

# Skilling up Vietnam: Preparing the workforce for a modern market economy

## Vietnam Development Report 2014

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### Main Report

November 2013



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## Executive Summary

Education has played an important role in making Vietnam a development success story over the last twenty years. Vietnam's rapid economic growth in the 1990s was driven predominantly by productivity increases that came in the wake of a rapid shift of employment out of low productivity agriculture into higher productivity non-farm jobs. Vietnam's economy began to industrialize and modernize. Poverty fell dramatically. And education played an enabling role. Vietnam's committed effort to promote access to primary education for all and to ensure its quality through centrally setting minimum quality standards has contributed to its reputation for having a well-educated, young work force. New evidence presented in this report shows that literacy and numeracy among Vietnam's adult workforce is widespread and more so than in other countries, including wealthier ones.

But Vietnam is facing new challenges. The pace of economic growth and the reallocation of jobs away from agriculture have slowed in the wake of structural problems in the enterprise and banking sectors and macroeconomic turmoil in recent years. Capital investments, and not productivity, have become the main source of economic growth. This is not a sustainable model for ensuring continued rapid economic growth. While the size of its workforce is still expanding, its youth population is shrinking. This means that Vietnam cannot continue to rely on the size of its workforce for continued success; it needs to focus on making its workforce more productive and alleviating skills barriers to labor mobility.

### **A skilled workforce is central to Vietnam's economic modernization**

Equipping its workforce with the right skills will, therefore, be an important part of Vietnam's effort to accelerate economic growth and further its economic modernization in the coming decade and more. Judging by the experience of its more advanced neighbors, economic modernization will involve a shift in labor demand from today's predominantly manual and elementary jobs towards more skill-intensive non-manual jobs, from jobs that largely involve routine tasks to those with non-routine tasks, from old jobs to "new" jobs. And "new" jobs will require new skills.

These new jobs can already be found in today's labor market, but Vietnam's employers struggle to find the right workers for them. Despite impressive literacy and numeracy achievements among Vietnamese workers, many Vietnamese firms report a shortage of workers with adequate skills as a significant obstacle to their activity. A majority of employers surveyed for this report said that hiring new workers is difficult either because of the inadequate skills of job applicants (a "skills gap"), or because of a scarcity of workers in some occupations (a "skills shortage"). Unlike many countries around the world today, Vietnam does not suffer from low labor demand; its employers are seeking workers, but they cannot find the workers that match their skill needs.

### **Wanted: Cognitive, behavioral and technical skills**

What skills are in demand in Vietnam's non-agricultural labor market today? Employers identify job-specific *technical skills* as the most important skill they are looking for when hiring both white and blue collar workers. Such technical skills include, for example, the practical ability of an electrician to do the job. But employers are equally looking for *cognitive skills* and *behavioral skills*. For example, next to job-specific technical skills, working well in teams and being able to solve problems are considered important behavioral and cognitive skills for blue collar workers. When employers hire white collar workers, they are expecting that they can think critically, solve problems, and present their work in a convincing manner to clients and colleagues.

In short, Vietnam's new jobs require that workers have good foundational skills, such as good reading ability. But in order to be successful in the future, workers also need more advanced skills that help them to be responsive to changes in workplace demands. Vietnam's education system has a strong track record in producing good foundational skills, but faces greater challenges in producing the advanced skills that will be increasingly demanded in coming years.

### **Three steps for a holistic skills strategy for Vietnam**

This report summarizes emerging evidence on the formation of cognitive, behavioral and technical skills. Cognitive skills formation is the most intensive in the very early years in life and continues through adolescence. Behavioral skills are also first formed in childhood, and continue to evolve throughout adult life. Moreover, stronger cognitive and behavioral skills will help workers to continuously update their technical skills during their working lives. This will rise in importance as Vietnam's population ages, as production in Vietnam becomes more technically sophisticated and as workers need to catch up with technological changes occurring during their longer working lives. What does this mean for Vietnam's education and training system? This report proposes a holistic skills strategy for Vietnam which looks at today's workforce as much as the future workforce. It entails three steps:

#### **Step 1: Promoting school readiness through early childhood development**

Vietnam can do more to promote school readiness through early childhood development interventions. Efforts at expanding access to preschool education for 3-5 year-olds are showing success but more attention is needed for children aged 0-3, in particular on tackling malnutrition. Almost a quarter of the children below the age of 5 are stunted. In Vietnam and around the world, stunting has been found to strongly negatively affect cognitive skills development. Some stunted children remain behind for the rest of their lives. Vietnam cannot afford that.

#### **Step 2: Building the cognitive and behavioral foundation in general education**

Vietnam can further strengthen the cognitive and behavioral foundation skills by promoting more schooling and better schooling in primary and secondary education. This entails expanding enrolments in full-day schooling and preventing early school leaving after primary and lower secondary education as well as renovating the curriculum and teaching methods to help Vietnamese students to become more effective problem-solvers, critical thinkers, better communicators and team workers. Work on a new curriculum is already under way, and Vietnam has adapted a promising model from Colombia called Escuela Nueva which features more group learning and problem-solving than the memorization and copying often seen in Vietnamese primary school classrooms today. A pilot under way in 1,500 schools across Vietnam is already showing successes and holds lessons for broader reforms.

#### **Step 3: Building job-relevant technical skills through a more connected system**

Vietnam can build better and more relevant technical skills among its graduates and labor market entrants. Technical skill shortages and gaps are not the concern – they are indicators of a dynamic economy which creates new, more skill-intensive jobs. The concern is whether the education and training system is equally dynamic in adjusting quickly to ensure the supply of technical skills keeps up with the constant and accelerating evolution of the demand for technical skills.

Ensuring that Vietnamese graduates come with the right job-relevant technical skills requires that firms, universities and vocational schools, and current and prospective students become better connected.

Better coordination and partnerships can help improve the *information* about what skills employers need and are likely to need in the future. Better information on graduates' job placements can help future students to choose the best schools, universities and programs. Occupational competency standards and certification systems can improve the information about the skills that workers possess. More autonomy in decision-making coupled with accountability for the employability of their graduates (*the right incentives*) and better skilled staff and equipment (*enhanced capacity*) will help universities and vocational schools to effectively respond to the information on employer needs. Scholarship programs can provide more, including disadvantaged, students with opportunities.

The government plays an important role in a more dynamic and better connected skills development system. Rather than planning and managing the education and training system centrally and top-down, the government should help to overcome the disconnects through empowering students, universities and schools and firms to make good decisions – by facilitating the flow of information, by providing the right incentives to schools and universities to be responsive to information and through carefully investing in raising their capacity.

### **The time to act is now**

Vietnam's continued transformation towards a successful industrial, middle-income economy is not automatic or guaranteed. Structural reforms in the enterprise and banking sectors and sound macroeconomic policies will matter in ensuring continued fast change, but so will the quality of Vietnam's workforce. Changes in education and training can take a generation to result in a workforce equipped with the right skills. The time to modernize skills development is now to ensure that worker skills do not become a bottleneck.

Preparing the workforce for an industrial economy is not just the government's job. It requires a change in behavior by all actors in skills development – employers, schools and universities and students and their parents alike. Firms and universities need to build close partnerships. Parents need to become more involved in their children's schooling. Students need to expose themselves to the world of work even prior to their graduation. In rural areas, all parties need to ensure that children from disadvantaged backgrounds have the opportunity to meet their full potential. The role of government is to facilitate this change in behavior by helping to ensure a better information flow between all the actors, to address capacity constraints including financing capacity, and to set the right incentives by freeing up universities to partner more effectively with businesses.



## Overview – Skilling up Vietnam: Preparing the workforce for a modern market economy

**Vietnam is a country undergoing multiple transitions.** The transition from central planning to a market economy, started in 1986 with the *đổi mới* (renovation) reforms, is much advanced but not yet complete. The same is true for the transition from an agricultural to a modern, industrialized economy. In advancing along these parallel transitions, Vietnam has been counting on one of its biggest assets – its abundant young workforce. But Vietnam is also going through a demographic transition towards an aging society. While the size of its workforce is still expanding, Vietnam’s youth population is shrinking. This means that Vietnam cannot continue to rely on the size of its workforce to advance these transitions; it also needs to focus on making its workforce more productive.

**A skilled workforce is central to the success of Vietnam’s economic and social transitions.** There is a long-standing consensus across Vietnamese society on the importance of education. The focus on education is evident in considerable public and private investments and growing levels of educational attainment. There is also, however, an equal consensus that Vietnam still needs to do more to develop the “skills”, or “quality” of its workforce – one of the three breakthrough goals of the country’s ten-year socio economic development strategy for 2011 to 2020. Today, a growing public debate among students, parents, employers, educators and policymakers is under way on what skills are required in the modern market economy, how to ensure that these skills are developed in future graduates and how each of the stakeholders can play a role in improving the skills of the workforce.

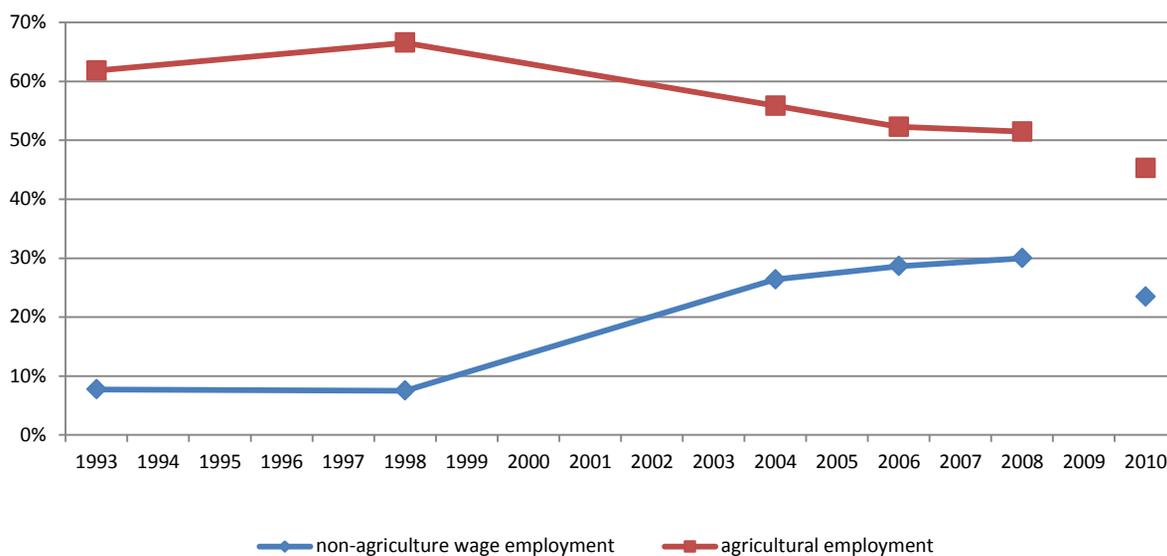
**The 2014 Vietnam Development Report seeks to contribute to the public debate on the topic of “skills” and to inform Vietnam’s strategic skills development.** Using new survey instruments developed by the World Bank, the report analyzes the demand for skills by Vietnamese employers in the greater Hanoi and Ho Chi Minh City region, Vietnam’s economic growth poles, and assesses the skills profile of the working age population in urban Vietnam. Based on this analysis, it examines how and when different types of skills are formed and what this means for reforming the education and training systems. It will propose a set of policy recommendations along three steps of a holistic skills strategy: first, promoting school readiness through early childhood development; second, building the cognitive and behavioral (also called ‘non-cognitive’) foundation in general education; and, third, building job-relevant technical skills through a more connected system.

