed in the labor market. Educate! brings in local entrepreneurs and industry experts to provide students with more hands-on, specialized training as they work to create their own businesses. NSDC, which works across a broad mandate, involves industry at every step. The corporation was founded in partnership with industry associations, industry sits on its board, and it encourages Sector Skills Councils to work with the private sector to create and validate training programs. EDB and LAHI also involve industry by giving youth direct exposure to local labor markets.

Finally, many programs benefit from direct or indirect resource support from the private sector. In-kind donations such as the discounted utilities that companies supply to EDB's ICT-enabled schools benefit organizations by granting them additional expertise and financial support. Additionally, scholarships provided by the private sector foundation established by EDB are examples of how industry can provide direct financial support.

Employers can provide critical inputs not only at the program level but at the national level as well. One approach is for governments to create incentives, such as tax breaks, for employers to participate in programs that integrate industry needs with training provision; this can ensure that students are getting appropriate skills and workplace training that will lead to jobs. This applies to industry involvement on several levels; industry can consult on qualification frameworks, train trainers at skills development programs, donate equipment, and offer internships/apprenticeships to students alongside their classroom training (Dunbar, 2013).

This type of industry partnership can be formalized: India's NSDC supports private sector skills development initiatives by providing an investment vehicle and a supportive policy framework and aligned accreditation system. The NSDC has developed highly relevant programming through its strong partnerships with industry leaders, its wide range of flexible funding structures, and its responsiveness to national labor market needs. However, the NSDC does face challenges in leveraging available funding and ensuring quality across its partnerships; these demonstrate the difficulty that national-level skills development programs may face when they attempt to balance quality with scale (Chenoy, 2013).

Community Mobilization

Many of the most effective skills development models we identified in our study relied on the resources and commitment of a variety of stakeholders. Effective public-private partnerships (PPPs) give innovative models even more impact and sustainability when they are introduced into an existing system to build upon and improve the efficiency of established institutions. In these partnerships, a clear mandate from both the public and private sectors is crucial: each side must have a clearly defined set of both responsibilities and benefits to make the partnership effective. The public sector must provide the regulatory framework, infrastructure, and a long-term commitment of support. The private sector must provide managerial support and technical expertise and be responsive to government needs. Both sides must be flexible and participatory in collaborations.

While strong PPPs can establish effective and sustainable models, they are even stronger if they involve a wider variety of actors, including educators, employers, nongovernment organizations, and community-based organizations. Beyond making the programs more sustainable, both financially and institutionally, such multistakeholder partnerships allow programs to be embedded in local institutions and lay the foundation for long-term operations and scale-up. Community and government groups can provide important feedback about what aspects of a program are most relevant and sustainable in a particular area, and their involvement can build credibility in the program itself.

Community level buy-in is particularly important for programs directly engaging with small communities. Yuwa's program creates a space for girls to do something that they have never done before in rural Jharkhand; generating radical behavior change in conservative areas cannot occur out of the blue. For families to allow their daughters to participate, Yuwa had to spend significant time establishing trust with community members. LAHI, which operates on a larger scale but collaborates with individual rural schools, also takes deliberate steps at creating buy-in with community members, including engaging local entrepreneurs as instructors. It also requires schools to apply into the program and, in doing so, stipulates that they pass resolutions with school management and parents' associations endorsing the IBT course. Enforcing such practices requires school officials to commit to and advocate for the program from the beginning.

LAHI is an excellent example of how a program can work within the existing formal secondary education system to increase the sustainability and scale of the intervention. Similarly, Educate! also works within existing schools, and its entrepreneurship curriculum has been adopted into the Ugandan national curriculum. EDB employed a top-down method to reaching national scale, providing technical assistance to an initiative that was conceived and implemented in full by the Senegal education ministry, allowing for an even higher likelihood of sustainability, as government buy-in was explicit from the start. In this case, the government was a key decision-maker from the start, and the government's commitment to the program unlocked large amounts of funding, enabling large-scale rollout.

LAHI, Educate!, and EDB are also examples of programs that have succeeded in having their courses officially integrated into state- and national-level curricula, further legitimizing and increasing the impact of these programs. Government recognition is particularly valuable in countries with a large number of unorganized private sector skilling programs that attract students and employers with the promise of quality, but which may or may not actually offer useful courses.

