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*Youth and skills: Putting education to work*

## Report on Skills Gaps

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## **Abstract**

CEOs from around the world consider skills gaps one of their top five pressing concerns. In both developed and developing countries, skills gaps are constraining companies' ability to grow, innovate, deliver products and services on time, meet quality standards and meet environmental and social requirements in countries where they operate.<sup>1</sup> Closing skill gaps directly impacts improved productivity, employment, and enterprise creation, whether in the formal or informal sector (WEF, p.13). This report reviews the literature on 120 employer surveys from developed and developing countries. It documents the extent of the skills gap in different countries, describes some of the causes for the skills mismatch, and unpacks what employers mean when they say graduates are not "employable." While the impact of skills shortages (insufficient numbers) will be felt most heavily in the developed nations due to aging of the population, closing skills gaps (insufficient skills) is especially important for the world's young people aged 15-24, most of whom live in developing countries where there are few opportunities for productive employment.

## **Introduction**

CEOs from around the world consider the skill gap one of their top five pressing concerns. In both developed and developing countries skills gaps constrain companies' ability to grow, innovate, deliver products and services on time, meet quality standards and meet environmental and social requirements in countries where they operate. Closing skill gaps directly would improve productivity, employment, and enterprise creation, whether in the formal or informal sector (WEF, p.13). The concerns employers have with the skills of young labor market entrants and their difficulty with filling vacant positions stem from two sources: 1) skills shortages (i.e. not enough graduates at a particular level of education or in the right field of study) and 2) skills mismatch (i.e. whether young people are educated or not, they lack the skills to fill the position). This report reviews the literature on 120 employer surveys (and studies including employer surveys) from developed and developing countries. It documents the extent of skills gaps in different countries, describes some of causes for the skills mismatch, and unpacks what employers mean when they say graduates are not "employable." While the impact of skills shortages will be felt most heavily in the developed nations due to aging of the population, closing skills gaps is especially important for the world's young people aged 15-24, most of whom live in developing countries where only 10-20 percent of graduates are considered employable by international standards.<sup>2</sup> A chronic misalignment of the education system to the needs of the labor market is a global problem. However, it has an especially severe impact on youth in developing countries where there are few if any alternative paths to sustainable livelihoods. The misalignment between education and

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<sup>1</sup>Aring, 2008. A Report on how Nike works around supply chain breakdowns in Thailand. A study co-sponsored

<sup>2</sup> City and Guilds Centre For Skills Development Briefing Note 28, 2010

employment is exacerbated as new technologies continue to shift skill requirements for how work gets done, such as lean production and integrated supply chain management. For example, in traditional textile assembly, a source for low skilled jobs, hundreds of workers sit in rows, repeating one operation hundreds of times throughout an hour. However, even textile firms are moving to lean production methods, where five workers and a computer collaborate to design, cut fabric, and run the assembly of a line of garments faster and with fewer defects.

### Methodology

This study examines 120 national and global surveys on Skills Gaps in most of the world’s regions, with special attention on how skills gaps affect young people. Wherever possible, surveys that represent employers’ points of view were given priority. Some countries are better represented than others, and there are significant differences in how skills gaps are measured in different countries and by the groups measuring them. For example, employers use surveys –often with unique internal skill classification systems, while donor institutions such as the World Bank use education level as a proxy for skill levels. Still other groups use more promising hybrid approaches that attempt to correlate demand supply indicators to employer surveys. (ACT report website). Across the board, this global survey of skills gaps shows an enormous gap in “soft” or “employability” skills as well as for technical/vocational skills.

The surveys reviewed for this study agree on the need for aligning education with labor market needs and a shared classification system for measuring skills. All the surveys state that something must be done and quickly, as the skills gaps problem is urgent. According to the World Economic Forum, companies are organizing for increasing talent mobility across borders, making it easier to import people with needed skills from other countries. (WEF, p.5). While this might be a promising short-term solution, importing skills is likely to exacerbate the underlying condition in affected countries where employers tend to view themselves as passive consumers of the education system, which constitutes a critical part of an employer’s value chain. Viewed from the value chain perspective, the lack of shared standards leads to a mismatch of goals and investments among employers, educators, governments, and the un and under-employed youth in a country. What is needed are internationally shared standards that measure workforce quality, combined with more strategic alliances and resources for national workforce preparation systems.

Table 1. Overview of Employer Surveys for this study

Region	Countries	Sectors	Enterprise size	Education Level
Africa	S.A., Namibia, Botswana, Mauritania, Ghana,	Textiles and Clothing, Cross Sector, Water, Agriculture, artisan banking and financial services, BPO,	Large, medium, and small. Few MNCs except S.A.	In general not specified or tied to education level

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Region	Countries	Sectors	Enterprise size	Education Level
	Senegal	construction, logistics, mfg., trade, retail, transportation		
Asia	Asean, Cambodia, China, India, Laos, Pakistan, Pacific Islands, Regional, Timor Leste	All, Construction, infrastructure, furniture, automotive, machinery repair, services, agriculture	MNCs, Medium, Small	Depending on country. In China university grads
Europe	Europe-wide, UK	All sectors	All enterprise types	Secondary and tertiary, vocational and academic
NIS	Georgia			
LAC	Brazil, Costa Rica, Haiti, Honduras, Regional	Transport, electrical, electronics, engineering, diamond cutting, mining, masonry, sustainable tourism, ICT	All enterprise types	Vocational, university, often not tied to educational levels
MENA	Egypt, Qatar, Jordan, Regional	Education, health, public administration, Technical School faculty, logistics, energy, ICT, tourism, trade, mfg., repair, services	All enterprise types	Some tied to education levels
Global	Depending on scope	All	MNCs	Not linked to education levels
North America	USA, Canada	Mfg., services, ICT, all	MNCs and SMEs	TCB Report specifically linked to education levels

### Synthesis of Findings

Companies are concerned with Skills gaps. They have difficulties filling positions even in countries with high, unemployed youth populations and even in countries where young

people have tertiary degrees. An extensive literature search on employers’ perception of skills gaps conducted during September-October 2011 indicates that employers throughout the world consider “talent,” or skills gaps as one of their top five concerns (The Conference Board, the World Economic Forum, the ILO, the World Bank, Price Waterhouse, Gallup, as well as numerous country level studies)<sup>3</sup>. Manpower Group’s 2011 survey ranks the percentages of employers who report experiencing difficulties filling positions due to lack of available talent: global: 34 percent, US: 52 percent, UK: 15 percent, Germany: 40 percent, Italy: 29 percent, Canada: 29 percent, India: 67 percent, China: 24 percent, Japan: 80 percent, Australia: 54 percent, New Zealand: 44 percent, Singapore: 44 percent. This picture is also true for developing countries, where employers say skills gaps constrain their ability to compete: Egypt 50 percent, Botswana 32 percent, Brazil 69 percent, Colombia 38 percent, Jordan 33 percent (World Bank 2002-2010 Enterprise Survey)

Table 2. Custom Report produced from World Bank 2010 Enterprise Survey

Country	Percent of firms identifying labor skill level as a major factor in productivity
Botswana 2010	32 percent
Brazil 2009	69 percent
China 2003	31 percent
Colombia 2010	38 percent
Costa Rica 2010	38 percent
Egypt 2008	50 percent
Ghana 2007	5 percent
India 2006	14 percent
Jordan 2006	33 percent
Morocco	31 percent
Russian Federation 2004	57 percent

The 2010 World Economic Forum’s report on Talent Mobility states the world is facing a “global demographic shock – a skills gap,” where human capital will soon rival or surpass financial capital as the critical economic engine of the future. (WEF, Executive Summary). The report suggests the “global challenge is so great that no single stakeholder can solve it alone. Unless companies, policymakers and academic institutions join forces to design inclusive modern human capital strategies, we might in less than one decade face a real talent crisis, becoming a barrier to sustainable growth and post crisis recovery.” WEF’s Executive Board calls for a concerted, multi-stakeholder dialogue to coordinate mutually relevant policies and regulations.” It also calls on governments to lift barriers to talent mobility.

Skills gaps are more severe in some countries than in others. For example, 67 percent of India’s employers report a serious skills gap, followed by Brazil with 57 percent

<sup>3</sup> For a detailed list of global and country level studies please consult the Appendix spreadsheet

(Manpower, p.4). These findings are supported by the World Bank's 10 year Enterprise Survey, which shows that across the world, 27 percent of all firms surveyed identify labor skill levels as a major constraint and that skill constraints are significantly higher for employers who export. There is a noticeable difference in how different countries deal with their skills gaps (see case studies on India, Egypt, Brazil, and the U.S. that are a part of this review). In the face of the World Economic Forum's urgent warning, easing migration rules appears to solve the problem in the short term but may make it easier for countries and companies to postpone the development of shared standards that would improve outcomes in education and training. (See case studies).

### *Skill Gaps and their Causes*

The gaps in skills are caused by two converging factors: a qualitative skills mismatch where companies do not find graduates employable even when they have the right qualifications on paper, and a quantitative mismatch where not enough young people are educated and trained at certain levels or they out-migrate to countries where they can earn higher wages. According to the global heavy equipment manufacturer Caterpillar, "the skills gap is our major challenge as we will need 7000 new technicians in countries where the education system is very weakly developed."

A 2007 Conference Board survey on employability of young entrants into the labor market in the U.S. states that 42.4 percent of employer respondents rated high school graduates 'deficient.' Among four-year college graduates, only 23.9 percent are 'excellent' while 64.5 percent are adequate. There are significant skills gaps coming out of tertiary education in many countries around the world as evidenced by a 2007 McKinsey Global Institute study.

### **Skills Gaps of University Graduates**

#### **Mismatch: Comparisons: China, India, Eastern & Central Europe**

- McKinsey Global Institute asked global managers: "Of 100 graduates with the correct degree, how many could you employ if you had demand for all?" Answers:
- Engineers: China & Russia, 10%; India, 25%; Poland, Hungary, Czech Republic, 50%.
- Finance & Accounting: China & India, 15%; Poland, 30%; Czech Republic, 40%; Hungary, 50%.
- Only 3% of university graduates with general degrees in China are seen as employable.
- China and India have very low capability to produce suitable middle managers.
- Source for all of the above: McKinsey Global Institute, "The Emerging Global Labor Market," Q1, 2006.

*A sampling of skills gaps in various regions*

A 2006 survey of employers in North Carolina's high growth sectors (Aring, 2006) revealed that a single degree is no longer sufficient because of the new realities of how work gets done. CEO's told North Carolina's Legislature that Biotechnology majors should get dual degrees in Biotech and business so that they can work in the many new startups generated by the industry. In the UK 75 percent of major companies surveyed states that the British education system is not preparing young people with the right skills to enter the workforce. 59 percent felt that the education system is poor at developing young people's entrepreneurial skills. (Young Enterprise Blogspot). In Europe a concerted initiative is under way to map skill needs based on alternative scenarios until 2015. (CEDEFOP). According to a Youth Employment Network study on skills gaps in Cambodia, (with the youngest population in South East Asia) "employers are demanding a workforce that has the necessary practical and technical skills to take their businesses forward, but these skills are often in short supply" (YEP, p.15). According to the ILO, on the rare occasions that formal sector jobs become available, more often than not employers say that Cambodian graduates are simply not equipped with the mix of soft and technical skills need.<sup>4</sup> Indeed, only 13 per cent of employers in Cambodia believe that graduates have all or most of the skills they need for work. According to these "frustrated" employers, Cambodia's education and training system is not producing young Cambodians with the right skills, skills that are practical and relevant. These two qualities, which can be developed through a mix of formal education, vocational training, practical experience and better linkages between stakeholders, are central to the challenge of youth employment."(YEP, p.15)

Employer studies from India show that although India graduates 450,000 engineers each year, only a fraction - 25 percent - possess the skills to be employable. Indian CEO's find a shortage of young graduates who have the skills to fill certain jobs, despite a clearly large and young population. According to Indian employers, they are experiencing a "labor shortage" of graduates with sufficient skills such as communication in English (TCB 2008). India's skills gaps are not limited to engineering; the Indian Confederation of Industry states that 40 percent of India's population is under 25, yet only 5 percent of total Indian workforce is skilled, compared to 85 percent in South East Asian Countries. Of the 500 million (approx.) workforce in India, only 9 percent is engaged in the organized sector and only 5 percent have marketable skills. The largest share of new jobs would come from the unorganized sector, which accounts for most of the national workforce. The National Sample Survey reports that only about 2 percent have received formal vocational training and another 8 percent have received non-formal vocational training.<sup>5</sup> (CII and City and Guilds Summit).