### Skills and development in Vietnam

#### Looking back: Vietnam’s shift away from agriculture and the role of education

**Vietnam’s economy has undergone fundamental structural changes over the last 25 years with a shift of employment from the agricultural sector to wage employment in manufacturing, construction and services.** Since the launch of the *đổi mới* reforms in the late 1980s Vietnam has experienced rapid economic growth, which has catapulted it to middle income status in 2010 and has contributed to a fast decline in poverty (World Bank, 2012b). This economic miracle was initially associated with substantial labor productivity increases – GDP per employed person more than doubled between 1990 and 2010 – that came in the wake of improved agricultural efficiency and a rapid shift of employment out of low productivity agriculture into higher productivity non-farm jobs (Figure 1).

**Figure 1: Vietnam has seen a large shift of employment from agriculture to the non-agricultural sector**

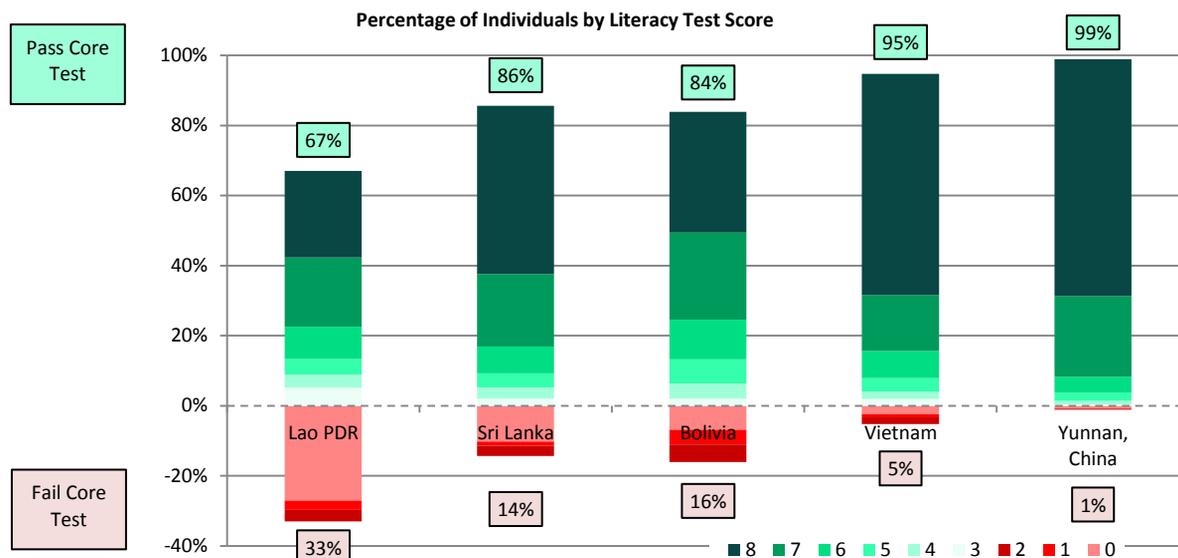


Source: World Bank staff estimates using Vietnam Household Living Standards Survey (VHLSS). Note: The 2010 VHLSS used a new sample frame based on the 2009 census. This captures migration between 1999 and 2009 from rural to peri-urban areas, where fewer workers work in agriculture.

**Education has played an important role in supporting and promoting structural change.** Vietnam’s population has become increasingly well educated. The fraction of the population with less than primary school has plummeted over time, and those born in the period following the *đổi mới* reforms have attained higher levels of education than any other generation in the history of Vietnam. Vietnam’s committed efforts to promoting access to primary education for all has allowed increasing shares of the population to take advantage of greater economic opportunities. The rise in educational attainment has however been uneven across Vietnam. While more and more young people complete primary education, important inequities in access and attainment remain at secondary levels, affecting in particular children from ethnic minority families or residing in remote parts of Vietnam. A needed expansion in secondary education will come through greater enrolment of the less well-off.

**Education has provided most Vietnamese workers with the key basic skills needed to succeed in the workforce: the ability to read and write at an adequate level.** In addition to expanding access, Government efforts to centrally set minimum quality standards have contributed to achieving good basic education outcomes. New evidence from STEP shows that literacy and numeracy among Vietnam’s students and adult workforce is widespread and more so than in other countries, including wealthier ones. In the STEP reading assessment Vietnamese workers outperformed their peers not just in poorer Laos but also in richer Bolivia and Sri Lanka (Figure 2). This new evidence compounds findings from comparable student assessments as part of the Young Lives research project which show that Vietnamese students at various age levels do better in mathematics than students of the same age in India, Ethiopia and Peru (Rolleston, James and Aurino, forthcoming). The message is thus: while inequities remain, Vietnam’s basic education system appears to be doing a fine job at imparting key basic skills for the majority of its students.

Figure 2: Percentage of individuals by literacy test score, STEP household survey.



**Source:** World Bank staff estimates using the STEP household survey, n=3328. All country samples are restricted to urban only for comparison reasons. The scores reflect performance of individuals on a reading literacy test; individuals who score 3 or more on the test are considered sufficiently skilled to be able to continue on to the next level of the test while those who score below 3 are considered to have failed the test of basic literacy skills.

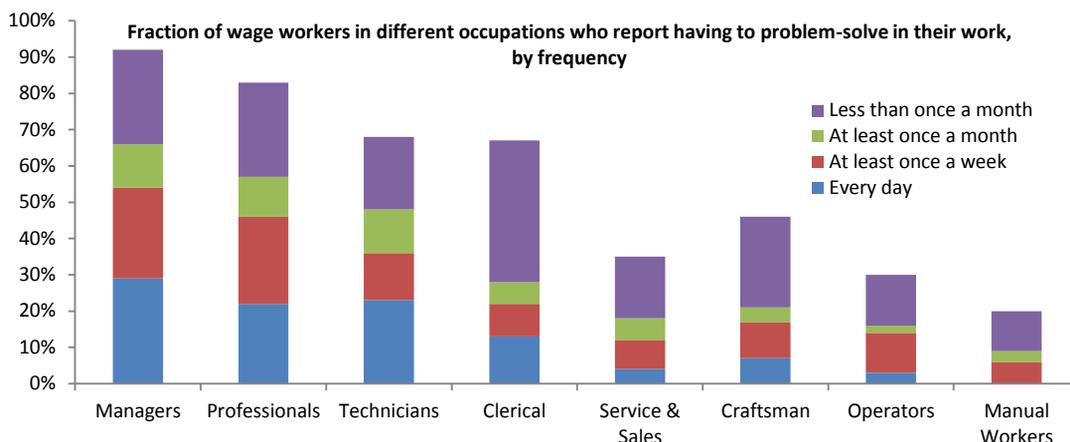
### Looking ahead: Modern jobs and changing skill needs

**The pace of economic growth and the reallocation of jobs away from agriculture have slowed in recent years.** This slowdown has come in the wake of macroeconomic instability, structural problems in the enterprise sector and weaknesses in the banking sector. This has had an effect on the labor market, with evidence of a bifurcation that is associated with educational attainment. While well educated workers are taking advantage of expanding opportunities in the private sector, especially in urban areas, less educated workers, and particularly those in rural areas, are having more difficulty. Less educated workers and youth from rural areas have more difficulty transitioning into the expanding private sector, and are often left in the agricultural sector or in informal employment.

**Economic growth has not just decelerated; its composition has also changed compared to the early years of đổi mới.** While productivity growth was the main driver of GDP growth in the early years of Vietnam’s transition, capital investments have become the main source of economic growth in recent years (World Bank, 2012a). This is not a sustainable model for ensuring continued strong economic growth. Vietnam has every potential to continue its success story and achieve fast growth and convergence in living standards with richer nations in the coming decade and more. But in order to do so, it will need to promote labor productivity growth across the board and a continued shift of employment into the non-agricultural sector.

**Equipping its workers with the right skills will be an important part of Vietnam’s effort to accelerate economic growth and further advance its economic transition.** Judging by the experience of its more advanced neighbors such as Korea, Vietnam can expect a shift in labor demand from today’s predominantly manual and elementary jobs towards more skill-intensive non-manual jobs, from jobs that largely involve routine tasks to those with non-routine tasks, from traditional jobs to modern jobs. And these modern jobs will require new skills.

**Figure 3: Workers in more advanced occupations need to solve problems more frequently**



Source: World Bank staff estimates using the STEP Employer Survey. The figure shows responses to the following question: “Some tasks are pretty easy and can be done right away or after getting a little help from others. Other tasks require more thinking to figure out how they should be done. As part of this work as [occupation], how often do you have to undertake tasks that require at least 30 minutes of thinking (examples: mechanic figuring out a car problem, budgeting for a business, teacher making a lesson plan, restaurant owner creating a new menu/dish for restaurant, dress maker designing a new dress)”. Respondents were asked to indicate how often they conducted a task of this form. The sample includes only wage employees (n=1313).