Appropriate Activity Delivery

Programs in the study used long-standing and innovative means to deliver the activities to the students. Formal schooling and established pedagogical approaches have the merit of being linked to systemic structures and drawing upon tried and tested educational practices. Informal and innovative approaches can tackle problems that arise from systemic rigidity and pedagogical stasis.

As an example, Yuwa empowers young girls in Jharkhand, India, to attend school more regularly, excel in their studies, and take control of their future by creating an environment of support and encouragement through soccer teams. Within the team environment, Yuwa works with girls to build self-confidence, a strong work ethic, and a sense of community; it also institutes a peer-led tutoring system using tablet computers and Khan Academy software.

While for some programs introducing an innovative new software or technology is an *end,* for the successful programs, it is used rather as a *means* – a tool to enhance core objectives. In both academic and technical and vocational education, new ICT interventions can help a wide range of education stakeholders to expand their resources and better transmit important skills. The most marked example of this is using technologically driven tools to help teachers broaden and deepen their teaching methodologies; these tools can offer support and materials to teachers who may not otherwise have the time or resources to access them through traditional means. For example, the EDB program created a professional development portal to provide a collaborative online space where teachers share teaching methods and materials to collectively enhance their capacity.

New technology has also enabled teachers and schools in particularly rural or poor areas to access and use effective curricula, increasing the capacity and expertise of programs whose resources may limit their ability to access up-to-date materials and training. For example, the Giving Online Access to Learning program in Cambodia enables vocational training centers in rural areas to access e-content via live-streamed or downloadable videos, allowing access to modules and teaching methods that local trainers are not able to provide. Using innovative ICT to impart skills and competencies through multiple formats and learning experiences not only enhances knowledge building but also motivates students to become self-learners – a skill identified as highly important to employers in South and Southeast Asia. In fact, studies on how to effectively develop critical non-cognitive skills often include an emphasis on *how* students are learning.

For example, Cisco Systems (2010) found that active and learner-centered teaching methodologies led to students learning more of the content being taught and also improve their higher-level critical thinking and analytical skills and their ability to absorb and process new concepts and skills. Within the classroom, teachers can use e-learning tools to deliver content to students and then facilitate complementary activities to enhance their absorption of knowledge. To take another example, South Africa's Mindset Learn project produces high-quality e-content that is available online, on television, and on DVD; teachers use it to provide contextually relevant and up-to-date content and to lead corresponding pedagogical activities alongside the e-content and after it is delivered.

The learning can also happen outside the classroom, where programs and centers based outside of schools deliver supplementary after-school learning opportunities. For instance, the Intel Learn Programme in India provides students with the opportunity to participate in technology-driven after-school projects focused on community improvement; they simultaneously build ICT, teamwork, and problem-solving skills in addition to developing a strong sense of community ethics. Similarly, Agastya Mobile Science Labs deliver complex science experiments to schools around India in minivans, where possible making use of common and locally available materials so their experiments can be replicated after the van has left. In some cases, they also use more elaborate tools such as working models of the solar system, which would otherwise be unavailable to the schools and their students.

Decentralized Management

The program studies in the ISESE project show the interplay of global, national, regional, and local issues. The macro-, meso-, and micro-level political, social, economic, historical, and cultural factors add to the complexity of providing training that is relevant to local needs yet aligned with policies and trends on a larger scale. Programs such as the EDB and the Sikshana Foundation (see Chap. 5) initiatives, for instance, have responded to the need to have management systems that are sensitive to this complexity, as well as to the multisectoral collaboration that is described above. Decentralized management delegates or devolves some of the responsibilities and decision-making to stakeholders with the necessary expertise and contextual knowledge at lower points in the overall structure. This allows for both top-down and bottom-up flows of communication, thereby facilitating local relevance and policy alignment.

Monitoring and Evaluation

Monitoring and evaluation permit programs to remain target oriented, thereby avoiding mission drift. The NSDC program, for example, requires partner organizations to define explicit targets that will be used to measure their success. Funding

might be withheld from those who fail, while those who are just falling short may be offered support.

Measuring and tracking impact is a critical way to establish the value of a program and continuously improve its work, and programs that prioritize this element are better able to attract investment and buy-in from various actors. Programs can use a variety of both quantitative and qualitative methods for tracking impact depending on the size and scope of their operations.