Interviews with senior HR executives in China indicate that 6 out of 9 say their new

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<sup>4</sup> ILO RSS feed: "Cambodia's young people look for a brighter future" Dec 2, 2011. Available online at [http://www.ilo.org/global/meetings-and-events/regional-meetings/asia/aprm-15/media-centre/WCMS\\_169404/lang--en/index.htm](http://www.ilo.org/global/meetings-and-events/regional-meetings/asia/aprm-15/media-centre/WCMS_169404/lang--en/index.htm)

<sup>5</sup> Confederation of Indian Industry and City and Guilds: 3<sup>rd</sup> Global Summit on Skills Development

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Chinese university graduates are "deficient" in preparation for employment in their multinational company. 6 out of 8 say graduates are deficient in foreign language skills, 5 out of 8 say graduates are deficient in "ability to think independently," 5 out of 8 in "teamwork skills, and 4 out of 8 in "entrepreneurialism" <sup>6</sup> (TCB, 2008).

A University of London and Georgetown University report on Latin America calls the rate at which skills gaps afflict the region's largest economies of Brazil, Mexico, Venezuela and Argentina 'alarming,' in light of the fact that "these countries make up 78 percent of regional output."<sup>7</sup> (Schwalje, 2011)

Employer studies from Ghana, Senegal, Egypt, Namibia, Botswana, and South Africa all stress a serious problem with skills gaps, noting gaps in the basic skills and entrepreneurial skills of young people. Namibian employers agree that the issue of skills is "an urgent strategic concern across various sectors and that skilled people from outside the country are being imported while high unemployment rates of 51 percent prevail."<sup>8</sup> (Namibian Employers Federation, p.3) Most if not all of the studies indicate that employers believe that importing skilled labor is the only viable solution.

The lack of available talent and trained resources in the Middle East region was the greatest threat identified by Arab CEOs for sustainable development. Only half of the CEOs surveyed believe that there are sufficient numbers of qualified students coming out of the education system, with 54 percent citing that new graduates carry the right skills set. Equally, only 48 percent believe that these skilled students are provided in sufficient quantities. Gulf leaders are among the least satisfied with the supply of employable graduates, with only 37 percent citing their satisfaction. (Maktoum Foudation, p.5)<sup>9</sup> Similarly, conversations with executives at Jordan's ICT association (INT@J) suggested that university graduates with high tech degrees had no idea that when they got to work they had to serve customers, or understood what that entailed."<sup>10</sup> Silatech, an initiative funded by the Qatar Foundation to create jobs in the Middle East found that 100 million new jobs have to be created to absorb the new entrants into the labor market in the 22 Arab countries. Indeed, skills gaps throughout the Middle East are considered so severe that a Google search yielded a dozen pages of media stories about the problem.

### *The Skills Gap: What Employers Want And What Schools Supply*

The difficulty of finding disaggregated data for what skills are lacking among youth is that 1) there is no standard skill classification system for employers *and* education, 2) there is no standard for articulating skill classification systems to education curricula, 3) youth are not a monolithic block as their skill levels depend on whether or not they have

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<sup>6</sup> The Conference Board. "Fit for Purpose –Are China's Graduates Ready to Work? 2008

<sup>7</sup> London School of Economics, Schwalje, Wes. The Prevalence and Impact of Skills Gaps on Latin America and the Caribbean (2011)

<sup>8</sup> Namibian Employers Federation. Namibia's Skills Deficits: Cross Sectoral Perceptions and Experiences. 2010

<sup>9</sup> The Arab Human Capital Challenge. PWC and Maktoum Foundation

<sup>10</sup> Author's conversation in Jordan, 2005.

completed school and at what level, whether they live in urban or rural settings, and whether they have adult role models and mentors,<sup>11</sup> 4) most policymakers and economists use educational achievement as a proxy for skills, as well as other factors. One thing is clear: employers in developed and developing countries agree that schools at all levels are not preparing young people with necessary skills and that this is a serious constraint to growth in their home and export markets, and is forcing them to seek skilled labor from abroad.

With some notable exceptions, most of the national or international employer surveys on skills gaps reviewed for this study do not ask what skills they consider as being the most important for young people entering the labor market, and with what level of education. Several of the national surveys that focused on youth livelihood agree that young people lack skills associated with employability. Unfortunately, employability tends to be a catchall term that can include basic literacy and numeracy skills, as well as technical, interpersonal, self-management, and cultural skills needed for employment, as well as skills required for successful self employment.<sup>12</sup> The level of generality invoked by terms such as “employability” does not provide educators with the information they need to develop better curricula. A number of organizations have attempted to define what is meant by employability, however, there is no single standard for what these skills are and how to measure them.

#### *How Are Skills Measured?*

A number of countries, for example, the UK, have attempted to build standard classification systems for measuring skill levels (NVQs). Similarly in the U.S., ACT has built a classification system for employability skills (Work Keys)<sup>13</sup> and a curriculum for acquiring these skills. One of the more recent attempts at a classification system for skills was done by South Africa’s Higher Education and Qualifications Authority (2009).<sup>14</sup> Similar to ACT, their approach to classifying skills may help other countries to decompose what their employers mean when they find their young entrants lack employability skills. A summary of employability skills employers consider “necessary” can be found in the section on Skill Classifications systems at the end of this report.

Compounding the confusion on how to measure skills is the fact that employers, policymakers, and educators each measure skills differently. Opinion surveys seem to be the tool of choice for employers, while policymakers and economists use educational achievement as a proxy. The fact that most employers find graduates of most tertiary institutions lacking in various countries (McKinsey Global Institute 2007) suggests that

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<sup>11</sup> conversation with Deepa Narayan, author of World Bank Poverty Study

<sup>12</sup> Aring and Brand: The Teaching Firm, where productive work and learning converge. A study of learning at work outside training events at Motorola, Boeing, Ford, Siemens, and several small and mid-size firms. The study found that in manufacturing, 70 percent of skills are learned in the process of performing 13 ordinary workplace activities such as participating on teams, mentoring, supervising, customer visits, etc.

<sup>13</sup> ACT Work Keys: <http://www.act.org/workkeys/>

<sup>14</sup> Higher Education and Qualifications Authority of South Africa: Graduate Attributes: A baseline study on South African graduates from the perspective of employers. 2009

using education achievement as a proxy for skills is not helpful in terms of developing the shared language, standards, and alliances needed among educators, employers, governments, and job seekers.

### *Unpacking “Employability” Skills*

In their study on how to improve the transition from school to work, researchers from the Education Development Center worked alongside entry-level workers at high performing companies such as Motorola, Boeing, Siemens, Ford Electronics and several small and mid-size firms to discover how these workers “learn” their jobs (Aring and Brand, 1998). The researchers found that entry level workers learn 31 competencies while doing their jobs by participating in 13 everyday workplace activities, such as teaming, mentoring, talking with customers.<sup>15</sup> The research team was made up of anthropologist, an industrial psychologist, an expert on workplace learning, an economist, and a journalist. Their quantitative and qualitative analysis of 1000 events resulted in the development of a new classification system for skills, endorsed by corporate and HR leaders within the firms as a better way to classify skills. This typology will be used in the following sections to unpack what skills employers say they need from young entrants.

### **Typology of Employability Skills**

*Cultural Skills:* Each organization gets work done differently. Understanding how work gets done, decoding unwritten rules and navigating the unique culture of each workplace is a core employability skill according to high performing employers (Aring Brand 1998). These cultural skills include knowing how to navigate a particular workplace culture, for example how to know whom to invite and how, how to put ideas into a specific cultural context. Cultural skills also include knowing how to be effective with people coming from different cultures. *Finding:* employers considered cultural skills “the most difficult to teach.”

*Interpersonal Skills:* Knowing how to listen, speak, present information. *Finding:* employers considered interpersonal skills next in order of difficulty to teach.

*Intra-personal Skills:* Knowing how to manage one’s emotions, be comfortable with uncertainty; manage resources such as time and money. *Finding:* employers believed that these skills come from acculturation in families, and that these skills are extremely difficult to teach.

*Technical or Job specific Skills:* How to operate specific tools, processes, machines, software, etc. required for a particular job. *Finding:* employers considered these skills the easiest to teach, however, they were all concerned by the fact that in the U.S. they had to interview 10 individuals to find one who could do math at 5<sup>th</sup> grade and read at 7<sup>th</sup>

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<sup>15</sup> Aring and Brand, The Teaching Firm. EDC 1998. The detailed report can be found at <http://www.convergentlearningzone.com/>

grade levels.

The following table puts the employability skills gaps found in the review of 120 surveys into the framework of cultural, interpersonal, intra-personal, and technical skills:

Table 3: Employability Skills Gaps According to Employer Surveys

<b>“Employability” Skills</b>	<b>Cultural</b>	<b>Interpersonal</b>	<b>Intra-Personal</b>	<b>Technical, job specific</b>
Literacy				X
Numeracy				X
Written Communications	X	X	X	X
Ability to use information	X	X	X	X
Oral presentation skills	X	XX	X	
Ability to handle large amounts of information		X	XX	
Technical ability				XX
Ability to use new information	X		X	
Computer literacy				XX
Proficiency in English		X		XX
Prior exposure to the work	X	X	X	X
Knowing the organization	XX	X	X	
Understanding economic and business realities			X	X
Ability to formulate and check assumptions	X		X	
Ability to follow and construct logical arguments			X	X
Ability to choose appropriate information to address problems	X			X
Ability to plan and			XX	X

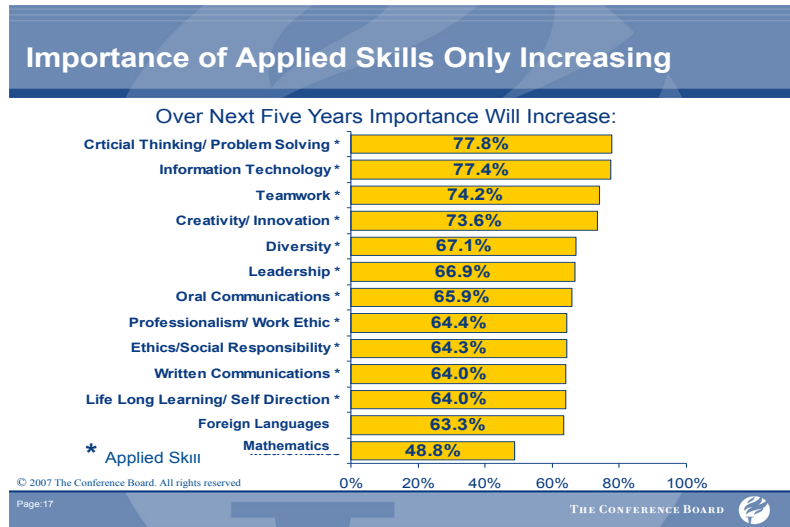
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<b>“Employability” Skills</b>	<b>Cultural</b>	<b>Interpersonal</b>	<b>Intra-Personal</b>	<b>Technical, job specific</b>
execute tasks independently				
Appropriate approach to problem solving	X	X	X	X
Ability to monitor and evaluate own work-related activities			XX	X
Ability to relate specific issues to wider contexts	X		X	X
Ability to apply knowledge to new situations			X	X
Ability to devise ways to improve own actions			XX	X
Ability to deal with different cultural practices	XX			
Openness and flexibility			XX	
Negotiation and Mediation skills	X	XX	X	X
Self motivation and initiative			XX	
Ability to network	X	XX		
Creativity and innovation			XX	
Ability to relate to a wide range of people	XX	X		
Team participation	X	XX		
Sense of Identity and self confidence			XX	

Research finds that many of these skills cannot be taught via traditional talk and chalk

training approaches (Piaget, Dewey and many others).<sup>16</sup> Just as you cannot learn to ride a bicycle by reading the book about it, many employability skills have to be learned by doing, or application. That is why these are sometimes called “applied” skills. The importance of soft, or applied skills is shown in the findings of researchers at The Conference Board (2007), who found the importance of applied skills increasing over the next five years.