**Modern skill-intensive jobs are becoming more prominent in Vietnam’s labor market and carry high returns.**

Most non-farm jobs in Vietnam today are in blue collar occupations (craftsmen, machine operators and manual workers) and in the service and sales sector. Better educated professionals and technicians make up less than a quarter of the non-agricultural workforce. However, young graduates are increasingly entering professional and technical occupations. Workers in these occupations report that they need a number of attributes for their jobs: they have to solve problems, learn new things frequently, present ideas or persuade clients at work or interact with non-colleagues (Figure 3). Evidence presented in this report suggests that the nature of tasks performed by Vietnamese workers has been changing from predominantly manual and routine tasks, where workers are asked to perform the same function on a regular basis, towards more analytical, interactive and non-manual tasks where the type of tasks changes regularly. Workers performing these tasks are also better remunerated than their peers in traditional jobs.

**However, Vietnam’s employers struggle to find the right workers for these modern jobs.**

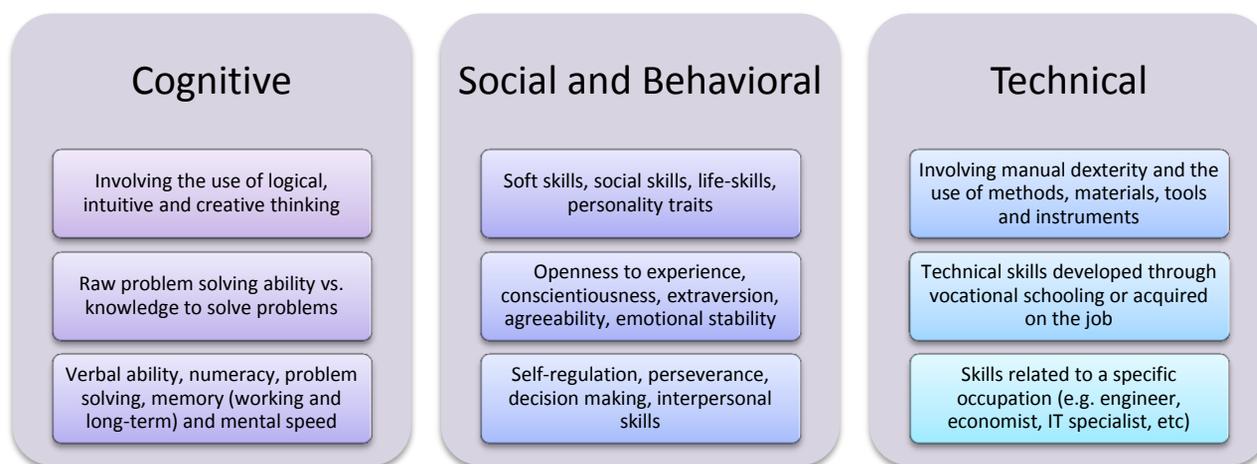
Despite impressive literacy and numeracy achievements among Vietnamese workers, many Vietnamese firms report difficulties in finding workers with adequate skills as a significant obstacle to their activity. STEP evidence suggests that worker skills and availability are more binding concerns for employers than labor market regulations and taxes. A majority of employers said that hiring new workers is a challenge either because of inadequate skills of job applicants (a “skills gap”), or because of a scarcity of workers in some occupations (an occupational “skills shortage”). The skills gap is particularly acute among applicants for jobs in technical, professional and managerial occupations – jobs that more likely ask workers to conduct analytical, non-manual and non-routine tasks. In contrast, a skills shortage, or a shortage in applicants in particular types of jobs, is common among more elementary occupations.

## What skills are in demand today (and will be in 2020)?

### Defining “skills”

**A worker’s skill set comprises different domains of skills: cognitive skills, social and behavioral skills, and technical skills.** These domains cover job-specific skills that are relevant to specific occupations as well as cognitive abilities and the various personality traits that are crucial for success in the labor market. Cognitive skills include the use of logical, intuitive and critical thinking as well as problem solving using acquired knowledge. They include literacy and numerical ability, and extend to the ability to understand complex ideas, learn from experience, and analyze problems using logical processes. Social and behavioral skills capture personality traits that are linked to labor market success: openness to new experiences, conscientiousness, extraversion, agreeability, and emotional stability. Technical skills range from manual dexterity for using complex tools and instruments to occupation-specific knowledge and skills in areas such as in engineering or medicine (Figure 4).

Figure 4: The three dimensions of skills measured in the STEP survey

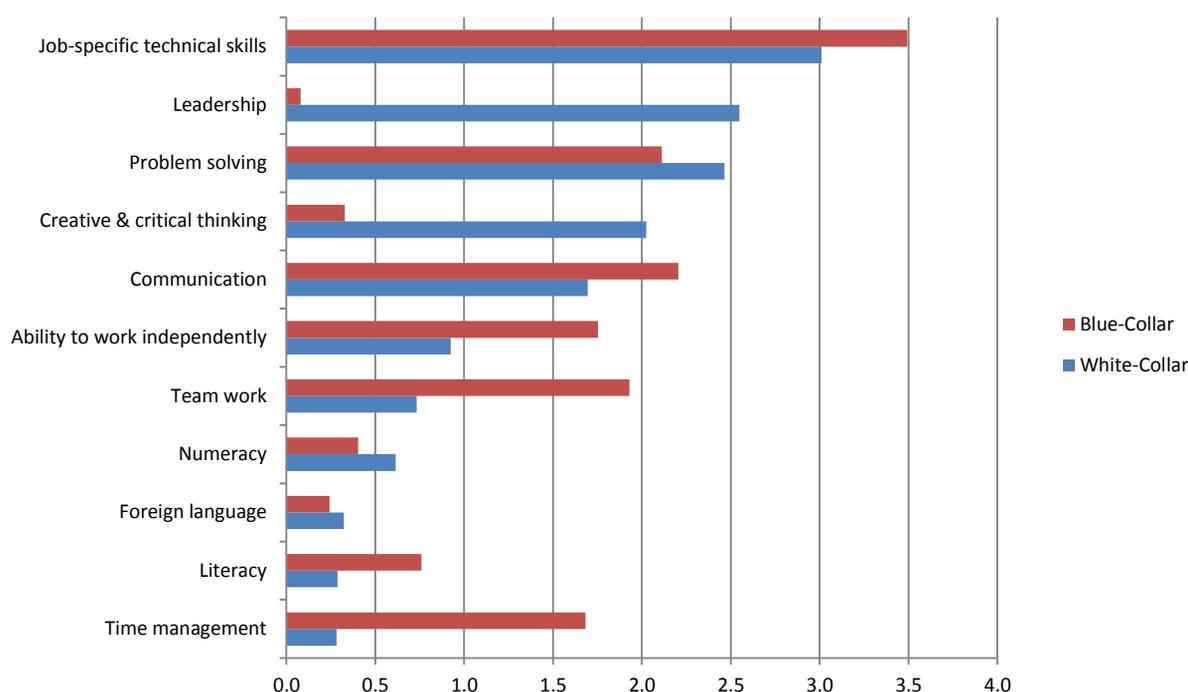


Source: Pierre, Sanchez Puerta, and Valerio (forthcoming), STEP Skills Measurement Surveys. Innovative Tools for Assessing Skills

### **Vietnamese employers are looking for a mix of high quality cognitive, behavioral and technical skills.**

Employers in greater Hanoi and Ho Chi Minh City surveyed for this report identified job-specific technical skills as the most important skill they are looking for when hiring both white and blue collar workers (Figure 5). Such technical skills include, for example, the practical ability of an electrician to do his or her job. However, like employers in more advanced middle and high income economies, employers report that they are equally looking for employees with strong cognitive skills and behavioral skills. For example, next to job-specific technical skills, team work and problem-solving skills are considered important behavioral and cognitive skills for blue collar workers. When they hire white collar workers, employers are expecting that they are critical thinkers, can solve problems, and communicate well. Basic cognitive skills such as literacy and numeracy feature less prominently. That does not mean that they are not important – but it may mean they are simply taken for granted. In short, Vietnam’s employers require that workers are good readers, but also good problem-solvers.

**Figure 5: Job-related skills are viewed as the most important among blue- and white-collar workers**



Source: World Bank staff estimates using the STEP Employer Survey. White-collar workers include the following worker types: managers; professionals, technicians and associated professionals. Blue-collar workers are classified as the following workers: clerical support; service; sales; skilled agriculture, craft and related trades, plant and machine operators; elementary occupations. This figure is based on the 328 and 329 firms who reported having at least one worker in the white- and blue-collar category and were willing to respond about the skills used and needed by that worker in his or her work. The differences between blue and white collar occupations are all statistically significant with the exception of job-specific technical skills and communication skills.

### How are cognitive, behavioral and technical skills formed?

#### The skill profile of the Vietnamese workforce reflects investments made throughout their lifetimes.

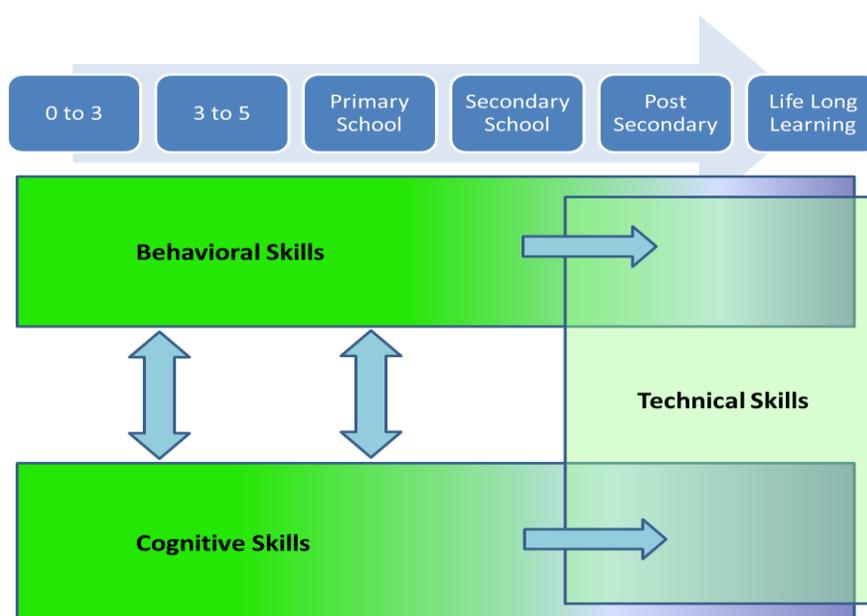
The foundations of cognitive and behavioral skills are formed early and are the platform upon which later skills are built. A skills strategy must take into account all of the points at which skills are formed, and be built up from the early investments made during early childhood to on-the-job training in the labor market. Figure 6 provides a simplified summary of emerging evidence on the different points in childhood and early adulthood during which cognitive, behavioral and technical skills may be formed. Four features of skill formation are worth noting for the development of a skills strategy.