The most successful programs set quantitative output targets for itself, such as the number of schools or youth reached. For EDB and NSDC, which are working on a country-wide scale, reaching these targets – working in every middle school in the country and skilling 150 million people, respectively – is the primary measures of program performance. For the programs working on a relatively smaller scale, quantitative targets complement other measures of impact, understanding that education outcomes are often better reflected through qualitative methods. However, setting ambitious but achievable quantitative targets encourage program staff to work toward a defined goal.

Many programs also dedicate some time to assessing key stakeholders' impressions of their initiatives. Educate! conducts ongoing qualitative assessments of students' and mentors' performance, and LAHI maintains close communication with all parties involved in the IBT program. Collecting stakeholder impressions, which may reveal unforeseen benefits and complications of a program, is a dipstick approach to monitoring an ongoing initiative. Internal assessment tools, which can be regularly deployed to assess participant performance, can also give managers the feedback that they need to make adjustments to their programs.

Finally, measuring participants' outcomes is the most credible way for establishing a program's impact. LAHI and Educate! worked with their partners to implement impact evaluations. LAHI conducted an impact assessment and used the process to create an ongoing data monitoring system in its schools in Maharashtra. Educate! is undergoing a randomized control trial of its program. Impact evaluations are one of the best tools for attributing impact to a program, although they require significant expertise and funding to carry out.

Outcomes

Outcomes are significant for students in determining the benefits that they are to accrue from participation in a program. They are also important for the purposes of monitoring and evaluation as indicated above. The methods for assessing outcomes can be formal or informal and linked to accreditation systems or freestanding.

Formal Assessment and Accreditation

Formal assessment – through examinations, testing, and other "set pieces" – offers a standardized and, if well designed, valid and reliable measurements of student performance. It is thus a feature of a number of programs, including the ones run by the Sikshana Foundation and the Pratham Open School (see Chap. 2). Formal assessment, especially if it is associated with international or national accreditation, can add stature to a program, as it commands attention from the students, provides information for potential employers, and contributes hard data to program monitoring and evaluation.

However, there are a number of challenges to be overcome when it comes to soft skills, which are a key target of many of the programs under review. Most existing standardized achievement tests "miss, or more accurately, do not capture, *soft skills* – personality traits, goals, motivations, and preferences that are valued in the labour market, in school, and in many other domains" (Heckman & Kautz, 2012, p. 2, italics in original). The reason for this failure is that achievement tests are more concerned with measuring the candidates' manifested knowledge or reasoning rather than their soft skills. Alternative or complementary assessments are required.

Alternative and Complementary Assessment

Aside from, or alongside, formal assessment, useful summative and diagnostic information concerning a student's soft skills can be gleaned on an ongoing basis from portfolios, observations, reflections, performance in problem-based learning tasks, psychological indicator scales, and other types of assessment. These assessment mechanisms tend to be less intrusive than formal examinations or tests, but are often considered to be less objective and more unwieldy by end users. These concerns can and should be addressed so that the requisite information can be made available to stakeholders and valued as much as high-stakes formal assessments (Adamson, 2011).

Alternative and complementary assessment is evident in programs such as Educate!, which is developing a tool to measure personality traits and motivations toward leadership, entrepreneurship, and other desirable soft skills.

Dissemination

An important lesson to emerge from our research and conversations with stakeholders is that communication and sharing of information must become stronger at all levels if skills development programs are to be effective and responsive. As is true for multi-stakeholder partnerships, communication on new ideas and initiatives needs to be streamlined in several directions: between industry and the public

sector, between different ministries seeking to initiate competency frameworks, between trainers and employers, and between the government and the public at large. Skills development is too complicated a task to be conducted within only one ministry or one training provider; it must be discussed in depth and as often as possible to ensure that all parties share, and implement, innovative ideas.

Through our research, we have seen that there is no silver bullet and no specific set formula for success in the skills education area. Rather, there are a multitude of specific elements that can help make a program effective: specific objectives that target an unmet need, mechanisms that harness a new technology or resource, and strategies that create a nurturing environment for programs to successfully expand skills delivery. The strategy, therefore, cannot be to attempt to apply one specific model in all instances; instead, situational analysis must be applied to determine what elements of each program might fit individual scenarios and learn to adapt these to fit specific needs.