Conference Board Presentation to the Global Advisory Council 2007

## Conclusion

Skills gaps are constraining companies’ ability to grow, innovate, deliver products and services on time, meet quality standards and meet environmental and social requirements in countries where they operate. Skills gaps are so severe throughout the world that even countries with high youth and adult unemployment are planning to relax their immigration laws to substitute foreign skilled labor for jobs their unemployed could have filled if they had the right skills. This strategy may take away pressure that would help countries act more aggressively to link their education and training system to current and future labor market needs. Skills gaps are widespread and pervasive, the result of demographic factors, out-migration of labor, and misalignment between education and employers. Much of the misalignment could be eliminated if the following and other ideas were further developed:

- 1) A standard classification systems for skills and articulation to education curricula,
- 2) Shared Language and agreement on how to measure skills,
- 3) A standard for what is meant by “employability skills,”
- 4) National authorities for workforce education and training which now falls between education and labor ministries, often ignored by each,

<sup>16</sup> Constructivism (Learning Theory) Wikipedia. Available online at [http://en.wikipedia.org/wiki/Constructivism\\_%28learning\\_theory%29](http://en.wikipedia.org/wiki/Constructivism_%28learning_theory%29)

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- 5) Innovation and experimentation on what works best to help young people learn employability skills by doing (for example, video games)
- 6) A Change of attitude of employers so that they view the education and training systems of countries where they operate as a part of their value chains
- 7) Increased public-private investments to finance a continual stakeholder dialogue on skills. Examples from countries where this dialogue takes place (Singapore, northern Europe), demonstrates its effectiveness in anticipating skills gaps and filling them before they happen.

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## **BACKGROUND**

### **1. Introduction**

Brazil's economy is forecast to be the world's 5<sup>th</sup> largest economy by 2025, "overtaking that of Britain and France, and Sao Paulo will rank higher than Paris and Shanghai as the world's sixth wealthiest city. (Economist Intelligence Unit, 2010).<sup>1</sup> For 192 million consumers, Brazil is Latin America's largest market and the world's fifth most populous country. (Economist Intelligence Unit, 2010).<sup>2</sup> According to the World Bank Enterprise Survey 2009,<sup>3</sup> 73 percent of firms surveyed in Brazil report a major or very severe skills gap – by far the highest score in the region, the second-highest being Argentina with 48 percent in 2006. For 12 percent of the surveyed firms in Brazil, skills gaps are reported to be the most important obstacle to operations and growth (Schwalje, p.23).<sup>4</sup> The various employer surveys report a gap in employability and some technical skills, and they suggest that these gaps constrain their growth in major industry sectors including manufacturing, health care, financial services, tourism, ICT and others. This case study identifies what type of skills employers consider as being most important for young people entering the labor market, and to what extent young entrants to the labor market today lack the type of skills demanded by the country's employers.

### **2. Scope of Case Study**

- The 2010 World Bank Enterprise survey of manufacturing and services firms from the formal sector with at least 5 employees<sup>5</sup>. This survey does not appear to provide data on the age, type of occupations, positions or education background of the workforce
- A Dell/FedEx survey covers firms all over the region, but it does not claim to be representative of the economy of LAC – questions seem to target primarily young labor market entrants with post-secondary education<sup>6</sup>
- A 2010 report of the Economist Intelligence Unit, "Brazil Unbound: How Investors see Brazil and Brazil sees the world." This report draws on in-depth interviews with country experts and analysts, Economist forecasts, and a survey of executives in 536 companies across 18 industries. One third of survey respondents were based in Brazil and the rest distributed throughout the world. Almost half the companies had annual global revenues of \$500 million or less. Respondents were C-suite or Board members.<sup>7</sup>
- A 2006 report done by Entra 21 of the International Youth Foundation, titled "Collaborating with the Private Sector: A Case Study of an Entra 21 Project in Salvador, Baha, Brazil. This report describes results in placing low-income youth in the job market in partnership with employers. The report suggests that weaknesses in the education system constrain the supply of relevant workplace skills. There are too few university graduates. Poor teaching and resourcing in secondary education means that school leavers are among the world's least educated. Companies find they must fill the skills gaps themselves with their own training. At least one third of investors surveyed

- say skills shortages represent one of the biggest operating problems, with almost one half (47%) of US-based companies reporting this as their greatest challenge. Educationalists call for a more relevant curriculum, better teacher training, and a shift in state funding from tertiary to secondary education
- An IADB Education Division report titled, “Hire for Attitude, Train for Skills. A 2009 Case Study on the Transition from School to Work in Latin America. This report features a survey of 1100 establishments on the competencies employers considered mandatory for the 21<sup>st</sup> century in 25 entry-level occupations. Brazil is one of three countries covered in the study
  - A 2011 Special Report of the Financial Times that states that that Brazilian companies face an unprecedented demand for skilled workers that cannot be met locally due to the hot local economy. Instead, companies are wooing a pool of foreign workers, especially Japanese Brazilian workers. The main problem is the low educational standards, according to the article<sup>8</sup>
  - A 2011 paper analyzing IT skills gaps in Brazil, titled IT’s Brazil: the technology skills gap. This paper analyzes data from various sources, including the Brazilian Agency for Promotion and Export of Software. Despite some 30,000 students studying IT related subjects and churning out people with Masters and PhD’s, this report finds a disconnect between the caliber of professionals supplied by these courses and the skills that companies require.<sup>9</sup>
  - A 2006 report by HIFAB, titled Competitiveness and Science and Math Education. Comparing Costa Rica, El Salvador and Brazil to Sweden’s student outcomes in the IT sector. <sup>10</sup>
  - A 2003 World Bank report, titled, “Closing the Gap in Education and Technology. This report focuses on the gaps in education and technology and states, “*we find that, in the aggregate, Latin America suffers from significant deficits in productivity, skills, and technology.*”<sup>11</sup>

#### *Regional Reports consulted*

- A 2011 London School of Economics Analysis of the Prevalence and Impact of Skills Gaps on Latin America and the Caribbean. This analysis provides a careful analysis of skills gaps in the region. <sup>12</sup>
- A 2009 Economist Intelligence Unit Report, titled “Skills to Compete: Post-Secondary Education and Business Sustainability in Latin America is based on a survey of 192 senior executives in Latin America, in-depth interviews with senior execs in the region, and secondary research. The report states that both technical and soft skills are missing. However, more than 70% of respondents say that critical thinking, problem solving and life skills are very important in the workplace (76%, 73% and 72%, respectively)<sup>13</sup>
- A 2010 IADB and IYF Report, titled “A Ganar.” This report does not analyze skills gaps, however it identifies six core skills essential in sport and the workplace, including teamwork, communication, focus on results, discipline, respect, and continual self-improvement

- A 2009 cross country paper that evaluates the impact of a randomized training program for disadvantaged youth. This paper states that youth unemployment is 3 times as high as adult unemployment in the region. Youth unemployment is dramatically higher for poor youth and it is linked to poverty and increasing violence and crime.
- A 2010 IADB report titled, School to Work Transition. The Skills Gap and its Impact on the Employability of Youth. This report is a part of the research agenda of the IADB to analyze and document skills gaps and the factors that cause them.<sup>14</sup>

*Skills gaps in the informal sector:*

9 country and 5 regional reports were examined for this case study. These reports account for skills gaps in the formal sector. However, it should be noted that in 2005, approximately half of Brazil's labor force worked in the informal sector, according to McKinsey study.<sup>15</sup> The study also points out that the informal economy constrains economic growth by 1.5 percent per year and in 2005 accounted for 40 percent of national income. Surprisingly, there is little data about skills gaps in the country's informal sector, such as construction and agriculture, where 72 percent have never participated in a training program, 80 percent have not completed elementary school, and 20 percent are illiterate (Matsuda, p.4)<sup>16</sup> At least two programs (Entra 21<sup>17</sup> or Mais Unidos<sup>18</sup>) gather what appears to be anecdotal information about skill needs in the informal sector, however this review found no systematic study of skill needs or gaps in the informal sector. As a result, when employers talk about skill gaps in the middle level occupations it is not clear if they are including informal sector jobs.

### **3. Key data on Brazil's labor market**

Brazil's GDP/capita is estimated at \$10,800 for 2010, with a total population of 203,429,773. Agriculture makes up 5.8 percent of the country's economy, services 65.4 percent, and industry 26.8 percent. The total population in the labor force is estimated at 103.6 million. Unemployment is estimated at 6.7 percent (CIA Factbook, 2011)<sup>19</sup>. In 2008 26 percent of the population lived below the poverty line. It is estimated that 60 percent of the rural population continues to live below the poverty line, (OECD 50).<sup>20</sup> The literacy rate for males is 88.4 percent, females 88.8 percent (OECD 50).<sup>21</sup> Youth unemployment between the ages of 15-24 is estimated at 17.8 percent, and higher for females. Dropout rates are high: 33 out of every 100 students who enter grade one make it to grade 6 and continue to drop out through high school (OECD).<sup>22</sup> In 2005 93 percent of the population ages 5-14 enrolled in education and nearly 80 percent of youth aged 15-19 attended full or part time education. Of the 20-29 age group 21 percent are still in education (OECD, 2008).<sup>23</sup>

According to a 2007 University of London paper (McCowan p1), Brazil faces significant challenges in expanding an equitable access to higher education, as those who have not had a high quality (private) secondary education or attended expensive prep courses are

unlikely to get into the highly competitive public universities.<sup>24</sup> The 2008 OECD<sup>25</sup> report indicates that 8 percent of the population aged 25-34 has attained tertiary education and 30 percent of the population aged 25-64 have upper secondary education.<sup>26</sup> The recent breakneck growth of the economy has resulted in severe skill shortages that drove wages sky high according to a June 2011 Financial Times article.<sup>27</sup>

According to the ILO<sup>28</sup> the construction sector is an important entry point into the workforce for people with less than secondary education and has many jobs in related services. 72 percent of workers in the construction industry have never been part of a training program, 80 percent have not completed elementary school, and 20 percent are illiterate. Similarly, more than 605 of Brazil's rural population still lives below the absolute poverty line; the OECD suggests that upgrading farming skills and technologies is needed to raise incomes.

#### ***4. What are the skills that young people need to have? To what extent are they missing, according to employers?***

According to the surveys consulted, Brazil's employers overwhelmingly cite skills gaps in "employability skills." Because there is no precise definition or understanding of what "employability skills" consist of, the term is often used as a catchall for many different types of skills. What employability skills have in common is that they usually need to be learned by doing. Just as it's impossible to learn how to ride a bicycle by reading a book about bike riding, employability skills, such as the ability to solve problems or cope with uncertainty or anticipate customer needs or manage time and money are best learned by doing, embedded in real tasks. Mistakes and coaching on how to improve provide access to developing the skill. What is often forgotten when talking about employability skills is that they are more effectively learned if they are acquired in the context of the industry sector where they must be applied. For example, to solve problems in the financial services sector requires both technical and soft skills. In the case of the financial sector, technical skills include software applications, knowing how and when to apply the industry and organization's rules, products and services. The soft skills include problem solving, interpersonal communication skills, and self-management skills (managing one's own emotions, managing resources, and time).

#### **EMPLOYABILITY SKILLS AND GAPS**

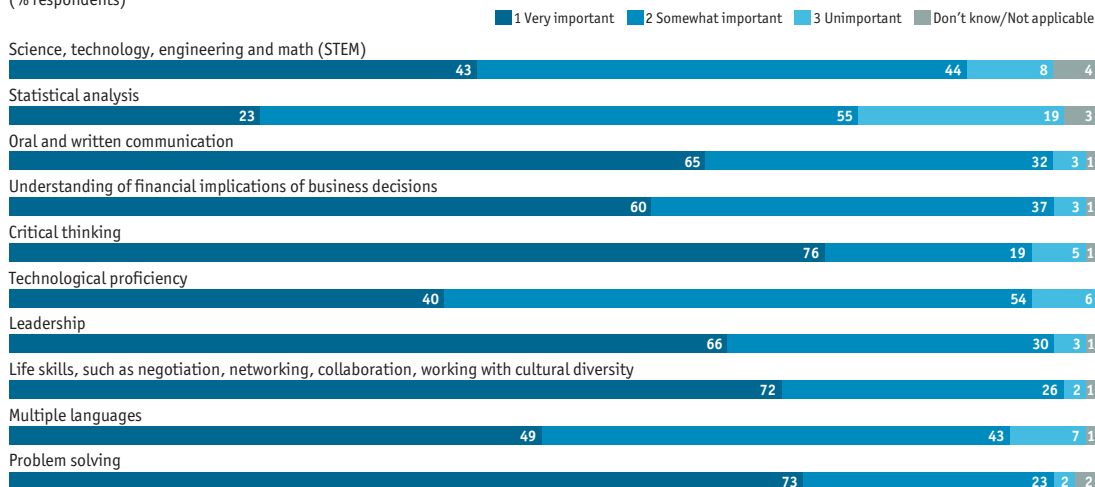
In the Global CEO survey taken by Price Waterhouse Coopers<sup>29</sup> 76 percent Brazilian executives cited lack of qualified labor as a concern. Interestingly they also are concerned about integrating young people into the workforce (66 percent).