1. *The most sensitive periods for building a skill vary across technical, cognitive and behavioral skills.* These periods are indicated in bright green in Figure 7; periods during which the skills are less sensitive to investment are indicated in light green and periods where sensitivity is most limited are indicated in blue. Research shows the critical importance of good early stimulation and early childhood development to be able to make the most of one’s abilities. Children who fall behind early have a very hard time catching up to their peers. Behavioral skills are beginning to be formed in the early years and continue to evolve throughout adult life.
2. *Skill formation benefits from previous investments and is cumulative.* For example, a child who has learned to read fluently by second grade will be able to absorb more in third grade than a child who cannot yet read fluently. This implies that earlier investments are likely to have a

greater longer term impact on skills, since it is easier and less costly to build these skills at the moments when children are most receptive to learning.

3. *Social and behavioral skills are valuable early in a child's life since they support, and benefit from, cognitive skills development.* For example a child who displays more openness to new experiences is more likely to be imaginative, creative and apply themselves at school.
4. *Technical and job specific skills – often acquired last, through technical and vocational education and training (TVET), higher education and on-the-job learning – will benefit from the stronger cognitive and behavioral skills acquired earlier in the education system.* The skills learnt in formal education will help workers to continuously updating their technical skills during their working lives. This will rise in importance as Vietnam’s population ages and production in Vietnam becomes more technically sophisticated and workers need to catch up with technological progress during their longer working lives.

Figure 6: The process of skill formation – a simplified model



Source: Authors’ illustration based on international evidence from a range of disciplines studying the development of abilities, including psychology, economics, and neuroscience. An excellent overview of this literature can be found in Shonkoff and Philipps (2000), Almlund et al (2011), Cunha, Heckman, Schennach (2010) and Cunha and Heckman (2007).

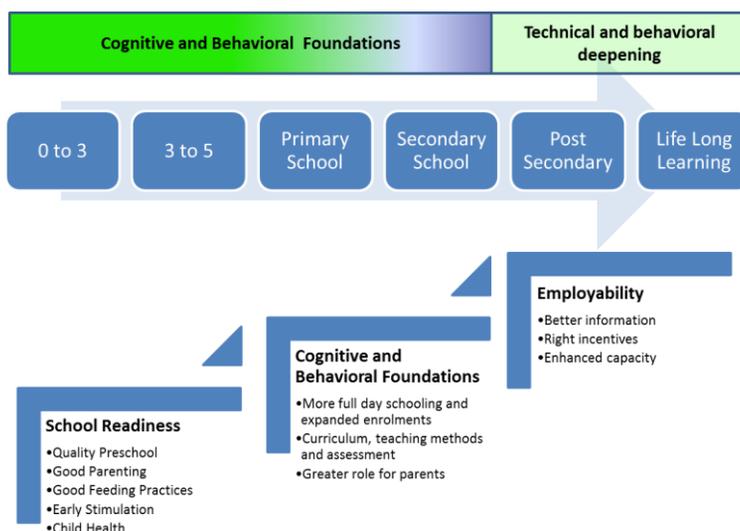
**Skills development starts with birth and continues through early childhood education and general primary and secondary education all the way to vocational and tertiary education and on-the-job training.** Vietnam’s skills development strategy should, therefore, take a holistic approach and look at how to better equip individuals with relevant skills and knowledge along an individual’s life cycle. This report examines cognitive and behavioral skills acquisition in early childhood and general education and technical skill acquisition in vocational and tertiary education and on the job training.

### Preparing the workforce for a modern market economy

**Vietnam’s general education system has undergone a remarkable transformation since đổi mới and is now entering a new phase.** Enrolments have expanded dramatically at every level and Vietnam’s population has become increasingly well-educated over the last decades. An initial, successful focus on expanding primary education access and completion, as called for under the Millennium Development Goals, has made way to an increased emphasis on expanding pre-primary, secondary education and

tertiary enrolments and raising the quality of provision. This is expected to help address three key challenges: First, pre-primary education to promote school readiness provides the best chance to overcome remaining inequalities in education. Second, enhanced enrolments at the secondary level and improvements in teaching methods and quality should help enhance the cognitive and behavioral foundation skills of graduates. Third, overcoming disconnects between employers, universities and vocational training providers and (prospective) students can help ensure that graduates come equipped with better technical skills. A holistic skills development strategy for Vietnam, therefore, should entail three steps (Figure 7).

Figure 7: Three steps in skills development



Source: Authors' illustration

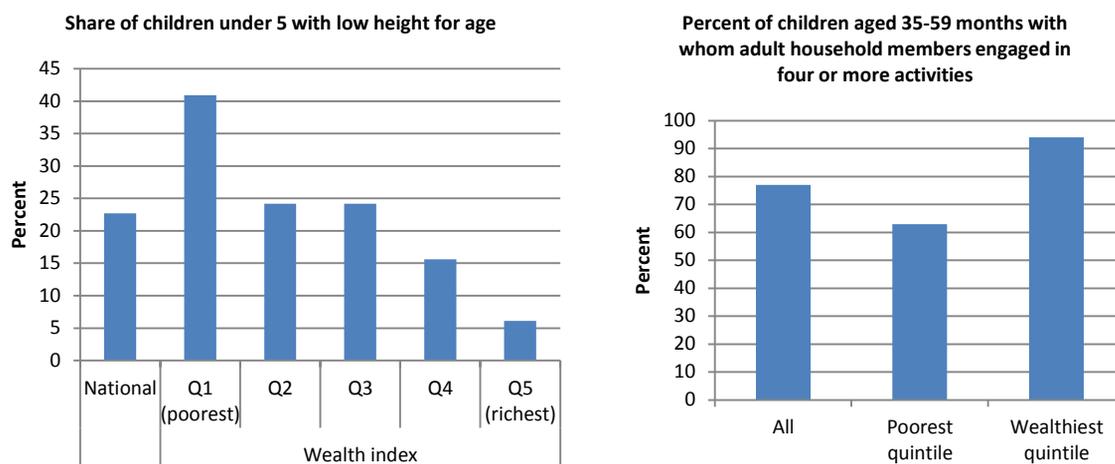
### Step 1: Promoting school readiness through early childhood development

**Early childhood development and education for children below the age of 6 is the most important entry point for building their cognitive and behavioral skills and making them “ready for school”.** The right nutrition and stimulation before the age of 3 through effective parenting and quality preschool between 3 and 6 contribute to children’s school readiness. The concept of “school readiness” or “readiness to learn at school” represents whether a child entering primary school is able to succeed at school. School readiness is generally considered to be the product of a young child’s cognitive, physical and socio-emotional development from an early age onward (Nadeau et al., 2011).

**Vietnamese children from poor background are at a disadvantage in their readiness for school.** In 2012, the Ministry of Education and Training (MOET) assessed school readiness among 5 year-old children in public preschools, using a survey that adapted the Early Development Instrument (EDI) to measure the development of children across five domains: physical health and well-being; social knowledge and competence; emotional health/maturity; language and cognitive development; and general knowledge and communication skills. The survey showed that children from poor households were significantly behind non-poor children across these domains of school readiness (MOET, 2013).

**Malnutrition is a key driver of school “un-readiness”.** Almost a quarter of Vietnamese children below the age of 5 are stunted (GSO and Unicef, 2011, see Figure 8). Apart from poverty, child malnutrition can be explained by inadequate infant and young child feeding practices, including low rates of breastfeeding. In Vietnam and around the world, stunting has been found to strongly negatively affect cognitive skills development (Le Thuc Duc, 2009). Some stunted children remain behind their peers for the rest of their lives.

**Figure 8: Young children from poor household are more likely to suffer from stunting and receive less parental stimulation**



Source: GSO/UNICEF 2011

**Deficits in school readiness will persist throughout life.** Much of the inequality in learning outcomes between different types of young Vietnamese observed in primary education and beyond is already established before the age of formal schooling. The Government of Vietnam has placed increased focus on enhancing school readiness for 3 to 6 year olds, a policy that is well-motivated and addresses a key area of deficit. Vietnam’s efforts at expanding access to preschool education for 3-5 year-olds are showing success but more attention is needed for children aged 0-3, in particular on tackling malnutrition.

**Children from poorer households often lack stimulation, which limits their development potential from an early age.** The brain development of young children is highly sensitive to stimulation and interaction. The more parents and care-givers interact with a young child, for example through talking, singing or reading, the better are the conditions for brain development. However, evidence shows that in Vietnam young children from the poorest households receive less stimulation from their parents than children from the wealthiest ones. This implies that during these early years in which children’s brains are the most sensitive to interactions and learning, children from poor households are not receiving the investments that they need and are already falling behind children from wealthier households.

**The support for the development of children aged 0-3 remains weak in Vietnam.** Considerable international and Vietnamese evidence presented in this report shows that targeted interventions can reduce stunting and mitigate its effect on a child’s cognitive development. Despite high rates of stunting among children under the age of 5 and strong evidence of low and declining use of breastfeeding, the key policy interventions needed to curb the effects of malnutrition are not yet adequately prioritized in government policy. These interventions include a focus on child nutrition, infant and young child

feeding. There is significant scope for more systematic promotion of breastfeeding and child stimulation through a variation of parallel family-based interventions in hospitals after birth, in local health stations, in communities, and through communication campaigns and complemented by social assistance that provides financial assistance to enable poor parents to make better choices for their children.

**In contrast, the promotion of preschool for children aged 3-6 is currently the main policy lever of the Government to enhance school readiness.** As a result of recent reforms, Vietnam's early childhood education system has many strengths—including a sound policy framework, child-focused curriculum and rapidly expanding provision in the wake of the program to universalize full-day preschool for 5 year-old children (Program 239). However, policies to promote access and quality at the national level have not yet been fully translated into actual provision in the provinces. This is still resulting in wide variations in quality and access, in particular affecting disadvantaged children. While promoting access remains a priority, particularly in underserved regions, the Government's focus is now increasingly shifting towards translating its modern and child-centered curriculum into quality provision across all classrooms through upgrading the competence of the current teaching workforce.