In order to facilitate this, lessons must be documented and shared, analyzing programs at the micro-level to determine which elements contributed to success, which may have failed, and how others can learn from this and potentially adapt these ideas to their own programs. We have seen instances when promising ideas are informally adopted in other regions, and it is important to foster such practices. Lessons could be shared via dedicated peer-to-peer learning networks that connect programs eager to support skills development reform in their region, such as the Center for Education Innovations, which fosters such sharing among non-state actors in the space. Such an effort could also be useful at the government level, similar to the Joint Learning Network for Universal Health Coverage; this network brings together practitioners and policy-makers from low- and middle-income countries to learn from one another, solve problems together, and collectively produce and use new knowledge, tools, and innovative approaches to accelerate national progress toward universal health coverage. A similar network may be helpful in the education space.

Sustainability

From the outset, programs need to pay attention to sustainability if they are to avoid the “flash in the pan” syndrome. Programs are sustained by factors such as institutionalization, financial provisions, ongoing training of personnel, a sense of ownership, and a stable environment.

Institutionalization

Institutionalization refers to embedding the innovation into the regular structures and practices of individual educational institutions and of larger systems of education. In this way, the innovations move into the mainstream from the margins.

Accommodation of innovations within existing structures and practices is a two-way process, requiring flexibility on the part of the innovators and the establishment.

For instance, a national curriculum could be able to integrate innovations if it is both flexible and articulated, thereby ensuring that the education and training system is both standardized and functional despite being inherently varied. One approach to this end is to establish a robust and clear national qualifications framework (NQF). Such a framework can provide education and training institutes with guidelines about quality and relevance and guarantee that levels of learning and training are standardized with recognized, transferable certifications. Many countries in Asia have developed or begun to develop NQFs with varying levels of success, but they face multiple challenges: conflicting demands between stakeholders, competing ownership among ministries, lack of industry interest and involvement, and difficulty articulating between academic and vocational streams. If NQFs are to succeed, it is especially important that they be seen as complementary to improving institutional capability rather than an easy way of reshaping institutions (Allais, 2010). However, to ensure that a workforce remains viable in the long term, it is crucial to establish a comprehensive NQF that can facilitate both workplace mobility and continual upskilling and lifelong learning.

Singapore's Workforce Skills Qualifications (WSQ) system provides a good example of a national framework that is helping to facilitate the skilling and upskilling of its workforce and promote lifelong learning. It sets standards for skills qualification levels in 30 different industries to ensure that training is of high quality and skills are transferable and to facilitate the recognition of key competencies. However, the Singapore example may prove difficult to replicate in larger countries where industry and competing interests are more varied and levels of education are less neatly aligned. These countries have approached these challenges to NQF development in different ways. For example, India is currently building and implementing a National Vocational Education Qualification Framework that spans secondary and tertiary levels to provide short-term training and certification options, and Thailand has developed a tertiary-level NQF that recognizes both academic and technical education streams as not mutually exclusive.

Indeed, the Thai case illustrates that while the integration of academic and technical/vocational curricula can play a key role in preparing a skilled workforce, academic and technical competencies can no longer be addressed separately. Thus far, most assessment and accreditation systems have been based on one stream or the other: the education stream through national certification boards and the vocational streams through individual certifications or, in some cases, a national-level NQF. To seriously address the issue of skilling for employability at the secondary level, an effective NQF must encourage some integration between the two streams.

Affordability

While clearly defining objectives that target unmet needs is one element that can help programs focus resources, another important element of success is employing targeted mechanisms that enable achievement of those objectives by ensuring sustainability and results-based activity. Often these mechanisms mean looking to previously untapped resources outside of traditional funding and management structures to diversify both financial and technical resources. The most successful programs seek innovative ways of enriching and sustaining activities through a variety of mechanisms employed strategically.

While many programs such as Educate! are enhancing skills development through existing schools, a large group of youth still cannot attend school because of financial limitations or other mitigating factors. Indeed, the UNESCO Institute of Statistics (2013) estimates that in 2011, 31.3 million youth aged 12–15 were not enrolled in lower secondary school. To address this problem, many targeted scholarship and voucher programs and other innovative financing initiatives are helping to counter demand-side constraints such as high costs or lack of community support for continuing education. This support is particularly critical for members of disadvantaged or excluded populations who would not otherwise have access to the education and training they need to find jobs and succeed in the workplace. For example, the Female Secondary School Stipend Program in Bangladesh aims to get more girls to attend – and stay in – secondary school and to challenge social norms and practices that adversely affect girls' education, such as early marriage and the exploitation of adolescent girls. The program makes stipend payments directly into the girls' bank accounts, providing an empowering experience as the girls learn money management and take control of their own education.