The following table from the Dell FedEx survey<sup>30</sup> of 192 executives in the region (including Brazil) provides a list of critical employability and some technical skills and how important employers believe they are to the success of their enterprise. What is not clear is how employers assess these skills gaps.

## In your opinion, which skills are in most demand by employers today?

Rate on a scale of 1 to 3, where 1= Very important and 3=Unimportant.

(% respondents)



Source: Skills to Compete – Economist Intelligence Unit 2009

Closing gaps in the employability and technical skills in Brazil will be a challenge, as the country's education system reflects a class structure where elite youth attend expensive private secondary schools where teaching is rigorous. Their private secondary school education arms them with an enormous advantage in terms of entering the country's highly competitive and high-quality public state universities. Students without the means to attend private school go to public secondary schools that have severe quality problems (author's conversations and 2006 IADB study).<sup>31</sup> A 2006 study of technology transfer from Multinational companies to small and medium enterprises in Brazil and two other Latin American countries shows that the parallel system of public and private education at primary and secondary levels results in far lower quality education for those who do not have the means to attend private schools in terms of math, science, and ability to solve problems needed for the ICT sector.<sup>32</sup> An employer interviewed for the Economist Brazil Unbound study concludes that those that do not get into the highly competitive universities have "a poor grounding in science math, and computer sciences. They don't learn how to think rigorously, analyze and interpret data, "depriving potential employers of a corps of competent middle management and technical staff."<sup>33</sup> For these reasons companies find they must fill the skills gaps on their own, according to one third of the investors surveyed.<sup>34</sup> To close these skills gaps, the Economist article argues, business should focus on the mid ranking school leavers who are needed to provide the country's middle management, technicians and engineers, who too often find themselves struggling and dropping out of secondary education.<sup>35</sup>

A recent New York Times article provides more detail:<sup>36</sup> - "Over the past decade, Brazil's students have scored among the lowest of any country's students taking international exams for basic skills like reading, mathematics and science, trailing fellow Latin American nations like Chile, Uruguay and Mexico. Brazilian 15-year-olds tied for 49th out of 56 countries on the reading exam of the [Program for International Student](#)

[Assessment](#), with more than half scoring in the test’s bottom reading level in 2006, the most recent year available. In math and science, they fared even worse. The article states “the nation’s educational shortcomings are leaving many Brazilians on the sidelines. More than 22 percent of the roughly 25 million workers available to join Brazil’s work force this year were not considered qualified to meet the demands of the labor market, according to a government report in March. “In certain cities and states we have a problem hiring workers, even though we do have employment,” said Márcio Pochmann, president of the Institute for Applied Economic Research, the [government agency that produced the March report](#). Earlier estimates showed that tens of thousands of jobs went unclaimed because there were not enough qualified professionals to fill them.”

Brazil’s skills gaps affect SMEs disproportionately as in Brazil “Micro, small and medium-sized enterprises represent 95 per cent of all firms and provide 64 per cent of the jobs in the country,” according to the IDB.<sup>37</sup> In small firms, 42 percent respondents said skill gaps are the most important obstacle to the operation and growth of their firms. 39 percent of mid-sized firms and 18 percent of large firms agreed.” (Schwalje, 2011)<sup>38</sup>

## INDUSTRY SECTOR SKILL GAPS

While there appears to be no systematic analysis by sector of skill gaps in Brazil’s industry sectors, the following table summarizes anecdotal evidence taken from various employer surveys on the topic of skills and gaps in Brazil. The x indicates skills shortages and gaps.

Sectors	Managerial Professional University grads	Technical Mid-level	Entry level Basic (high school)	Source	Comments
Construction Electrical	X	X	X	Brazil Unbound	AES, a US electricity company that has invested some \$6bn in Brazil and plans to double typically suffers a shortage of electricians and mechanics.”
IT	X	X		iTdecisions <sup>39</sup>	IT sector employs 600,000. Shortage expected to hit 92,000 in 2011 and 200,000 by 2013. There is a disconnect between the caliber of professionals supplied by Brazilian universities and the skills that companies require <sup>40</sup>
IT	X	X		iTdecisions <sup>41</sup>	“The behavior needed to analyze business requirements, translate that into technical

Sectors	Managerial Professional University grads	Technical Mid-level	Entry level Basic (high school)	Source	Comments
					projects and deliver them. That is an issue voiced by supplier and user firms”
Banking – Banco Itau, SP			X	IDB website <sup>42</sup>	Case study on skills sought out when hiring and training young people without college education (due to be published)
Management	X	X	NA	Brazil Unbound <sup>43</sup>	“Lack international experience and multicultural awareness when compared with their peers in developed markets. But local managers do excel in creativity and innovation.”
Education	X	X	N/a	Skills to Compete <sup>44</sup>	Teachers need significant improvement in -Soft skills -Technology in classroom -Teacher qualifications in subject matter -Qualification of incoming students in subject matter
Oil Gas Mining Agriculture Financial Services	X	X	X	Financial Times <sup>45</sup>	Especially in demand are skills in engineering, IT, management, finance and accounting. “We see skills gaps everywhere and in the IT industry they are extreme. (HP HR director in Sao Paolo)
Automotive hotel, banking, large scale retail food and food processing	N/A	N/A	Cashier, supermar ket shelf stocker, reception ist, other	IDB <sup>46</sup>	IDB’s Education Division survey of 1100 establishments - unpublished report of 6 case studies that may have information about skills gaps

## Conclusion

Unfortunately, “few attempts in Latin America and the Caribbean have been made to determine the extent of national skills gaps; the importance of skills gaps relative to other business challenges; the industries facing the most severe skills gaps; and the prevalence of skills gaps by firm size. (Les Schwalje) “<sup>47</sup> Schwalje goes on to say that middle income countries such as Brazil are more likely to have skills gaps as they attract more foreign companies who rely on more sophisticated technology and export orientation. The 2010 World Bank Enterprise survey shows that 20 percent of firms in Latin America and the Caribbean report a major or very severe skills gap. Brazil is at the top with 73 percent of firms surveyed saying they have a major or very severe skills gap.<sup>48</sup>

<sup>1</sup> “Brazil Unbound – How Investors See Brazil and Brazil Sees the World.” HSBC with Economist Intelligence Unit. 2010. Available online at <http://www.cantos.com/company/The+Economist+Intelligence+Unit/project/6785>

<sup>2</sup> Ibid

<sup>3</sup> World Bank Enterprise Survey Brazil available online at: [www.enterprisesurveys.org/data/exploreeconomies/.../brazil/](http://www.enterprisesurveys.org/data/exploreeconomies/.../brazil/)

<sup>4</sup> Schwalje, Wes A.: “Skill gaps in Latin America” pps (p 23) GCG Georgetown. 22-23 12 percent say skills are the most important obstacle to the operation and growth of their firms (2011)

<sup>5</sup> Methodology for World Bank Enterprise survey online at <http://www.enterprisesurveys.org/Methodology>

<sup>6</sup> “Skills to Compete – Post-Secondary Education and Business Sustainability in Latin America.” A Report from the Economist Intelligence Unit, sponsored by Dell and FedEx. Oct 2009. The report is based on a survey of 192 senior executives in Latin America, in-depth interviews with senior executives in the region and desk research.

<sup>7</sup> Brazil Unbound. How Investors see Brazil and Brazil sees the World. 2010. Economist Intelligence Unit. Online at <http://www.businessresearch.eiu.com/brazil-unbound.html>

<sup>8</sup> Conservative hiring erects barriers to Brazil Jobs. Financial Times Special Report, 2011. Online at <http://media.ft.com/cms/f6b22a6a-a30a-11e0-a9a4-00144feabdc0.pdf>

<sup>9</sup> Man, Angela. IT’s Brazil: the technology skills gap. 2011. Online at <http://itdecs.com/2011/08/its-brazil-the-technology-skills-gap/>

<sup>10</sup> HIFAB, 2006. Competitiveness and Science and Math Education. Comparing Costa Rica, El Salvador and Brazil to Sweden’s student outcomes in the IT sector. Online at <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1028382>

<sup>11</sup> World Bank, 2003. Closing the Gap in Education and Technology. Online at [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2003/05/17/000094946\\_03050304064862/Rendered/PDF/](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2003/05/17/000094946_03050304064862/Rendered/PDF/)

<sup>12</sup> [http://gcg.universia.net/pdfs\\_revistas/articulo\\_180\\_1301298822843.pdf](http://gcg.universia.net/pdfs_revistas/articulo_180_1301298822843.pdf)

<sup>13</sup> Skills to Compete: Post-Secondary Education and Business Sustainability in Latin America. <http://www.businessinsociety.eu/resources/3352>

<sup>14</sup> The Skills Gap and its impact on the employability of youth. IADB, 2010. Available online at <http://www.iadb.org/en/topics/education/school-to-work-transition-the-skills-gap-and-its-impact-on-the-employability-of-youth,6472.html>

<sup>15</sup> McKinsey Quarterly, “Reining in Brazil’s Informal Economy.” Jan 2005. Online at [http://www.mckinseyquarterly.com/Reining\\_in\\_Brazils\\_informal\\_economy\\_1566](http://www.mckinseyquarterly.com/Reining_in_Brazils_informal_economy_1566)

<sup>16</sup> Yoshioka, Asuka. Decent Work in Brazil’s Construction Industry: Possibilities for Inter-jurisdictional Consortia. University of British Columbia, 2009

<sup>17</sup> International Youth Foundation: “Entra 21 Final Report of the Entra 21 Program Phase 1: 2001-2003.” An Initiative of the IDB’s Multilateral Investment Fund and IYF. Available online at [www.iadb.org/document.cfm?id=2191107](http://www.iadb.org/document.cfm?id=2191107)

<sup>18</sup> USAID Brazil “Mais Unidos” available online at <http://brazil.usaid.gov/en/node/342>

<sup>19</sup> CIA Fact book Brazil 2011

<sup>20</sup> Brazil About. OECD Brazil: online at [www.oecd.org/.../0,3347,en\\_33873108\\_36016449\\_1\\_1\\_1\\_1...](http://www.oecd.org/.../0,3347,en_33873108_36016449_1_1_1_1...)