## **Step 2: Building the cognitive and behavioral foundation in general education**

**The next step for Vietnam's general education system: balancing good basic literacy and numeracy skills with higher order cognitive skills such as problem-solving and critical thinking.** Recent Young Lives research from a school survey in Vietnam that included a grade 5 student assessment in 2012 shows that large majorities of students tested at grade 5 had good formal mathematics skills. However, fewer children were able to answer questions that involved less familiar approaches even when the required mathematical knowledge for a question was less than they could demonstrate compared to a more formal and familiar question. Though certainly not conclusive, this provides some suggestive evidence that the primary school curriculum and pedagogy may not yet adequately help children transfer formal knowledge into unfamiliar settings, a cognitive skill demanded by employers and rewarded in the workplace.

**Vietnam's general education system is successful in providing graduates with good basic cognitive skills. Reforms should carefully build on the system's strengths.** Shifting the emphasis in general education towards making sure that more children learn and acquire also the higher order cognitive and behavioral skills demanded in Vietnam's labor market does not mean that the system needs wholesale reform. Instead it needs careful adjustments, building on its strong features. Building stronger cognitive and behavioral skills will require (i) *more schooling for all*, with full-day instruction and expansion of access to secondary education, (ii) *better schooling for all*, with a curriculum and teaching and assessment methods which foster the development of cognitive and behavioral skills in students and (iii) *greater involvement of parents and communities in schooling*.

### ***More schooling for all***

**Enhancing cognitive skills among Vietnam's next generation will require that they spend more time in school.** First, enrolments in secondary education in Vietnam remain below potential. Enrolments are particular low among children from less wealthy background. Education careers need to be extended through increasing progression rates from primary to lower secondary, from lower secondary to upper secondary and then to post-secondary education. This will inevitably mean easing the financial barriers to education affecting less well-off students through fee waivers and direct cash support. Second, tuition time in primary education with between 23 and 25 instruction periods over a school year of 36

weeks remains low compared to other countries. Better-off parents tend to make up for this by paying for their children to attend “extra classes” – regular, core academic lessons typically by their own teachers after school hours. Extra classes are not only a Vietnamese phenomenon; they are encountered across several countries in East Asia. But they are prominent in Vietnam: In 2010 parents of 33 percent of primary students and 49 percent of lower secondary students reported some expenditure on coaching sessions for academic subjects.

**Extra classes are problematic in multiple ways.** First, if they focus on the same academic knowledge on a narrow part of the formal half-day curriculum (coaching sessions for compulsory subjects) as opposed to a wider curriculum and activities that help build behavioral skills, such as arts or sports, they risk consuming precious time that could be allocated for alternative activities. Second, extra classes are often informal and not regulated. They place teachers in an undue position of power vis-à-vis parents. Parents are under pressure to pay for their children’s participation in the extra classes if they want to avoid the risk that the teacher might otherwise not let the child pass the exam. There is evidence that many parents are asked to make unofficial payments to schools and teachers (World Bank, 2012e; CECODES, VFF-CRT & UNDP, 2013). It may also undermine teachers’ motivation to perform well during the formal hours of instruction. Third, richer households are able to spend much larger amounts on extra classes and extra classes are mainly an urban phenomenon. There is, therefore, a risk that extra classes may deepen inequalities in learning.

**Expanding formal full-day schooling can provide the space for a more varied curriculum and mix of instruction and may well be the best strategy to limit extra classes.** MOET has attempted to regulate the provision of informal extra classes, but not with much apparent effect. An alternative to regulating extra classes is to expand formal full-day schooling to reduce the time available for teachers to offer private tuition and help make up for their revenue loss related to foregone extra classes.

**More schooling carries additional costs which need to be covered by the government or parents or both.** Vietnam has adopted the policy of “socialization” which involves levying user charges from those who can pay, while using budget resources to subsidize access for those who cannot (usually the registered poor). This is an appropriate choice so long as it is not creating new access barriers due to user charges, getting the balance right between those who can pay and those who cannot is tricky. Well-off parents who currently finance extra classes for their children could be asked to provide formal co-financing to schools for full-day schooling as opposed to informal payments to teachers who provide extra classes.

**But there is also considerable potential to get more out of existing public expenditure – due to Vietnam’s demographic transition:** According to Vietnamese census data, the size of the population cohort below the age of 15 declined by 17 percent between 1999 and 2009. A decline in student numbers in general education may open fiscal space to accommodate expanding full-day schooling and enrolments at secondary level. Falling student numbers due to declining age cohorts means that budget resources (fewer schools, fewer teachers) could be freed up to cover additional costs associated with expanding enrolments in secondary education and full-day schooling, including progressively abolishing tuition fees at secondary level.

### *Better schooling for all*

**What matters is not just more schooling but more quality schooling with a curriculum, teaching and assessment methods that foster the formation of higher order cognitive and behavioral skills.** More schooling should mean better schooling through a general education *curriculum* which balances

competency-based and content-based learning, coupled with the right *teaching methods* to stimulate creative and critical thinking in primary and secondary school students and the right approach to *student assessment*. Vietnam can benefit from the experience of Singapore and Korea – two countries with leading education systems. These countries adopted curricula and student assessment systems that promote both knowledge acquisition and active learning and creative and critical thinking in schools. In Vietnam, steps towards modernizing the curriculum are getting under way: In response to a call from the XI Congress of the Communist Party in 2011, the Ministry of Education and Training has launched an ambitious process of developing a new general education curriculum and new textbooks by 2015 with a definition of students' essential competencies, which will then form the basis of educational objectives, standards, learning content, teaching methods and assessment.

**While curriculum change and textbook reform is an important step, what matters is the resulting change in the teaching methods and instruction in the classroom** with well skilled teachers and school principals and parental involvement. Translating a new general education curriculum into concrete change in the classroom will require modernization of teacher professional development, both in-service and pre-service, and sustained investment in its roll-out to all teachers. In order to inform its curriculum modernization, Vietnam has adapted a promising model from Colombia called Escuela Nueva which features more group learning and problem-solving than the predominant focus on memorization and copying often seen in Vietnamese primary school classrooms today. A Vietnam Escuela Nueva (VNEN) pilot under way in 1,500 schools across Vietnam is already showing successes and holds lessons for broader reforms, and MOET intends to advance the pilot into lower secondary education.

**Teacher quality matters most for better schooling and Vietnam already has a strong teaching workforce.** The primary education teacher workforce has become significantly better qualified in recent years. Nearly 60 percent of all primary school teachers now hold a college or university degree – almost double compared to 2006. Increased teacher qualification matters: Evidence from the 2012 Young Lives school survey suggests that high performing schools have higher shares of teachers with a college or university degree. High teacher capacity is also evident in their ability to correctly assess their students' ability, which is critical to help them provide the support that their students need (Rolleston, James, Pasquier-Doumer and Tran, 2013).

**Better in-service teacher professional development can help better equip teachers with the skills to teach a modernized curriculum.** Teacher training needs to not only focus on how to teach curriculum content but also on how to impart behavioral skills. There is a lot to improve: In-service professional development among primary teachers is limited and the content and methods require modernization – away from the traditional cascading model where the Ministry of Education and Training trains trainers who train other trainers to deliver training in the summer months toward one where capacities in provincial teacher training colleges are enhanced to provide more tailored programs all year round and with new teaching methods.

**Beyond curriculum and teaching methods, student assessment needs to be aligned with the objective of fostering higher order cognitive and behavioral skills.** Vietnam makes much use of educational assessment: Classroom assessments with written and oral tests and marked assignments and homework are used to provide real-time feedback on students' performance to inform teaching, while national examinations are used after grade 12 for making high-stakes decisions about students' progression to the next level in the education system. Once the curriculum and standards in general education are adjusted to better reflect higher order cognitive and behavioral skills, the student assessment system

needs to be equipped with the tools to help assess these skills (as opposed to just content knowledge than can be memorized) in students, to see how schools perform in imparting these skills and to hold schools and local education authorities accountable for results. For example, the introduction of more open-ended questions would allow for greater emphasis on higher-order thinking and problem solving.

### *Schooling that involves parents and communities more*

**A prominent role for parents in school is important for several reasons.** Parents have a strong interest in ensuring their children get a quality education. Providing them with information and a forum to voice views and advise the school can make the school more explicitly accountable to them for the learning progress of their children. Much learning takes place at home, and the home environment is an important contributor to learning success. Parents need to be aware of the learning process and content in the school and how they can complement this by providing effective support to their children's learning at home – after school and during the long summer vacations. A greater involvement of parents and communities can also help make instruction more reflective of local needs, traditions and contexts and can help build bridges where there are cultural and other gaps between school and home, for example in the case of ethnic minority children which are taught by Kinh teachers.

**The opportunities for formal parental involvement in schools beyond making financial contributions are limited in Vietnam.** Schools can establish a parents' council for a class or the school as a whole but, where they exist, they have little formal powers. Such councils can channel parents' feedbacks to teachers on educational issues and bring their voice to the principal regarding educational activities and management of the school. However, legally the parents' council has very limited weight on influencing the operation and monitoring the performance of a public school, and in practice the role of the parents' council is often reduced to collecting parents' voluntary contributions to the school.

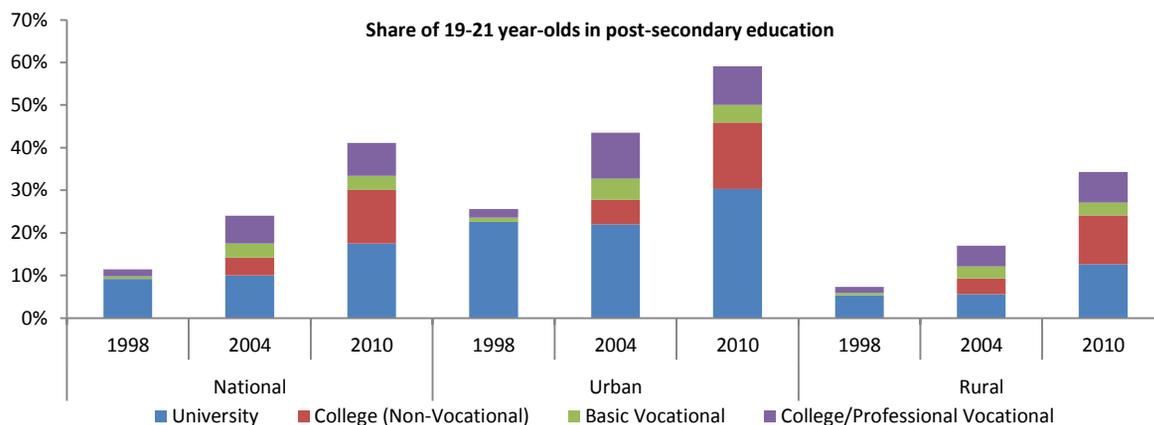
**A greater role of parents in the school is possible even within the current system of central standards and predominant decision-making at the province level.** Provinces and districts could cede certain decisions to schools and with the involvement of parents. For example, schools could be entrusted with deciding on the arrangements for full-day schooling and parents could contribute to this decision-making. Parents could advise on how to incorporate extra classes into the formal program and how to arrange afternoon activities under formal full-day schooling. There are already examples of greater parental involvement in Vietnam: Schools participating in the Vietnam Escuela Nueva Pilot have the freedom to involve parents in the learning process and to contribute to learning content.