The organizations reviewed rely on philanthropic and public funding to maintain their activities. Some, such as LAHI and Yuwa, combine contributions from individuals with larger grants from private corporations and donor agencies; EDB and NSDC have relied on large amounts of funding from the US and Indian governments, respectively. Many of the programs have created revenue models that will help maintain cash flow: LAHI through fee-based community services and the NSDC through the returns it expects from loans made to private sector skilling centers. These are promising steps toward financial sustainability, but in the near term none of these organizations can maintain full operations without public or donor support.

The costs of running a skills development program for youth vary greatly by the type and depth of the program. Although each program model is unique in the type of service delivered and the resources needed to operate, the programs share a key cost driver: staff. The staff members charged with actually providing the skills development program to youth, whether they are vocational instructors, mentors, or teachers, constitute a significant portion of program cost. Investing in staff, however, has important payoffs for the quality of programs.

Each program must strike a balance between having a lean cost structure and having the staff and other resources it needs to perform well. Yuwa addresses this problem by running on volunteer time, but this is not a practical model to follow for programs requiring technically skilled staff in full-time positions. Another trade-off between extra staff and operating costs is the capacity to dedicate personnel to non-core activities such as fundraising and assessing program impact.

It is clear that further analysis of the cost and cost-effectiveness of promising programs is crucial, as this will allow a deeper understanding of the resources needed to replicate innovative components.

Regular Training

Sustainability requires programs to handle new situations and common employment issues such as staff turnover and promotion. Resilience in the face of changing circumstances can be enhanced by regular staff training, irrespective of their length of service and experience. Some programs employ online modes of delivery: the *Formation Rapprochée Intensive* component of the EDB program provides a good example of continuing professional development for teachers.

Sense of Ownership

Commitment to sustaining a program can be heightened by stakeholders at all levels being empowered with a sense of ownership. This sense can be fostered by various strategies discussed earlier in the chapter, such as contextual relevance, distributed leadership, multisectoral collaboration, and community mobilization.

Stability

Stability, like the sense of ownership, is a product of good design and management of implementation. Clarity of purpose; ongoing capacity building; flexibility; monitoring, evaluation, and adjustments; integration with mainstream structures; and reliable funding all contribute to stable programs.

Conclusion

Through our analysis of effective models described above and in consultation with key stakeholders, we have identified 19 components that contribute to effective programs, divided into four domains: design, implementation, outcomes, and

sustainability. These components can be distilled into five important ways that policy-makers, employers, and other key drivers of change can create a supportive environment to foster innovative skills development models at the secondary level (see Fig. 7.2). An analysis of the skills gap and contextual needs, a flexible curriculum that is articulated with other systemic components, varied and appropriate forms of assessment and accreditation, the involvement of industry and other key community stakeholders, and clarity in communicating goals, outcomes, successes, and challenges provide a platform for the selection, promotion, and implementation of worthwhile programs.

The guidelines derived from the project for developing a supportive environment and an effective program view initiatives as learning opportunities. Here, learning refers not just to the provision of education for students, but also to the requirement for all parties to form a learning community when undertaking innovative actions. The guidelines encourage policy-makers and curriculum designers to learn about the environment in which the innovations are to be introduced. They require different parties to learn new ways of conceptualizing, planning, implementing, managing, evaluating, and assessing.

One implication from viewing programs as vehicles for learning is the need for us to identify a relevant theory of learning to underpin the exercise. A dominant theory in recent decades that holds possibilities for our purposes is social constructivism. This theory of learning posits that we construct knowledge most effectively when it falls within our zone of proximal development (Vygotsky, 1978) or learning capacity and when scaffolded through social and collaborative interaction (Wilson & Yang, 2003). Thus, just as the learning demands of a new curricular innovation match the capacity of students, so the new facets of the innovation on stakeholders must also fall within their capacity to learn how to incorporate them. For students and stakeholders alike, the learning process is enhanced by clear communication