<sup>21</sup> Ibid. Literacy is defined by who can read and write at age 15)

<sup>22</sup> source <http://www.fmpsd.ab.ca/schools/df/brazil/meducation.htm>

- <sup>23</sup> "Education at a Glance 2008" OECD Briefing Notes for Brazil. Available online at [http://www.oecd.org/document/9/0,3746,en\\_2649\\_39263238\\_41266761\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/9/0,3746,en_2649_39263238_41266761_1_1_1_1,00.html)
- <sup>24</sup> McCowan, Tristan, "Expansion without equity: an analysis of current policy on access to higher education in Brazil. University of London, 2005
- <sup>25</sup> <sup>25</sup> "Education at a Glance 2008" OECD Briefing Notes for Brazil. Available online at [http://www.oecd.org/document/9/0,3746,en\\_2649\\_39263238\\_41266761\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/9/0,3746,en_2649_39263238_41266761_1_1_1_1,00.html)
- <sup>26</sup> "Briefing Note for Brazil" OECD Ed at a Glance 2008 OECD. Note: In 2005 93 percent of pop 5-14 enrolled in education and nearly 80 percent 15-19 attended full time or part time education
- <sup>27</sup> Rumsey, John. "Working in the Americas – Conservative hiring erects barriers to Brazil jobs." Financial Times Special Edition. June 30, 2011
- <sup>28</sup> Yoshioka, Asuka. *Decent Work in Brazil's Construction Industry*. Possibilities for International Jurisdictional Consortia. Paper prepared for LASA International Congress, June 2009. P14
- <sup>29</sup> 14<sup>th</sup> Annual Global CEO Survey. Available online at [PWC.com/ceosurvey](http://www.pwc.com/ceosurvey)
- <sup>30</sup> Skills to Compete – Post-Secondary Education and Business Sustainability in Latin America. A Report from the Economist Intelligence Unit, sponsored by Dell and FedEx. Oct 2009. The report is based on a survey of 192 senior executives in Latin America, in-depth interviews with senior executives in the region and desk research
- <sup>31</sup> Author's conversations with leaders in Brazil's education system, 2006, and IADB study on skills gaps in math and science and transfer of technology in Brazil's IT sector.
- <sup>32</sup> Competitiveness and Science and Math Education Comparing Costa Rica, El Salvador and Brazil (Recife) to Sweden. Hifab 2006. Monika K. Aring online at <http://search.iadb.org/search/cgi-bin/query-meta.exe?vpercent3Asources=IDB-S-I-Bundle&vpercent3aproject=IDB-P-Internet&display-language=english&query=Competitiveness+and+Science+and+Math+Education&lang=en>
- <sup>33</sup> Brazil Unbound p17
- <sup>34</sup> Brazil Unbound (executive summary)
- <sup>35</sup> Brazil Unbound
- <sup>36</sup> NY Times. Educational Gaps Limit Brazil's Reach Sept 5 2010
- <sup>37</sup> "IDB supports micro, small, and medium-sized enterprises in Brazil" IDB America. Magazine of the InterAmerican Development Bank. Nov 5, 2011
- <sup>38</sup> Schwalje, p. 22
- <sup>39</sup> (iT)decisions itdecs.com. IT's Brazil: the technology skills gap. August 17, 2011
- <sup>40</sup> Shortage numbers according to Brazilian Agency for Promotion and Export of Software (Softex)
- <sup>41</sup> (iT)decisions itdes.com
- <sup>42</sup> "Hire for Attitude Train for Skills." Case Study on the Transition from School to Work in Latin America. Available online at <http://www.iadb.org/en/topics/education/hire-for-attitude-train-for-skills,7464.html>
- <sup>43</sup> Brazil Unbound, p 17
- <sup>44</sup> "Skills to Compete," Economist Intelligence Unit, p 9
- <sup>45</sup> "Working in the Americas." Financial Times
- <sup>46</sup> IDB website 2011. "Hire for Attitude, Train for Skills"
- <sup>47</sup> Les Schwalje. The Prevalence and Impact of Sills Gaps on Latin America and the Caribbean. Georgetown University. Feb 2011 (p20)
- <sup>48</sup> Schwalje, p. 23. 73 percent of firms surveyed said "they have a major or very severe skills gap (ratio of firms who said an inadequately educated workforce is a major or very severe obstacle to current operations of this establishment.

## 1. Introduction

A World Bank White paper on Labor Markets and School-to-Work Transition in Egypt finds that despite higher education achievements (from 14 to 19 percent for men and 9 to 14 percent for women) the vast majority of Egyptian youth are unable to find good jobs. Skills gaps are one of the three key factors that account for the joblessness, according to the paper's authors (Urdinola and Semlali, p.1). Egypt ranks second from the bottom in the World Economic Forum's report on Skills Gaps. (WEF, p.21) The World Bank 2002-2010 Enterprise survey results for Egypt indicate that 50.1 percent of respondents considered an inadequately prepared workforce a major constraint to their business. This matches the ILO's finding that almost 50 percent of employers find applicants' practical training received at school and ability to apply training to be very poor (El Zanaty, p.3). According to the World Economic Forum's 2010 Talent Mobility report, Egypt ranks second from the bottom of countries in terms of its competitiveness and ability to access talent (WEF, p.21). An Economist article reports that Egypt, like a number of other countries in the region and world, "faces a youth bulge in its population. 'It is the very sad story of squandered youth that stands at the heart of our region's epic tale of failure,'" according to the Jordanian founder of a global logistics firm, Aramex, citing unemployment rates of 24 percent in Egypt, 27 percent in Jordan, 30 percent in Tunisia and Syria, 39 percent in Saudi Arabia and 46 percent in Gaza (Economist Magazine, Sept 10, 2011).

Young people account for the largest segment of all unemployed Egyptians. The UNDP's Human Development Report for Egypt listed the 2009 the jobless rate for youth between the ages of 15-29 as 60.1 percent (EHDR, p. 151). According to the EHDR, in 2006 well over 80 percent of the unemployed were less than 29 years of age and 82 percent of unemployed had never worked before. (p.148). It is striking to note that young Egyptians are more educated than ever before, as the share of working-age population with university education in Egypt has increased significantly between the years 1998 and 2006 (Urdinola and Semlali, p1). Unemployment is much greater for Egypt's young women, as 80 percent of those aged 22-29 is out of the labor force, compared to only 13 percent of males (EHDR, p.148). According to a report by the American Chamber of Commerce, "Egyptians have counted on education to lead them to a public sector job. But graduates now wait years instead of months. In the meantime, they are underemployed, unemployed, or working in the informal sector." (AMCHAM Business Monthly cover page 10/11/11).

## 2. Scope of Case Study

A small number of employer surveys were found either as annexes or embedded in various reports from:

- The 2010 UNDP's Egypt Human Development Report (EHDR). While it does not provide employer surveys it contains a wealth of data about unemployment, the informal sector, and skill needs of Egyptian youth.
- A 2003 USAID study on ICT Penetration and Skills Gap Analysis. This study examined pharmaceutical, ready-made garments, and food and beverage as potential industries for implementing ICT applications. Researchers analyzed two to three Egyptian exporting industries and then analyzed up to 45 companies in those industries. (El Gabaly and Majidi, p.73)
- A 2007 ILO Employment Policy paper on the transition from school to work in Egypt. This survey targeted different groups of respondents, including 347 employers who operated in the country's formal and informal sectors. (El Zanaty, p.4)
- A 2010 report by the Fund for Agricultural Development. Although this study does not include employer surveys it does review how well vocational training meets skill needs in agriculture.
- A 2010 ILO report on Skills for Green Jobs in Egypt. This is an unedited country study that identifies development of strategic skills in several industries to respond to the environmental challenges facing Egypt. Mainly a desk study, this study also included interviews and consultations with the main stakeholders.
- The World Bank's 2002-2010 Enterprise survey for Egypt, which covered enterprises in the formal and informal sectors.

There are significant limitations to these surveys in that they do not sufficiently examine skills gaps in the informal sector, the largest "employer" of youth in Egypt (Urdinola and Semlali, p.4). The surveys also do not identify skills gaps for the country's fastest growing occupations such as farmers, street vendors, tax collectors (EHDR, p.160). And, perhaps most importantly, there are no skills gaps surveys for youth entrepreneurship in Egypt, as this form of employment is highly favored by Egyptian youth who cannot find work in the formal sector. (Urdinola and Semlali, p.1)

## 3. Key data on Egypt's labor market

Of the total population of 82 million, 26.2 percent are in the labor force. Official unemployment is estimated at 9 percent. Young people between 15-29 years of age make

up more than a quarter of the total population of Egypt (El Zanati, p. 10). Youth unemployment rates differ according to how unemployment is computed. The CIA Egypt 2010 Fact book states youth unemployment between ages 15-24 is 24.8 percent, while the UNDP states the jobless rate for youth aged 16-29 is 60 percent and over 80 percent for young women (EHDR, p.148). GDP/capita is \$6,200. 14 percent of the population works in agriculture, 37.5 percent in industry, and 48.3 percent in services. 20 percent of the country's population lives below the poverty line. 43.5 percent of the population works in the informal sector. About 22 percent of Egypt's population is school age 6-17. Another 10.5 percent are in the 18-22 group, of whom a third participate in higher education. 27 percent of young people aged 18-29 do not complete basic education. For those who are educated, returns to education have declined in terms of monetary rewards as well as in the type and quality of job a young person is able to obtain. This trend is even sharper for educated young people who were highly dependent on government employment in the past. (Urdinola and Semlali, p.1)

#### **4. What are the skills that young people need to have and to what extent are they lacking these skills?**

This review draws most heavily on an employer survey done by El Zanaty in 2007 for the ILO. The table found at the end of this section summarizes skills gaps found by additional, less comprehensive surveys. Overall, the majority of Egyptian employers have high expectation for jobseekers with respect to their education level. (El Zanaty p. 36). However, for the production/manual occupations, 40 percent of employers did not have any education level preference at all in hiring people, while 37 percent preferred to hire applicants with a high school/technical secondary diploma (El Zanaty, p.35). It is not clear whether this finding reflects these employers' less sophisticated production processes or whether employers consider practical training at school so poor that education does not matter for production work. Out of the 347 employers interviewed by El Zanaty, almost half (47.5 per cent) rated the practical training received at school of young workers or applicants as poor and their ability to apply knowledge learned at school in work as also very poor (41 per cent). Moreover, only 7 per cent of the young employees and self-employed youth interviewed

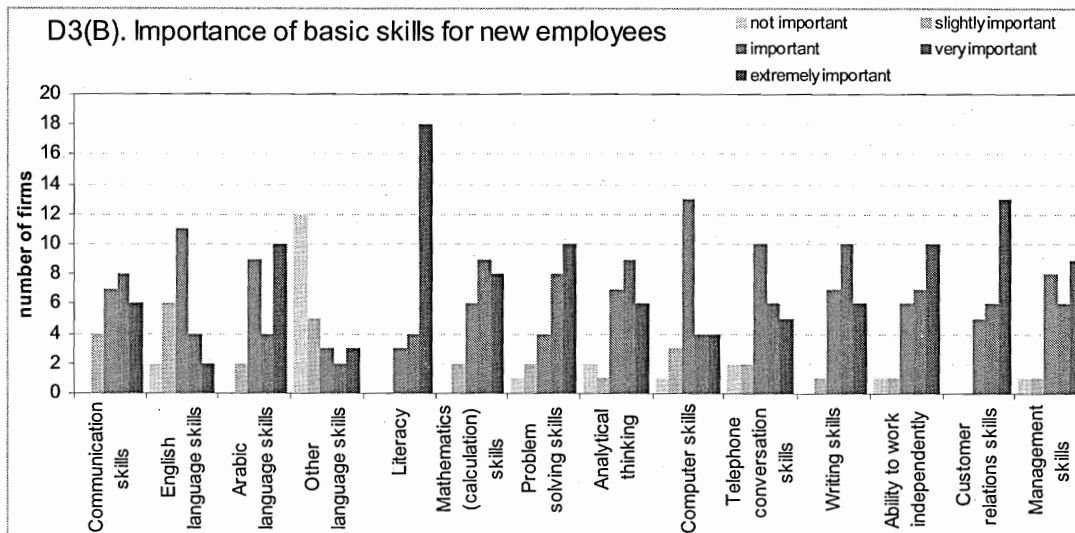
A National Skills Standards Project (NSSP) is being developed in three industries (mfg, tourism, building and construction) along with certification, assessment and accreditation mechanisms. To date the NSSP has developed standards for approximately 106 trades in these sectors. These have been handed over to Egypt's Industrial Training Council and responsible federations, according to the Industrial Training Council 2009 (EHDR, p.171). These standards could be used to identify skills gaps but do not appear to be available at the time of this writing.

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in this survey indicated that they had received training for their current activity (El Zanaty, p.10). According to the limited number of other employer surveys, gaps in employability are a major skills gap. The Education for Employment Foundation of Egypt as well as the El Zanaty study (p.37) identified key employability skills gaps in interpersonal relationships, assertiveness, teamwork, leadership, and professional ethics. (EFE Workplace Success, p.1). 90 percent state that practical training in schools is poor. Over 61 percent rate communication skills as either fair or poor, and 87 percent rate ability to apply knowledge learned at school as either fair or poor. Only 13.5 percent of applicants are considered “prepared” for work. Commitment and discipline of applicants were rated highest, at almost 63 percent. (El Zanaty, p.37) Employers also want young people to have the employability skills to manage themselves, and prize traits such as punctuality, reliability, commitment, honesty, and manners. (AED, pp.134-136).