### **Step 3: Building job-relevant technical skills through a more connected system**

**Higher education, vocational training and on-the-job training are the key avenues for acquiring technical skills that workers need to work in their chosen profession.** Higher education is booming in Vietnam and is viewed as the key avenue towards raising the quality of human resources by the population, firms and the government alike. Returns to higher education in Vietnam are large, suggesting strong demand for university graduates. Employment prospects of graduates from a prestigious university in urban areas are good, but less so for those in rural and remote areas (World Bank, 2013b). In response to high returns to education, enrolments have expanded dramatically over the recent decade (Figure 9), though they remain low in comparison to comparable countries in East Asia (World Bank, 2012c). Moreover, there are concerns about quality, particularly given the fast pace of expansion, and the relevance of what students and trainees learn. Vocational training is less popular than higher education and the share of 19-21 year-olds in vocational training has remained stagnant.

**Many firms provide on-the-job training to their workers.** As they encounter skill gaps and shortages in the context of expanding enrolments in universities and in vocational schools, some employers choose to provide on-the-job training to their workers. The role of on-the-job training is to deepen the technical skills acquired in formal education and training and to adapt employees to the individual work place. Many Vietnamese firms report that they provide on-the-job training; however, most of this appears to be internal training, while external training is limited to few firms and workers, often those that are already relatively well educated and trained.

**Figure 9: Enrolments in university and colleges exploded over the last decade, but less so in in post-secondary vocational training institutions**



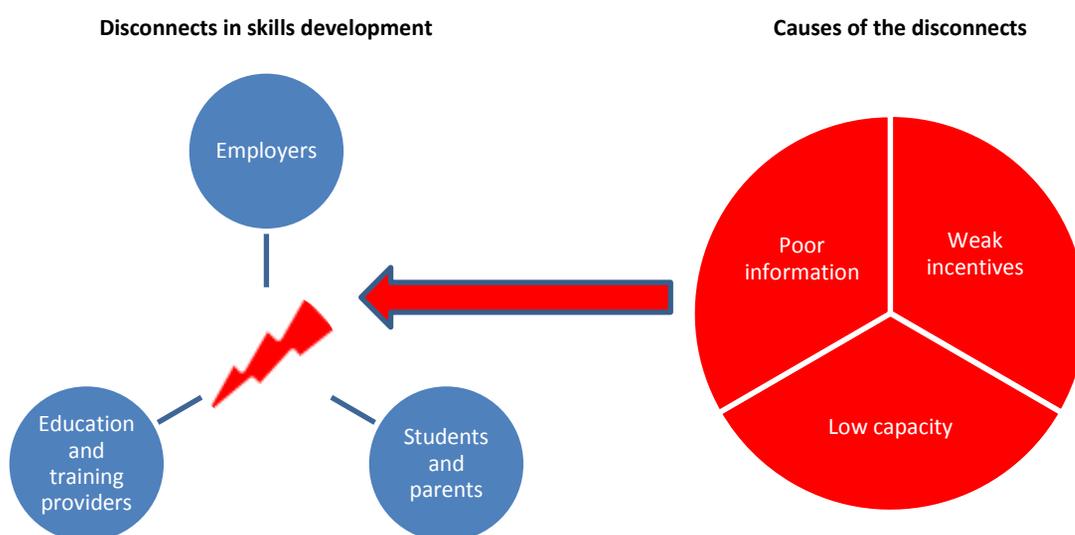
Source: World Bank staff estimates using the 1998, 2004 and 2010 VHLSS surveys. The figure shows the fraction of 19-21 year olds enrolled in vocational training, college or university. In 1998, it is not possible to separate out university and college therefore all college and university admissions are included in the university figure.

**Vietnam should not be concerned about the existence of skills gaps and occupational skill shortages, but about the ability of the skills development system to overcome them.** Skills shortages and gaps are indicators of a dynamic economy which creates new, more skill-intensive jobs. The real concern is whether the education and training system is equally dynamic in adjusting quickly to supply graduates with the technical skills to keep up with a constant and accelerating evolution in the demand for technical skills. One indicator of responsiveness to expanding demand is the strong expansion in enrolments and in the supply of universities, colleges and vocational training institutes. But gross enrolments in tertiary education remain lower than those in neighboring countries, suggesting that supply can and will need to expand further. Moreover, another indicator is whether the rising numbers of graduates and job applicants bring the skills that employers demand. And the evidence provided in this report suggests that they often do not.

**Vietnam’s skill development system today is not as responsive as it needs to be and is suffering from “disconnects” between employers, students and universities and vocational schools.** An unresponsive, under-performing skills development system is a disconnected system in which actors make choices and act in isolation and do not sufficiently interact with each other (Figure 10). Schools and universities may offer programs and produce graduates with skills that do not fully reflect the needs of the labor market. Students and parents may not be demanding the types of programs or teaching methods and content which would give them the skills they or their children need to succeed in the labor market. Like many countries around the world, Vietnam suffers from such system disconnects.

**Disconnects result from imperfect and asymmetric information among actors and their inadequate capacity and weak incentives to make good use of information.** Information, incentive and capacity deficits make the system less dynamic in responding to the evolving technical skill needs in the economy. They reflect what economists call “market failures”.<sup>i</sup> The government plays an important role in helping to overcome these market failures. But rather than planning and managing the education and training system centrally and top-down as in the past, the government should help overcome the disconnects through empowering students, universities and schools and firms to make good decisions – by facilitating the flow of information, providing the right incentives to schools and universities to be responsive to information and through carefully investing in raising their capacity. Interventions on these three drivers of system responsiveness are mutually reinforcing and should be conducted in parallel.

**Figure 10: Skills development is not working as a system of connected actors**



Source: Authors’ illustration, adapted from World Bank (2012c)

### **Better information**

**Information is the oxygen of responsive skills development systems.** First, without good information about employers’ skill needs, conditions in the labor market and returns to certain fields of study, education and training providers cannot make good choices on the programs to develop and offer. Second, without such information, students and parents cannot make good decisions on which school or university and which study program to choose. Third, without information on the quality of education programs and employment success of graduates, prospective students may not be able to make good choices.

**Strengthened coordination and partnerships between firms and universities and vocational schools can help to bridge many information gaps.** Government at central and local levels can improve the flow and availability of information through using its convening power and using incentives to help initiate the establishment of formal and informal coordination mechanisms and partnerships between employers and training providers. While institutional models and set-ups vary across countries, all successful skills development systems around the world have created such coordination mechanisms. They range from the highly formal and institutionalized “dual system” in Germany which was built more than one hundred years ago to less formal and localized systems elsewhere. In Vietnam, partnerships

already exist between leading firms and universities, and the challenge is to learn from this experience and help spread them further. However, today central or local government rarely plays the role as facilitator of such initiatives. International experience suggests it could and should.

**Prospective students in urban Vietnam tend to have much better access to information to make education and career choices than their peers in rural areas.** In urban areas, the market appears to provide adequate information to influence good decision-making: There is evidence that prospective students in urban areas choose those fields of study whose graduates earn the highest wages, business, IT and sciences. Qualitative evidence collected for this report suggests that prospective students in rural areas, by contrast, have fewer and less reliable information sources available than their urban peers. This suggests the need for increased and more career advice in schools in rural areas as well as enhancing the connectedness to the internet in schools in these areas.

**Better information on graduates' job placements through tracer studies can help future students choose the best schools, universities and programs and provide an incentive to universities to focus on quality.** They can also provide useful information to hiring firms on the quality and relevance of education programs and providers. Such studies collect information on employment patterns of graduates after a certain period, usually six months. While some universities in Vietnam conduct such studies to demonstrate their graduates' labor market success, the use of tracer studies is not systematic.

**Improving the frequency and accessibility of labor market information can also help.** Vietnam is collecting quarterly labor force data but its record in publishing and disseminating this information is poor. It is usually limited to headline unemployment statistics. More disaggregated analysis and publication of returns to education, returns to occupations and employment trends, for example by levels of education and by occupations, can provide useful information to prospective students as well as to training providers.

**Removing the scope for rent seeking and corruption in education also helps with improving information.** Anticorruption surveys show that making unofficial payments in education is widespread (World Bank, 2012e, CECODES, VFF-CRT & UNDP, 2013). Corruption and unofficial payments deepen the disconnects by undermining the quality of information. Paying for grades, for example, compromises the information value of grades. With such payments, grades do not fully reflect a student's real performance and thus make diplomas less useful for students in their job search and for firms in recruitment.

### *Right incentives*

**Even in a world of perfect and symmetrical information, students and parents as well as education and training providers may still not be able to make the right choices if they face weak incentives.** For example, universities that are not sufficiently autonomous in their decision-making and who have to seek permission from central Government on whether to develop a new program or change any curriculum content will find it hard to respond to good information. A rigid curriculum that does not give space for vocational schools and universities to adjust their teaching methods and content to the changing and local needs expressed by employers may undermine their responsiveness.

**Greater autonomy of decision-making in education and training institutions, coupled with clear accountability for quality, is a critical precondition for enhanced linkages and partnership with industry.** This is why the international trend in higher education and vocational training has been towards ensuring greater autonomy and accountability of institutions at the expense of central

government control. In line with this, Vietnam launched a comprehensive reform of the tertiary education sector which includes steps towards greater autonomy of higher education institutions. The recently adopted Higher Education Law creates legal conditions for greater institutional autonomy for higher education institutions on many important aspects like planning, opening and closing units, new programs, financial management and staffing. Vocational education and training institutions can choose up to 35 percent of curriculum content locally and can also introduce new study program at their own initiative, though subject to approval by the Ministry of Labor, Invalids and Social Affairs (MOLISA). Vocational schools also have autonomy to decide on matters such as staffing and financing.