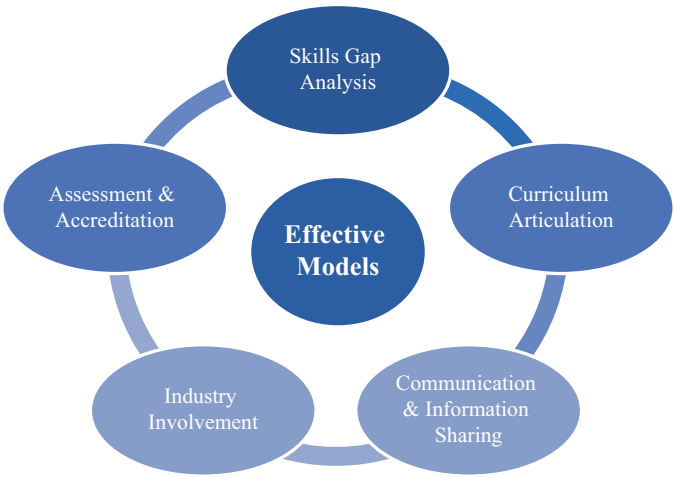

Fig. 7.2 A supportive environment for effective skills development strategies

and collaboration with others. In sum, feasibility and inclusivity are bywords for effective programs.

References

Adamson, B. (2011). Embedding assessment for learning. In R. Berry & B. Adamson (Eds.), *Assessment reform in education: Policy and practice* (pp. 197–203). Dordrecht, The Netherlands: Springer.

Adamson, B., & Morris, P. (2014). Comparing curricula. In M. Bray, B. Adamson, & M. Mason (Eds.), *Comparative education research approaches and methods* (Second ed., pp. 309–332). Hong Kong/Dordrecht, The Netherlands: Comparative Education Research Center & Springer.

Allais, S. (2010). *The implementation and impact of national qualifications frameworks: Report of a study in 16 countries*. Geneva: Skills and Employability Department, International Labour Center.

Attanasio, O., Kugler, A., & Meghir, C. (2011). Subsidizing vocational training for disadvantaged youth in Columbia: Evidence from a randomized trial. *American Economic Journal: Applied Economics, 3*(3), 188–220.

Chenoy, D. (2013). Public-private partnership to meet the skills challenges in India. In R. Maclean, S. Jagannathan, & J. Sarvi (Eds.), *Skills development for inclusive and sustainable growth in developing Asia-Pacific: Technical and vocational education and training issues, concerns and prospects* (pp. 181–194). Dordrecht: Springer.

Cisco Systems Inc. (2010). *Equipping every learner for the 21st century: A white paper.* San Jose, CA: Cisco Systems. Retrieved January 30, 2015, from http://www.cisco.com/web/about/citizenship/socio-economic/docs/GlobalEdWP.pdf

Dunbar, M. (2013). *Engaging the private sector in skills development*. London: UK Department for International Development.

Heckman, J. J., & Kautz, T. (2012). *Hard evidence on soft skills* (Discussion paper no. 6580). Bonn: Institute for the Study of Labor.

Morris, P., & Adamson, B. (2010). *Curriculum, schooling and society in Hong Kong*. Hong Kong: Hong Kong University Press.

Mourshed, M., Farrell, D., & Barton, D. (2012). *Education to employment: Designing a system that works*. Worldwide: McKinsey & Company.

Results for Development. (2013). *ISESE Africa skills development conference meeting summary*. Project document. http://www.resultsfordevelopment.org/about-us/press-room/r4d-hosts-isese-africa-skills-development-conference-nairobi-kenya-address. Accessed 24 June 2016.

Tong, S. Y. A. (2005). *Task-based learning in english language in Hong Kong secondary schools.* Unpublished Ph.D. thesis, University of Hong Kong, Hong Kong.

UNESCO. (2012). *Youth and skills: Putting education to work. Education for all global monitoring report 2012*. Paris: UNESCO. http://www.uis.unesco.org/Education/Documents/gmr-2012-en.pdf. Accessed 24 June 2016.

UNESCO Institute of Statistics. (2013). *Schooling for millions of children jeopardized by reductions in aid*. UIS fact sheet no. 25. Montreal: UNESCO Institute of Statistics. http://www.uis.unesco.org/Education/Documents/fs-25-out-of-school-children-en.pdf. Accessed 24 June 2016.

Vygotsky, L. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Wang, Y. (2012). *Education in a changing world: Flexibility, skills, and employability*. Washington, DC: The World Bank.