As the following table shows, basic skills, such as literacy, computer skills, and customer relations were considered “very important” by a survey of 93 employers (AED 87).



Source GAP Analysis of the Technical Colleges, Ministry of Higher Education-USAID (AED)

With regard to technical skills gaps, a USAID funded Gap Analysis of the Technical Colleges AED surveyed 93 employers who claimed the most difficult vacancies to fill are positions for skilled workers. (AED p.204). This matches El Zanaty data where 81 percent of Egyptian employers assess the technical skill levels of their applicants as fair or poor. Perhaps to compensate for these gaps, over two-thirds of Egyptian employers prefer applicants to come with skills previously acquired, and over half consider

education the most important factor in hiring workers. (El Zanaty, p.38) It is interesting to note that fewer than 10 percent of Egyptian employers provide training - yet they prize previous experience. This leaves job seekers with the conundrum of needing experience to get a job and needing a job to get experience.

94 percent of employers in the AED survey asserted that skill requirements had changed over the previous two years and that the primary reasons are increases in technology, competition, customer demand, change in workplace organization and the need for increased quality of goods and services.

With regard to skills gaps in the informal sector, several of the surveys report that young people need additional skills to succeed in the informal sector and that training programs must take the needs of women into account (Hartl, p.2). A rigorous analysis of skill needs in the informal sector does not seem to be available, and it is not clear to what extent employers in the informal sector were consulted on skill needs. The various reports concur that to succeed in the informal sector young people need far better entrepreneurial, business management and community development skills (El Zanaty, p. 41 and EHDR p.144) For example, the EHDR finds that 80 percent of youth think it is the responsibility of the government or policymakers to provide them with employment. (EHDR, p.136). EHDR suggests that franchising might be a most promising business model for youth (p. 144) in areas of in-home care, personal security, personnel placement, publishing, decorating, accounting and tax services; however, there is no discussion on skill needs required for success in such enterprises. In “Pathways out of Poverty,” Hartl states that not enough is being done on skills training in rural areas, particularly for women. (Hartl, p.2) Her desk study asserts that basic skills such as literacy and numeracy, as well as life skills must be included in any rural agricultural training program (Hartl, p.12).

### **Industry Sector Skills gaps**

The following table summarizes where employer surveys were found. Shaded areas reflect whether the sector is formal or informal. While the composition of enterprises was described, none of the surveys specified whether the enterprises came from the formal or informal sector. Given the types of occupations described in the surveys it would seem that the skills gaps reflect those in the formal sector.

Sectors	Managerial/Professional/University grads	Technical/technical schools	Entry/basic/basic education	Notes
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Sectors	Managerial/Professional/University grads	Technical/technical schools	Entry/basic/basic education	Notes
Agriculture	Better qualified managers <sup>1</sup>	Marketing, production, understanding and making regulation, quality control		General statement in status report – <i>no data on formal/informal sector distribution</i>
Agriculture I <sup>2</sup>			Literacy, training, child labor, bird flu, awareness training	<i>Informal sector</i>
Banking and Financial Services (booming sector) <sup>3</sup>		Technical bank skills, soft skills, English language, customer service	Vocational and entrepreneurial skills, customer service skills, life skills	<i>Data derived from interviews with local employers. Local and international banks growing exponentially, some opening tens of branches a month</i>
Pharma mfg. <sup>4</sup> , Food&Beverage,	Project management skills	ICT applications External consulting support to	Business and personal communications skills	<i>Data derived from 45 exporting companies.</i>

<sup>1</sup> Netherlands Organisation for international Cooperation in Higher Education. (NUFFIC) Feb 4, 2011  
<http://www.nuffic.nl/international-organizations/services/capacity-building/niche/country-list/egypt/agriculture>

*shading reflects informal sector – footnotes reflect sources in Table*

<sup>2</sup> Maria Hartl. Gender Pathways Out of Poverty: Rural Employment. International Fund for Agricultural Development, 2009

<sup>3</sup> EFE Egypt Report 2010

<sup>4</sup> Moustafa El-Gably and Mehdi Majidi. Partners for a Competitive Egypt – MDI Phase 2 Pal-Tech, Inc. 263-M-00-02-00013-00. 2003.

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Sectors	Managerial/Professional/University grads	Technical/technical schools	Entry/basic/basic education	Notes
Ready-to-wear garments  <i>ALL 3 from ICT perspective</i>		develop and manage the sector B2B technologies and complex security and enterprise systems Business writing in Arabic and English, other language skills		Large, committed corporations who operate globally through joint ventures, associations and partnerships, regionally and international markets
Textiles	Textile Merchandising	Fundamentals of textiles, English language, integrated business skills	Soft skills, customer service, professionalism, leadership, teamwork	<i>Data derived from 45 exporting companies.</i> 100,000+ unfilled positions, industry growing at 30percent/year
Manufacturing sub sectors: <sup>5</sup>		Electrical and mechanical and electronic maintenance, workshop equipment operations, electrical welding, boiler maintenance		The labor market lacks technical and skilled workers in number and competence. This forces employers to either turn down

<sup>5</sup> Egypt Human Development Report. UNDP 2010

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Sectors	Managerial/Professional/University grads	Technical/technical schools	Entry/basic/basic education	Notes
				production orders and refrain from expanding their business.
Green Jobs – green collar occupations <sup>6</sup>	Management of environmental agency	Conduct energy audits, calculate energy consumption, improving energy efficiency, CP practices, plant assessment technology		No entity collects systematic data on skills needed for green jobs. Egypt is well positioned to develop green collar jobs
-Energy		Designing, installing, operating and maintaining wind farms		
-Mfg.	Engineering skills wind farm components	Technicians and supervisors in different components of wind farms		
Organic Farming	Organic farm management and practices, natural land management	Pesticide operators, Plat and machine operators, audit and certification		<i>No data on informality</i>
Entrepreneurship <sup>7</sup>	Need business development skills. Only 20percent			<i>Informal Sector (assumed) Of</i>

<sup>6</sup> Skills for Green Jobs in Egypt. Unedited background country study. ILO Skills and Employability Department 2010

<sup>7</sup> Egypt Human Development Report 2010

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Sectors	Managerial/Professional/University grads	Technical/technical schools	Entry/basic/basic education	Notes
	reported receiving assistance or knowledge transfers in project management and the development of technical skills required for their business.			the small no of self employed youth 77percent did not get help to start their business from friends or family

### Conclusion

The Egypt case should demonstrate that returns to education are not automatic if the education is not linked to the needs of the country's labor market. "Education for All" must include the question, "Education for What?" Asking this question has implications for donors and policymakers who may want to invest in the social dialogue needed to bring educators and employers together to set shared goals for employability and better technical skills. This type of social dialog is especially needed in countries such as Egypt where there is no such history or tradition. More analysis of skills gaps needs to be done, especially in the growth sectors of Egypt's economy and in the informal sector, where most of Egypt's young people find work either out of choice or necessity. Skill standards are being developed for three key sectors; it remains to be seen if these will be linked to the country's education and training system so that the talent of Egypt's young people can be unleashed, especially in the area of better employability skills, are best learned through application, or learning by doing.

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## Introduction

The August 17, 2010 headline in India's Economic Times announces: "India's economy to become world's fastest growing economy by 201 percent." The article goes on to say that "driven by a sterling demographic dividend, continuing structural reform and globalization, India is poised to accelerate its growth rate even as China will cool down to a more sedate 9 percent by 2012." From renewable industries to logistics, ICT and construction, India's demand for higher skills occurs at a time when 90 percent of India's population works in the informal sector, much of it consisting of basic agriculture and services such as automotive repair and logistics that have traditionally required low skills and pay low wages (CII Logistics, exec summary and Automotive Sector Reports, p.5).

The additional skill needs to satisfy the nation's more sophisticated demand for automobiles, travel and tourism, health care, ICT, and many other sectors seem staggering. For example, India's National Skill Development Corporation (NSDC) has forecast an incremental shortfall of 240-250 million people by 2022 in high growth sectors of the Indian economy and the informal (unorganized) sector, the biggest generator of employment in the country (Hazarika, p.10). However, skill gaps in the informal sector have to close if growth is to be inclusive and provide opportunity for the majority of India's young people. The Indian Confederation of Industries (CII) is conducting analysis of skill needs in various high growth sectors and already has completed a number of studies that confirm that skills gaps in employability, soft, technical, and English language skills are extensive and are found at all levels of enterprises – from entry level to professional and upper levels and with all levels of education – basic through university. This finding is echoed by the World Economic Forum's Global Talent Mobility report. A recent and rigorous analysis by the World Bank finds serious skills gaps among India's engineers, who, according to employers, lack "all important" soft skills and higher order thinking skills. (Blom and Saeki, Abstract).

A 2011 survey by Manpower Group (p.18) found that 67 percent of employers in India surveyed report they have difficulty in filling jobs, placing India second highest and immediately behind Japan (Manpower, p.4) in their survey of 40 countries. This number, according to the Manpower report, is a dramatic surge of 51 points in one year over a 16 percent difficulty rating for 2010. The most difficult to fill jobs, according to employers on a global basis are technicians, sales representatives, and workers in the skilled trades. (Manpower, p.6) Increasing the skills of India's labor force has to happen on two fronts – upgrade skills to help improve the productivity of the vast majority who now work in the informal sector and produce more people with the higher level skills needed for productivity improvements in the booming formal sector. "As India embraces global technology, skill enhancement becomes mandatory to improve technology and productivity. (CII website, "needs for skills"). The Confederation of Indian Industry (CII) states that skills gaps remain one of the major constraints to continued growth of the Indian economy. (CII website). The mismatch between supply and demand for skills has

consequences: in 2010 some 63 million people will be unemployed. This is more than the entire population of the UK, France and Italy. During roughly the same time period, Tata consultancy Services was scouring the country so as to triple its existing workforce of 72,000 to try to reach its financial goals in the next four years (Morris, p.2). The increase in employment opportunities is projected to grow almost exponentially, according to the various CII forecasts. For example, in the renewables sector experts forecast a nine-fold increase in employment to 20 million jobs by 2030. At the present time, industry finds it difficult to employ the graduates passing out of the Universities as well the ITI's, as they often do not have the requisite skills (RE Report, p.9).

According to the CII, hidden underemployment is probably as large as unemployment. The enormous numbers of un-and under employed can become a demographic boon – but only if the skills gaps are closed. In his article, “The India Skills Gap,” Richard Morris suggests that a part of the skills gap problem is that 40 percent of people over 15 years of age are illiterate, and fewer than 10 percent of India's youth go on to higher education. (Morris, p.2) With half of India's population under the age of 25, closing the skills gap will require a transformation of how the country's young people are educated and prepared for work.

A national effort appears to be underway to close the skills gap. India's National Skill Development Corporation is conducting skills gaps analyses in most of India's states and in high growth industry sectors. The Federation of India's Chambers of Commerce & Industry is bringing industry and academia together to bridge the skills gap. City and Guilds, the UK workforce powerhouse, is working with the EU and CII to close the skills gap in four different types of workforce: white collar salaried professionals; grey collar knowledge workers who need ICT and problem solving skills; blue collar workers who perform manual labor and earn hourly wages who need shop floor and manufacturing skills. The fourth category, rust collar, consists of skilled workers who now work in the informal sector in construction, agriculture, and related trades. (CII Website, Four-Collar Workforce). According to CII this segment is mainly comprised of school dropouts with no employable skills. CII states the majority of the Indian population is covered under this category, and will be the special focus of the CII's Skills Development Initiative (CII Website Four Collar Workforce).

### **Scope of this study**

A number of documents and studies were examined for this case study, including

- A 2011 World Bank research working paper on Employability and Skill set of newly graduated engineers in India. The Federation of Indian Chambers of Industry and the World Bank conducted an on-line employer satisfaction survey from September to November, 2009. 157 employers across sectors and regions in India fully completed the questionnaire. The questionnaire (Annex 3) has a list of skills that engineering graduates are typically expected to possess at graduation. Employers were requested to rate on a scale from 1 (not at all) to 5 (extremely) how important each skill is for an engineering graduate to be an effective employee, (Importance Level). The survey also asked employers to rate their satisfaction level with regard to each of the skills.