**Vietnam's principal challenge in higher education and vocational training now is to translate a legal framework for greater institutional autonomy into de facto autonomy.** Despite expanded de jure autonomy of decision-making on curriculum content and study programs in vocational training, many vocational institutions decide to follow directions from the government and their main source of revenue remains government transfers, more so than proceeds from tuition fees and partnerships with enterprises (CIEM and World Bank, 2013). Likewise, de facto autonomy of many higher education institutions for decision-making in response to labor market needs is still limited, and university councils not fully empowered to hold universities accountable. While the two national universities in Hanoi and HCMC as well as regional universities are largely autonomous in decision-making, both public and private universities and colleges have to follow operational and academic policies set by MOET. The steps towards greater autonomy of national and regional institutions have demonstrated the benefits of a system in which MOET cedes greater decision-making to institutions, for example resulting in the establishment of partnerships with universities abroad and with local firms.

**Greater institutional autonomy for universities also means that the role of government needs to change from direct management towards stewardship of the system.** Despite the recent moves towards promoting greater institutional autonomy, the Vietnamese Government still retains a strong say in managing the vocational and higher education systems, for example by centrally setting enrolment quotas in higher education and regulating and approving curriculum content. In contrast, a more connected, responsive skills development system suggests a different role for Government, with a shifting focus from controlling inputs (enrolment quotas, curriculum, teaching methods) to ensuring minimum quality levels (through accreditation) and incentivizing better outputs (qualifications and competencies of graduates).

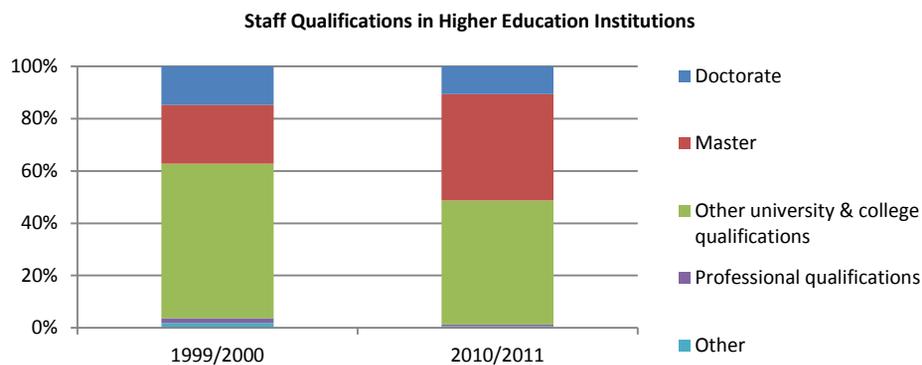
**Government can use regulative and financing tools to steer the system and promote accountability for results.** For example, rather than approving the content of a training program to become an electrician, the Government could invite employers and training providers to agree on occupational competency standards which an electrician should possess. Government could then focus on certifying electricians based on their competencies – whether they acquired them on the job, with a private or public training provider or elsewhere. There are increasingly examples of partnership between the Government, employers and providers in Vietnam in determining occupational competencies, for example in the tourism sector. The Government can use financing tools to incentivize excellence in universities (e.g. by allocating part of its financing based on results) or stimulate firms to partner with training providers and expand on-the-job training (e.g. through tax breaks).

### *Enhanced capacity*

**Even in a world of perfect and symmetrical information and appropriate incentives, students and parents as well as providers may still not be able to make the right choices if they face capacity**

**constraints.** Students from less wealthy background often drop out because they are unable to finance the tuition and non-tuition as well as opportunity costs associated with education and training. Scholarship and tuition fee waivers are important tools to help students to overcome this barrier. Among schools and universities, capacity constraints may come in form of insufficiently trained teaching staff or managers, inadequate curricula or a simple lack of knowledge and experience on how to act on information. Financing capacity constraints can also prevent firms from investing in their workers' training.

**Figure 11: Few staff in higher education institutions have advanced academic degrees**



Source MOET

**Investments in the qualifications of staff and equipment will help universities and vocational schools to more effectively respond to the information on employer needs.** At present, few staff in higher education have advanced academic degrees. Strengthening the graduate education and advanced training system as well as scholarships and programs to retain students in universities and incentivize them to choose academic careers can help raise the overall qualification profile. Creating attractive conditions for research can help attract Vietnamese overseas PhDs back to Vietnam. Likewise, a strategic strengthening of the science, technology and innovation system can create a better environment for attracting and retaining researchers and for promoting a growing, capable critical mass of international-level professors at higher education institutions. But capacity is not limited to teaching and research, investments in managerial capacity will enable university and vocational school leaders to take advantage of greater autonomy.

**Better information, incentives and capacity are mutually reinforcing.** Government can use regulatory or financing incentives to promote partnerships between providers and industry and the generation and dissemination of better information on graduates' employment successes. In turn, better information makes providers more accountable. Ambitious and successful universities and vocational schools want to demonstrate that they have strong linkages with industry and that their graduates find good jobs and do so quickly. Investments in their managerial and teaching capacity can enable them to do so.

## Summary

**Vietnam's continued transition towards a modern, industrial market economy is not automatic.**

Structural reforms in the enterprise and banking sectors and sound macroeconomic policies will matter in ensuring continued fast change, but so will the quality of Vietnam's workforce. Vietnam's return to strong economic growth will come through increased labor productivity. Changes in education and training can take a generation to result in a workforce that is equipped with the right skills. The time to

modernize skills development is now to ensure that worker skills do not become a bottleneck over the coming decade and more.

**The nature of work in a modern market economy will change and become more sophisticated. Vietnamese employers already are looking for a mix of higher quality cognitive, behavioral and technical skills.** These skills are accumulated at various points along the life cycle from birth into adulthood. This suggests that a smart skill development strategy for Vietnam should encompass reforms and investments from early childhood development to on-the-job training. Views by Vietnamese employers are very similar to those of employers in much more advanced middle and high income economies where, as in Vietnam, employers report that critical thinking and communication skills among workers are also in high demand but lacking. This means that by reorienting its education system to focus more on teaching these types of skills, Vietnam can prepare itself to deliver skills that will never go out of fashion and are important in almost any industry. Vietnam's challenge is thus: Turn graduates from good readers into critical thinkers and problem-solvers who are well equipped to acquire technical skills in university, vocational training and throughout their working lives.

**Building a highly skilled workforce is a shared responsibility between the Government, education and training providers, employers and students and parents.** Preparing the workforce for an industrial economy is not just the government's job. It requires a change in behavior by all actors in skills development - employers, schools and universities and students and their parents alike. Firms and universities need to build close partnerships. Parents need to become involved in their children's schooling. Students need to expose themselves to the world of work even prior to their graduation. But the Government plays an important role as a steward, not the manager, of the system. The role of government is to facilitate the change in behavior by helping to ensure a better information flow between all the actors, to address capacity constraints including financing capacity, and to set the right incentives by freeing up universities to partner more effectively with businesses. There are pockets of excellence in the system of cognitive, behavioral and technical skills development already; as the system's steward the challenge is for the Government is to translate these pockets into system-wide change.

**Annex Table 1: A framework for skills development in Vietnam**

Objective	Policies
<b>Promoting school readiness through early childhood development</b>	
Early childhood development for children aged 0-3	More systematic promotion of breastfeeding and child stimulation through parallel family-based interventions in hospitals after birth, in local health stations, in communities, and through communication campaigns; Social assistance to enable poor parents financially to make better choices for their children
Preschool for children aged 3-5	Universalize access to full-day preschool; Translate modern and child-centered curriculum into quality provision across all classrooms through upgrading of the competence of the current teaching workforce
<b>Building the cognitive and behavioral foundation in general education</b>	
More schooling for all	Increase transition rates into secondary education through fee waivers and direct cash support for less well-off students; Expand formal full-day schooling to reduce extra classes and ensure more varied formal curriculum
Better schooling for all	Modernize curriculum, teaching methods and student assessment with stronger focus on critical thinking, problem-solving and behavioral skills; Equip teachers with tools to teach modernize curriculum through reformed in-service teacher professional development
Schooling that involves parents and communities more	Empower parents' councils in schools and involve them in decision-making; Strengthen school-community linkages in disadvantaged contexts, e.g. through ethnic minority teaching assistants and greater involvement of parents
<b>Building and updating technical skills in post-secondary education and training</b>	
Better information	Initiate and incentivize formal or informal skills coordination and partnership forums at national, provincial and local levels between firms and education and training providers; More use of graduate tracer surveys; Address information barriers in rural and remote areas; Better dissemination of available labor market information; Tackling corruption in education
Right incentives	Increase de facto autonomy of providers; State to shift from management to Stewardship of the system; Focus on outcomes, not inputs: Stop setting enrolment quotas, define quality and occupational skills standards and assess and certify graduates;
Adequate capacity	Invest in faculty/teacher training; Leadership and Management capacity to exercise autonomy at institutional level retaining graduates in academia; Scholarships

## Chapter 1: Vietnam's economic transformation and the role of education

**Vietnam is a global economic development success story.** Since the launch of the *đổi mới* reforms in the late 1980s, Vietnam has seen rapid economic growth, which catapulted it to middle income status in 2010, and contributed to one of the fastest declines in poverty ever recorded. This economic miracle was associated with substantial productivity increases and a rapid movement of labor out of agriculture and into wage employment. In large part, this transformation was driven by rising levels of education, and an influx of foreign and domestic capital investment. Vietnam's focused investments over the last decades into universalizing primary education completion and expanding access at all levels has paid off and has allowed increasing shares of the population to take advantage of expanding economic opportunities.

**Vietnam's development story is entering a new chapter that will shift the focus from factor accumulation to productivity growth.** Despite the success, labor productivity remains low relative to competitors in the region. Unlike in the early period of Vietnam's transition, growth in recent years has been entirely driven by factor accumulation rather than by productivity growth. Economic growth has slowed in recent years in the wake of domestic macroeconomic and structural challenges. This has had an effect on the labor market, with evidence of a bifurcation that is associated with educational attainment. While well educated workers are taking advantage of expanding opportunities in the private sector, especially in urban areas, less educated workers, and particularly those in rural areas, are having more difficulty. Less educated workers and youth from rural areas have more difficulty transitioning into the expanding private sector, and are often left in the agricultural sector or in small informal enterprises, for example as street vendors. With relatively flexible formal labor markets and still widespread informality, even in wage employment (World Bank, 2013a), the main barriers to labor mobility in Vietnam today are skills gaps and shortages and lacking information about vacancies and job opportunities.