Wilson, K., & Yang, L. R. (2003). A social constructivist approach to teaching reading: Turning the rhetoric into reality. In *Proceedings of the 16th English Australia Conference 2003*.

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Contributors

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Modupe Adefeso-Olateju
Dr. Modupe Adefeso-Olateju is the CEO of The Education Partnership Centre (TEP Centre) which is a consultancy firm that supports an array of education partnership projects. She possesses a combination of crosscutting skills and industry experience gained from a decade of leadership in the profit and non-profit sectors and years of research into private sector participation in education. As an education policy specialist, she served as a member of the Federal Minister of Education's Technical Task Team (Nigeria) where she contributed to the development of the 4-Year Strategic Plan for the Development of the Education Sector (2011–2015). Modupe leads on a range of donor-funded education sector programs where she provides technical assistance to aid evidence-based policy making. She supports government departments and non-state organizations in the areas of quantitative and qualitative research; strategic planning, monitoring, and evaluation; reporting; and overall program management. Besides her education consultancy work, she is passionate about helping young people achieve their professional and academic potential and serves as a trustee of the Commonwealth Youth Exchange Council, London, and Incubator Africa Development Team, Nigeria. Modupe holds a Ph.D. in Education and International Development from the Institute of Education (IOE), University of London, where her research assessed the effectiveness of public and private schools in Nigeria and explored implications for public-private partnership in education.

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Rose Musau
Rose Musau is founder and chief executive officer of Preferred Personnel Africa (PPA), a leading human resource firm in Nairobi, Kenya. Since founding Preferred Personnel 17 years ago, she has noticed deterioration of the Kenyan education

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Katherine Namuddu
Dr. Katherine Namuddu is an independent consultant working on higher education and social change and development issues. Until February 2010, Namuddu was associate director with the Rockefeller Foundation, where she managed the Foundation's program on accelerating female participation in education and the Quality Education for Social Transformation in Africa program and also comanaged grantmaking under the Partnership for Higher Education in Africa. Before joining Rockefeller, Namuddu consulted for the Aga Khan Foundation to introduce information and communication technologies in Kenya secondary schools and has also worked with the World Bank and USAID to develop strategies to rehabilitate the education system in Uganda. Namuddu founded the Minds Across Africa School project in Uganda, which encourages school children and teachers to write for publication. Namuddu holds a doctorate in science education, an M.S. in Biology, an M.A. in Science and Early Childhood Education from Columbia University Teachers College, and a bachelor's degree in biological sciences from Makerere University College. She has taught at Makerere, Kenyatta, and Nairobi universities.

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Dr. Guitele Nicoleau has over 15 years of senior-level management experience of education programs. She served as the chief of party for the USAID/Basic Education Project in Senegal for 5 years. During that time, Dr. Nicoleau received high praise for her exemplary team leadership and management capabilities and for successfully building sustainability into the project's implementation. She currently serves as FHI 360's regional education representative for West and Central Africa, Middle East, and North Africa, with responsibility for developing and implementing a regional education strategy for FHI 360. Dr. Nicoleau received her Ed.D. from Harvard University Graduate School of Education in Cambridge, Massachusetts in 2001.

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Aarthi Rao recently graduated from the UC Berkeley Haas School of Business with a strong interest in using consumer and design research to create programs and services that enable and facilitate the adoption of positive behaviors. She has a background in global health and development with the Results for Development Institute and is currently engaged in designing programs that promote medication adherence both in the USA with CVS Health and in Tanzania with the UC Berkeley School of Public Health.

Risa Sackman
With two decades experience providing leadership and support to education, nonprofit, and cultural organizations, Risa Sackman has dedicated her career to creating effective educational programs, materials, services, and learning experiences that improve education, engagement, and students' ongoing success. An experienced project manager, technical assistance provider, program/curriculum developer, instructional designer, writer, coach, and teacher, Sackman uses these convergent avenues to help organizations and educational institutions build systems, processes, and materials to build capacity and achieve outcomes. As director of School Development and Support at FHI 360, Risa Sackman leads the US-based K-12 education portfolio, including FHI 360's middle grades dropout prevention work, called the Indicators for Success, and School 360, FHI 360's integrated approach to addressing students' academic, social and emotional, physical, and character development using a positive youth development lens. Sackman was a principal designer of both research-based school improvement frameworks and has led the implementation of the work in the USA and, most recently, Central America.

David Sorrell
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