- A 2010 Skills Gap Survey for the Indian Banking, Financial Services and Insurance Sector, conducted by the Higher Education Forum, ISOS and Westat. Data were collected from 113 individuals from 74 organizations in the BFSI sector. This included one HR representative from each of the organizations involved in the study and 39 senior executives who directly supervise newly hired MBAs from these 74 organizations. A summary their skill gaps can be found in the Table at the end of this case.
- A 2007 Skills gaps study in the Indian Logistics sector conducted by KPMG with the Confederation of Indian Industry and its Logistics Center. Researchers met with 11 executives representing the various subsectors, including rails, air, sea, major corporations and associations. A list of skills gaps identified in the report can be found in the Table at the end of this case.
- A 2008 skills gaps study in the Indian Automotive Service Sector, conducted by KPMG and the Confederation of Indian Industries (CII). This report was prepared to serve as a background paper to CII's conference on Automotive Service, AutoServ2008. The report states that its findings are based largely on "primary inputs from senior service personnel across several OEMs and dealerships, as well as independent service providers, representing a wide cross section of the industry." (Background Section) A list of skills gaps in this sector can be found in the Table at the end of this case.
- (No date available) A Report for the National Skills Development Council on HR and Skill Requirements in the Auto and Auto Components Sector. (No methodology available). A list of skills gaps in this sector can be found in the table at the end of this case study.
- (No date available) A Report for the National Skills Development Council on IT and ITES Industry Sector (2022), conducted by ICRA Management Consulting Services. NO data on methodology available
- (No date available) A Report for the Federation of Indian Chambers of Commerce and Industry, titled Industry – Academia Convergence "Bridging the Skill Gap." This report examines the needs of some of the high growth sectors such as biotechnology pharmaceutical and IT sectors of India, and what the skills gaps imply for higher education. The report cites interview findings with a number of key corporate leaders in India and in Multinationals; however, there is no Methodology section.
- A 2010 Confederation of Indian Industry Final Report on Human Resource Development Strategies for Indian Renewable Energy Sector. The findings come from a combination of a literature search, stakeholder meetings and an analysis of 110 questionnaire results. An additional 75 members of CII were interviewed. The data gathered were reviewed by the Ministry of Renewable Energy. A list of skills gaps for this sector can be found at the end of this case study.

### **Key data on India's labor market**

India's population is the second largest in the world. Of the total population (2011 est.) of 1,189,172,906 billion, an est. 500 mil is in the labor force. The CII estimates approximately 4.2 million in rural areas are unemployed, with 308 million unemployed in

urban areas (CII website, Need for Skills Development). The country's unemployment rate for youth aged 15-24 is highest for all age groups (Dev and Venkatanarayana, p 11). There are no agreed upon estimates for underemployment, but underemployment is likely much higher according to Watch, a Mumbai-based voluntary association. (Aggarwal, p1). The India Onestop website states that unemployment is not a true indicator of the gravity of the unemployment problem. 52 percent work in agriculture, 14 percent industry, 34 percent services. 90 percent of the labor force works in the informal sector. Half the population is under 25 years of age. Sixty percent of India's workforce is self-employed, many of whom are very poor (Indiaonestop). Nearly 30 percent are casual workers. Only about 10 percent work in the formal sector, of which 40 percent are employed in the public sector.

India's industry includes traditional village farming, modern agriculture, textiles, chemicals, food processing, steel, pharmaceuticals, transportation equipment, automotive, cement, mining, petroleum, machinery, cement, software, and ICT services.<sup>1 2</sup> GDP per capita is \$3500. Services are the major source of economic growth; they accounts for more than half of India's output

Over 70 percent of the labor force in the formal and informal sectors is either illiterate or educated below the primary level (India Onestop website). 61percent of people over 15 can read and write. Estimates of youth unemployment differ between 30-10.53 percent (Ray and Chand, p. 266 and CIA Factbook,) but it is likely that actual figures are much higher, esp. if underemployment is included (Dev, p.9); of the 300 million children between 6-16 only 10 percent will complete high school and go on to further education and training. The improvement in literacy rate among the youth has shown a significant increase of about 26.4 percentage points during the last two decades, from 47.8 percent in 1983 to 74.1 percent in 2004-05 (Dev, p. 15). India has the highest percentage of youth in extreme poverty, as compared to China, Nigeria, Congo, Bangladesh and other countries. (Sarkar, p. 4)

### **What are the skills that young people need to have and to what extent are they lacking these skills?**

Although the skills gaps in the table below show skills gaps for new engineering graduates from the perspective of would-be employers, (Blom and Saeki, p 12) this list of skills gaps is useful for several reasons: 1) skill criticality was factored using regression analysis, 2) employability skills are shown to be Factor 1, demonstrating that the soft skills are the most important gap from the perspective of Indian employers even though their applicants have completed tertiary education. 3) engineering is a core capacity that is applied in many different industries, such as automotive, construction, IT, logistics, renewable energy, and 4) even though these skills were identified by employers as most lacking in new entrants to engineering occupations, the core employability and communication skills would help youth do more productive work and presumably better paid work in the informal economy as well where entrepreneurship, soft skills and

technical skills are also in demand (Sarkar p.10). For example, the logistics skills gaps study finds that the entire sector must transform itself from closely held “Mom and Pop” businesses with relatively low skills to the high skills demanded by industry. (CII Logistics, p. 16). The Automotive sector report (p.11) finds that getting technicians with the right skill set is a problem.

The table at the end of this section confirms that the employability skills (sometimes called core, applied or soft) are strikingly similar, and that differences show up in the various technical skills required by employers in the various sectors of India’s economy. It seems that, like their peers in other countries, employers want to hire first for attitude, and then for technical abilities.

Core Employability Skills Factor1	Professional Skills Factor 2	Communication Skills Factor 3
Integrity	ID, formulate and solve technical/engineering problems	Written Communications
Self-Discipline	Design a system, component, or process to meet desired needs	Reading
Reliability and entrepreneurship	Use appropri. Tools, equipment, technologies	English language skills
Self-motivation, flexibility, creativity	Apply knowledge of math, science engineering	Verbal communications
Teamwork and empathy	Customer Service	Advanced computer skills
Understands and takes direction		

Blom, Andreas and Saeki, Hiroshi. April, 2011. Employability and Skill Set of Newly Graduated Engineers in India. P 12

## Conclusion

Closing the skills gaps of India’s youth so that they can take advantage of the increased demands for higher skilled jobs in the booming economy will require a complete overhaul of the country’s vocational and technical education system. For inclusive growth, the education and training system must provide easy horizontal and vertical mobility. Movement from vocational school to technical college and university should be as seamless as possible. Many industries and occupations facing critical shortages and gaps in skills are not as sought after by youth, possibly because of low pay, prestige, or working conditions. Fortunately for India, its Federation of Industries and Employers are identifying skills gaps and academic institutions and industry federations are building bridges to link universities to industry needs. This review of the literature did not find significant evidence of the same kind of intensive bridge building between secondary schools, vocational schools and industry, except in the work done by City and Guilds. It would seem that more bridges are needed to prepare those young people who cannot go

to university but who could fill many of the skilled technical jobs in India's booming economy.

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## 1. Introduction

According to the World Economic Forum's Talent Mobility Report, U.S. employers find skills gaps and shortages in virtually every sector of the economy (WEF, p. 20). A 2009 American Society for Training and Development survey finds that jobs are changing and the education system is not keeping up with the changes. According to ASTD's poll of 1,179 U.S. organizations about the extent of their skills gaps, more than half the organizations surveyed (51 percent) said the skills of the current workforce do not match changes in company strategies, goals, markets or business models. 46 percent of organizations surveyed stated that "basic skills – the traditional building blocks of business leverage competencies are lacking" (ASTD, p.8). Similarly, a 2011 Manpower Group survey of 40,000 employers in 39 countries reports a dramatic surge in the U.S. in terms of difficulty in filling positions, with the difficulty increasing from 14 to 52 percent from 2009-2010 (Manpower, p.2). A 2005 Skills Gap report by Deloitte and the National Association of Manufacturers (NAM) shows 81 percent of respondents are facing "a moderate to severe shortage of qualified workers." The Deloitte and NAM report concludes "the vast majority of American manufacturers are experiencing a serious shortage of qualified employees, which in turn is causing significant impact to business and the ability of the country as a whole to compete in the global economy" (NAM, p.1).

In terms of skills gaps among production employees, 90 percent of respondents indicated a moderate to severe shortage of qualified skilled production workers, and 65 percent reported a moderate to severe shortage of scientists and engineers. The impact of the science and engineering skills gap appears to be more severe for larger firms, as companies with over 500 employees reported a 74 percent shortage of scientists and engineers. While employees with technical skills are in especially short supply according to the NAM survey, approximately 40 percent of responses indicate skill gaps in the area of soft skills, such as customer service and sales and marketing (NAM p. 4). These skills gaps reflect both gaps in knowledge and skills, as well as actual shortages, as many U.S. jobs will require more education and training in the next five years. The U.S. Department of Education's National Center for Education Statistics finds that 12 of the nation's 20 fastest-growing occupations will require an associate degree or higher by 2015 (ASTD p 9).

In 2006 the U.S. oldest and largest business association, The Conference Board, surveyed employers on their skills gaps and issued a report card for the nation's high schools and two-and four-year colleges (TCB, p. 41). In terms of the "overall preparation" level of the workforce, the report found that 42.4 percent of respondents rated high school graduates "deficient." Among four-year college graduates, only 23.9 percent are rated "excellent," 64.5 percent are rated "adequate" and 8.7 percent are rated "deficient."

According to the various surveys reviewed for this case study, in the U.S. skill deficiencies decrease with education levels. For high school graduates, 80.9 percent of employers reported deficiencies in written communications; 70.3 percent in professionalism; 72 percent in leadership, 61.7 percent in foreign languages, and 69.6

percent in critical thinking. For graduates of four-year colleges, 27.8 percent of employers found significant deficiencies in written communication, 23.8 percent in leadership and 18.6 percent in professionalism. 40.7 percent of college graduates were rated deficient in foreign language skills, and 26.2 percent in English. A 2011 Report by the Harvard Graduate School of Education concludes that focusing on college readiness without teaching the soft skills does not equip young people with all of the skills and abilities they will need in the workplace, or to successfully complete the transition from adolescence to adulthood (HGSE, p.4). In summary, the skills gaps affect companies' ability to compete. Over half, (54 percent) of respondents surveyed by the National Association of Manufacturers stated that the skills gap has a high to moderate impact on their business (NAM, p5).

The 2009 Corporate Voices report, "Ready by 21" (all youth ready for college, work, life) finds that 97 percent of business leaders surveyed agree that their organizations consider workforce readiness a critical business imperative. This report found that almost half of surveyed employers are providing some type of workforce readiness, or remedial training for their employees. The report reflects employer frustrations with their entry-level workforce. The report finds that employers "are willing to conduct and produce their own trainings in order to provide their workers with the skills they need to succeed" (Corporate Voices, p. 3).

This case study draws most heavily on the Conference Board report as it identifies what type of skills employers consider as being most important for young people entering the labor market, and to what extent employers consider young entrants to the labor market to be lacking in these skills.

## **2. Scope of the Case Study**

The study is based on the following surveys:

*-A Conference Board (TCB) survey done in collaboration with the Partnership for 21<sup>st</sup> Century Skills, Corporate Voices for Working Families, and the Society for Human Resource Development. This study was conducted in 2006 among executives from 400 employers across the country. This survey asked respondents whether or not the skill levels that entrants are currently bringing to their jobs are deemed "excellent" "adequate," or "deficient;" what basic knowledge and applied (soft) skills they consider important, how the importance of these skills may change over the next five years, what emerging content areas are considered most critical over the next five years, and what are the nature and cost of remedial training programs. This report focuses exclusively on young entrants into the labor market and provides a report card for the nation's graduates from high school, two and four-year colleges graduates. A report card is also provided for manufacturing compared to other industries and health care, compared to other industries (TCB 41).*

*-A second survey, conducted in 2009 by the American Society for Training and Development (ASTD) is part of a White Paper, titled, Bridging the Skills Gap: New*

Factors Compound the Growing Skills Shortage. This paper uses data from several sources such as the Bureau of Labor Statistics, ASTD State of the Industry reports, and includes a brief poll conducted by ASTD of 1,179 U.S. organizations about the extent of their skill gaps.

-A third survey, conducted by Deloitte for the National Association of Manufacturers (NAM) in 2009 with 800 respondents who were CEOs, COOs, Presidents, or senior executives of HR. The majority were small and medium size enterprises with fewer than 500 employees.

-A fourth report (*Corporate Voices, 2009*) surveyed nearly 150 business leaders of whom the majority of respondents had been employed less than ten years with their organizations, but had 1-20 years experience in their respective fields. All were employed by a mix of large, medium and small businesses.

-A fifth report (*Pathways to Prosperity, 2011*) comes from Harvard's Graduate School of Education. While it does not survey employers, it has valuable data on how misguided thinking about skill needs helps produce the skills gaps and the need for learning soft skills in the K-12 system.

Despite their high quality, these reports miss a part of the total picture of skills gaps as they do not reflect the skills needs of a small but growing movement of the U.S. economy, called by some, "The Artisan Economy." The artisan economy can be characterized by "going local, going green with locally distinct, small scaled, highly flexible grassroots businesses that rediscover place, local knowledge, craft, and the integrity of work. (Heying, pps 34-38). According to Heying, author of "From Brew to Bikes, Portland's Artisan Economy," artisan-entrepreneur economies are springing up in a number of U.S. cities. This movement is interesting in that artisan training has a low barrier to entry and consists of a "combination of apprenticeship, learning by doing, and skill sharing among a community of practitioners." (Heying, p.45). Artisan or not, according to a 2005 poll from Junior Achievement, 68.6 percent of teenagers between 18-34 interviewed had an overwhelming interest in becoming entrepreneurs, "however, youth rarely receive any information about entrepreneurship as a career option" (USDOL website).

Apart from the National Association of Manufacturers (NAM) survey, skills gaps in the nation's small businesses are not fully represented by the above surveys, which, except for the NAM survey, largely reflect larger, corporate employers. This is an important information gap because small businesses provide most first time job opportunities for young people (SBA.gov website). In the U.S., small businesses employ more than 50 percent of the private workforce, generate more than half of the nation's gross domestic product, and are the principal source of new jobs in the U.S. economy (US Small Business Administration ODEP). The NAM report includes data from the many small businesses in the U.S. that are a part of the manufacturing industry's supply and value chains.

### 3. Key data on US Labor market

The U.S. total population is 310,232,863 (July 2010 est.), and the U.S. labor force is 153.9 million. The current unemployment rate is 8.5 percent. However, unemployment for youth in 2010 rate was more than three times higher, at 28.6 percent. This figure hides the fact that employment among youth aged 16-19 has plummeted in the past ten years, falling from 45.2 percent in 2000 to just 28.6 percent in June 2010. Only 9 percent of low-income black teens are employed, (15 percent of low-income Hispanic teens), in comparison to 41 percent of white teens whose families earn upward of \$75,000/year. (HGSE, p.4). 15.1 percent of the population lives below the poverty line.

Less than one percent (0.7) of the U.S. labor force works in farming, forestry, and fishing; 23.3 percent works in manufacturing, extraction, transportation, and crafts; 37.3 percent works in managerial, professional, and technical jobs; 24.2 percent in sales and office; and 17.6 percent work in other services.

According to UNESCO's website, the U.S. has the second highest number of higher education students in the world: 4.75 percent of the population or 14-plus million. 19 percent have attended college but have no degree. 7.4 percent have associate degrees, 17.1 percent have a Bachelors Degree, and 9.9 percent have a graduate or professional degree. Graduation rates for high school and college have declined since 2008 [^](http://www.aneiki.com/universities.html) <http://www.aneiki.com/universities.html>. (UNESCO). The U.S. also has the highest college drop out rate in the industrialized world. (HGSE conversation with Andreas Schleicher, OECD, p10).

### 4. What are the skills that young people need to have and to what extent are they lacking these skills?

Although each survey defines employability skills differently, skills gaps in applied (soft) skills rank far higher (78-64 percent) than skill gaps in traditional subject areas (math, science, humanities (63-9 percent), (TCB, p.49). The consistent and dramatic demand for employability skills (ASTD, p.9) probably reflects a shift in how work is done in the U.S. as traditional production and service sector work shifts to knowledge work (ASTD. P.5). "Performance and economic competitiveness are increasingly determined by investment in 'knowledge based' or intangible assets such as R&D, design, software, human and organizational capital, and brand equity and less by investment in physical assets such as machines, buildings, and vehicles." (Brinkley, p5) and (TCB Innovation Working Group 2008).

The table on the following page shows what skills are considered "deficient" by U.S. employers at different levels of education (TCB, p. 41).

For example, 80 percent of employers consider high school graduates "deficient" in written communication; this number drops to 47 percent for graduates of two-year

colleges and 27.8 percent for four-year college graduates. It is worth noting that skills gaps in “professionalism and work ethic drop from 70.3 percent to 21 percent for two-year college graduates. However more than a quarter of employers rate four year college graduates as deficient in written communications, and almost a quarter (23.8 percent) find these graduates deficient in leadership skills. Almost 60 percent of employers consider high school graduates deficient in lifelong learning and self-direction, yet these are critical employability skills (Aring, 1998). This finding has serious implications as only 7.4 percent of the population completes an AA degree (UNESCO).

As the following table shows, graduates of four-year college entering the workforce are the only group for whom the “excellence” list is longer than the “deficiency list.” However, the finding that only a quarter of college grads are considered “excellent” in skills that are critical to knowledge work should raise serious concerns about the ability of companies to maintain their competitiveness, which companies rate as “very” or “most important” by 73 percent of CEOs in the TCB survey.

### Workforce Readiness Report Card for New Entrants to Workforce

Assessment of new workforce entrant readiness on “very important” skills (basic knowledge and applied skills rated as “very important” by a majority of employer respondents). “Very Important” skills are placed on the Deficiency/Excellence Lists if at least 1 in 5 respondents report entrant readiness as “deficient”/“excellent.”

#### High School Graduates

##### Deficiency

Written Communications	80.9%
Professionalism/Work Ethic	70.3
Critical Thinking/Problem Solving	69.6
Oral Communications	52.7
Ethics/Social Responsibility	44.1
Reading Comprehension	38.4
Teamwork/Collaboration	34.6
Diversity	27.9
Information Technology Application	21.5
English Language	21.0

##### Excellence

No skills are on the Excellence List for new entrants with a high school diploma.

#### Two-Year College/Technical School Graduates

##### Deficiency

Written Communications	47.3%
Writing in English	46.4
Lifelong Learning/Self Direction	27.9
Creativity/Innovation	27.6
Critical Thinking/Problem Solving	22.8
Oral Communications	21.3
Ethics/Social Responsibility	21.0

##### Excellence

Information Technology Application . . . . 25.7%

#### Four-Year College Graduates

##### Deficiency

Written Communications	27.8%
Writing in English	26.2
Leadership	23.8

##### Excellence

Information Technology Application	46.3%
Diversity	28.3
Critical Thinking/Problem Solving	27.6
English Language	26.2
Lifelong Learning/Self Direction	25.9
Reading Comprehension	25.9
Oral Communications	24.8
Teamwork/Collaboration	24.6
Creativity/Innovation	21.5

#### “Very Important” Skills Considered for:

**High School Graduates Report Card** (% very important): Professionalism/Work Ethic (80.3%); Teamwork/Collaboration (74.7%); Oral Communications (70.3%); Ethics/Social Responsibility (63.4%); Reading Comprehension (62.5%); English Language (61.8%); Critical Thinking/Problem Solving (57.5%); Information Technology (53.0%); Written Communications (52.7%); Diversity (52.1%)

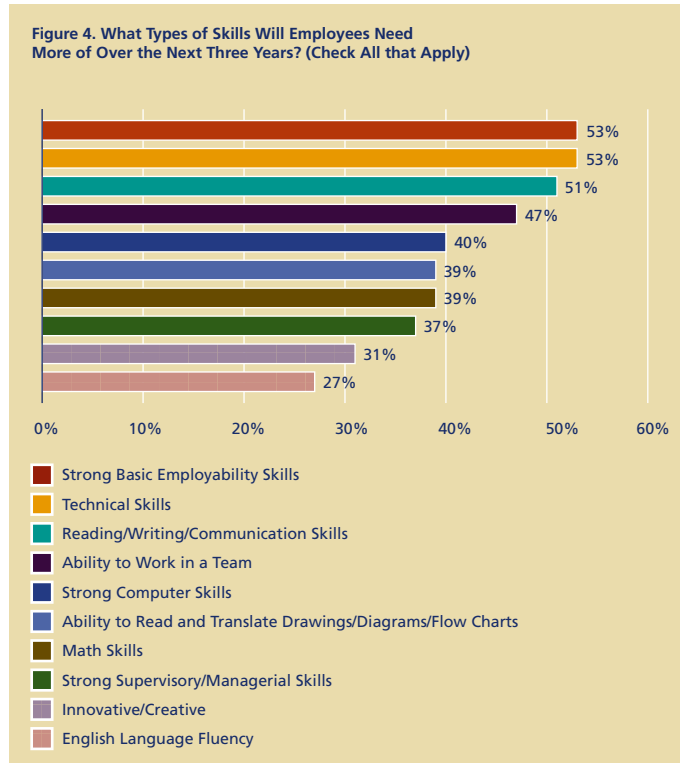
**Two-Year College/Technical School Graduates Report Card** (% very important): Professionalism/Work Ethic (83.4%); Teamwork/Collaboration (82.7%); Oral Communications (82.0%); Critical thinking/Problem Solving (72.7%); Reading Comprehension (71.6%); Written Communications (71.5%); English Language (70.6%); Ethics/Social Responsibility (70.6%); Information Technology (68.6%); Writing in English (64.9%); Lifelong Learning/Self Direction (58.3%); Diversity (56.9%); Creativity/Innovation (54.2%)

**Four-Year College Graduates Report Card** (% very important): Oral Communications (95.4%); Teamwork/Collaboration (94.4%); Professionalism/Work Ethic (93.8%); Written Communications (93.1%); Critical Thinking/Problem Solving (92.1%); Writing in English (89.7%); English Language (88.0%); Reading Comprehension (87.0%); Ethics/Social Responsibility (85.6%); Leadership (81.8%); Information Technology (81.0%); Creativity/Innovation (81.0%); Lifelong Learning/Self Direction (78.3%); Diversity (71.8%); Mathematics (64.2%)

Percentages calculated from among the number of respondents to each question.

Number of respondents varied for each question, ranging from 347 to 357 for high school graduates; 351 to 360 for two-year college/ technical school graduates; 400 to 413 for four-year college/university graduates.

The following chart from the National Association of Manufacturers supports the findings in the TCB study in terms of how many employers rank soft (applied) skills as critically important (NAM, p.8).



In all five reports examined for this case study, skills gaps are traced back to the uneven quality of the education system – which fails young people at the high school level, where only 40 percent complete high school, and at higher levels, where 60 percent have some college experience but no degree (HGSE, p10). Interestingly, in the reports there is little if any discussions of the part employers have played in failing to close the skills gaps. Perhaps in response to the poor performance of education a generation ago, educators and policymakers postponed having to make systemic changes by promoting college for all. The Harvard report states that this strategy has created a “dropout nation” (HGSE, p.9). Moreover, the recent push for better accountability in education has shown that the public education system fails to equip many youth with even basic math and reading skills, as well as persistent gaps in racial achievement. The Harvard report concludes that after billions of dollars expended it is time to forge new and different pathways for success – pathways where students can see a “clear and transparent connection between their program of study and tangible opportunities in the labor market” (HGSE, p11). All the reports call for increased stakeholder dialog with education and policymakers to close the skills gaps.

### Conclusion

The skills gaps in the U.S. significantly lower U.S. companies’ ability to compete, according to every survey reviewed. This has enormous implications for the country’s

education and training system, which must find new and better pathways from school to work. The skills gaps also have implications for how the nation's employers relate to the country's education and training system, as the education system plays an increasingly important part of companies' human capital value chains.

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