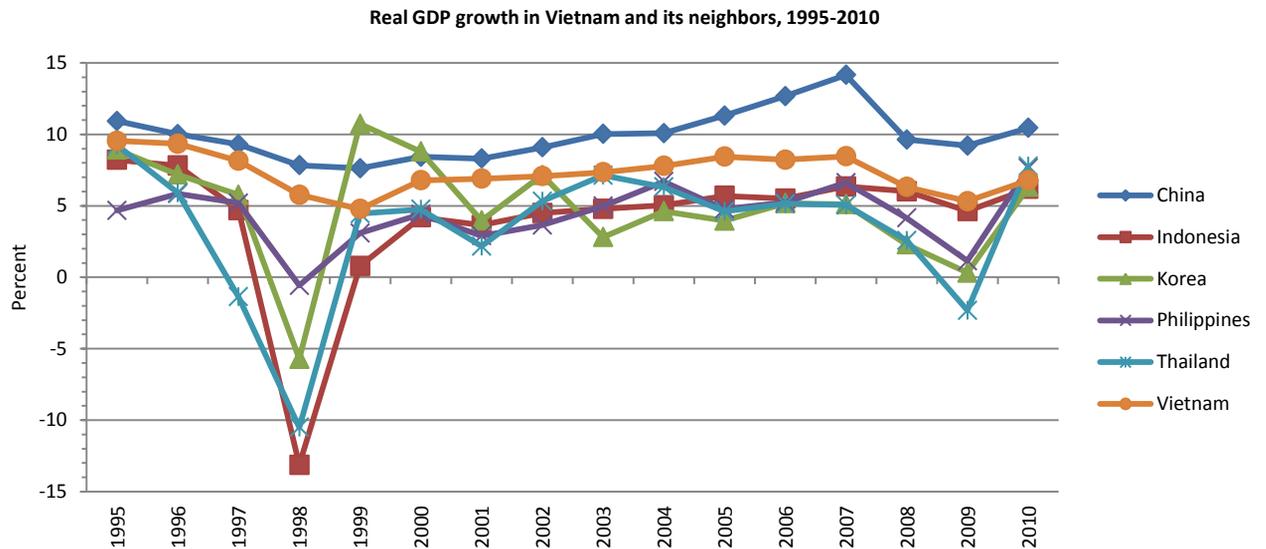
**Strengthening the skills development system is an important element of Vietnam's restructuring needs to ensure that the structural transformation proceeds apace and Vietnam succeeds as a middle income country (MIC).** The experience from Vietnam's more advanced neighbors shows that a continued structural transformation over the coming decade and beyond will trigger a skills-biased occupational transition with growing importance of the types of jobs that require strong cognitive and behavioral skills. The pace of this change will depend on many things, most prominently on the scope of economic restructuring and on the soundness of macroeconomic policy. Taking decisive steps to modernize skills development now can help to accelerate the structural transformation, to improve productivity and growth and to boost living standards - and to ensure that skills will not become a bottleneck.

### Trends in Vietnam's labor market since *đổi mới*

**The *đổi mới* reforms and the transition from central planning to a market economy with a socialist orientation triggered a period of remarkable growth in the 1990s and throughout much of the 2000s.** As shown in Figure 12, real GDP growth averaged 7.5 percent from 1995 to 2007, slightly below China's average of 10 percent. Compared to other countries in the region, Vietnam's economic growth has been remarkably robust to both the 1998 Asian financial crisis and the 2008-2009 global economic crisis. Growth dipped to about 5 percent in 1998, but then quickly rebounded to 7 percent in 2000, before starting to slow to 5 to 6 percent in the late 2000s. Vietnam experienced a growth slowdown since 2008

which, in most recent years, has been driven by domestic macroeconomic and structural challenges. Real GDP growth fell to 5 percent in 2008, temporarily rebounded to 7 percent in 2010, and fell again to 6 percent in 2011 and an estimated 5 percent in 2012.

**Figure 12: Vietnam has seen consistently high rates of economic growth since đổi mới and until recently**

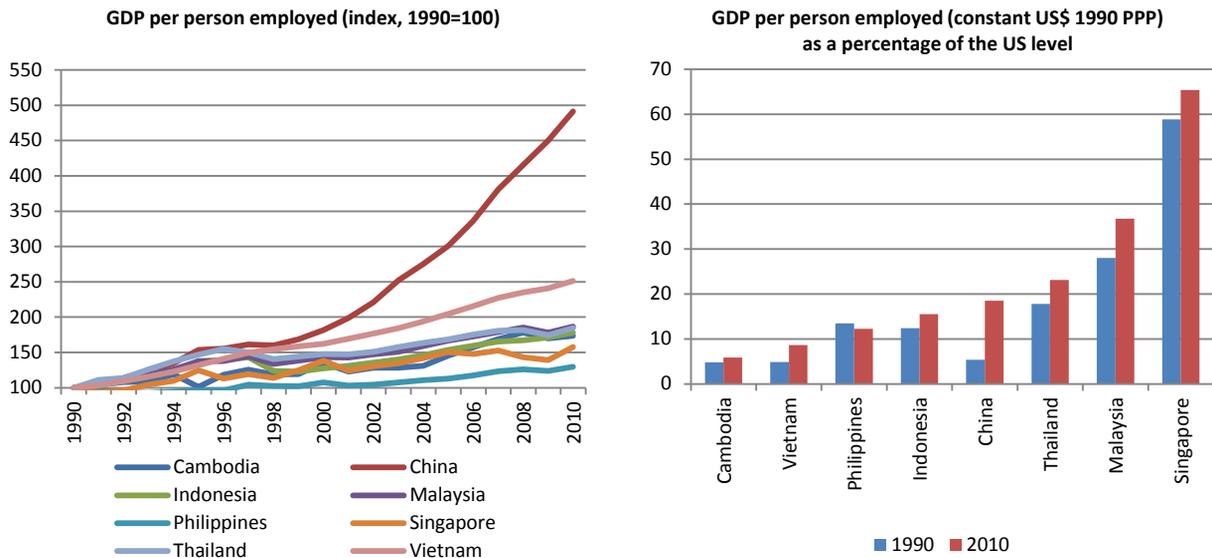


Source: IMF World Economic Outlook, October 2012

**Fast economic growth has helped millions of Vietnamese to escape poverty.** Rising incomes have helped boost living standards in urban and rural Vietnam alike. Poverty has fallen from 58 percent (1993) to 14.5 percent (2008) to under 10 percent (2010), using comparable series of VHLSS surveys, consumption aggregates, and poverty line (World Bank, 2012b). Changes in employment, including improvements in human capital and increases in the employment share of the export sector, have been found to have accounted for over 60 percent of the probability of households escaping poverty in rural Vietnam in the 1990s (Inchauste, 2012).

**Fast increases in labor productivity have been key to Vietnam’s impressive growth performance.** Figure 13 indicates that Vietnam has seen the second fastest growth in labor productivity in the region since 1990 after China, albeit from a very low base. The reallocation of labor across sectors, most notably from low productivity agriculture into non-agricultural wage employment (see below), has been a particularly important component, accounting for 2.6 of 4.2 percent of labor productivity growth. Despite this fast growth, labor productivity remains low relative to its peers, with GDP per person (at constant 1990 GDP) at 10 percent of the United States.

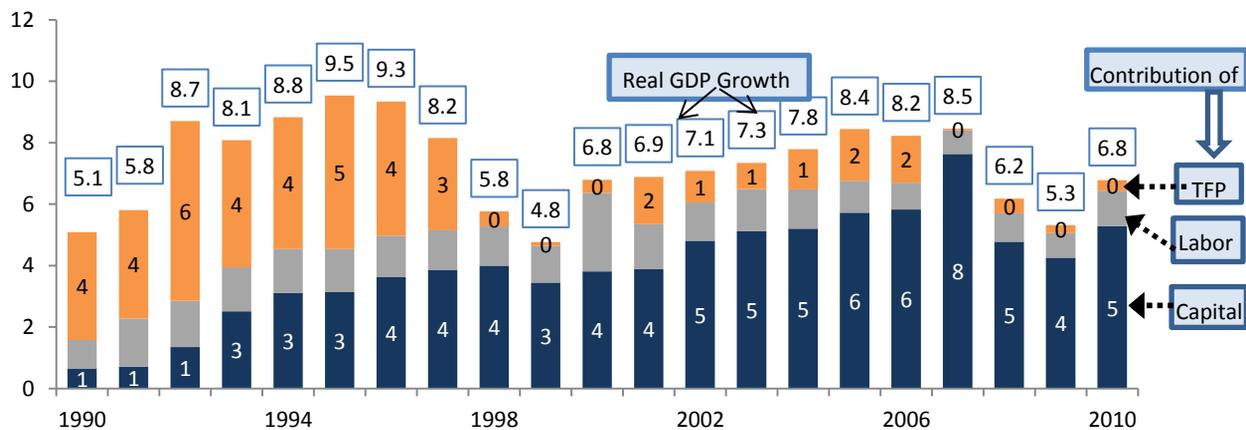
Figure 13: Labor productivity in Vietnam has grown fast since *đổi mới* but remains low compared to its peers



Source: World Bank staff estimates using ILO Key Indicators of the Labor Market

**Although productivity growth was the main driver of GDP growth in the early years of Vietnam’s transition, capital deepening has become more important in recent years.** In the early period after the *đổi mới* reforms, much of the fast GDP growth was driven by increases in total factor productivity (TFP), largely in the wake of liberalization in the agricultural sector and improvements in education which triggered the reallocation of labor across sectors. Over the years, productivity gradually gave way to factor accumulation, in particular to increases in the capital stock, as the main driver of economic growth (Figure 14). The contribution of TFP to GDP growth since 2007 appears to have declined to zero. This is concerning, since relying on factor accumulation as the sole source of economic growth is not a sustainable strategy for Vietnam as it wants to succeed as a middle income country. Rather, a return to sustained strong economic growth will require productivity improvements through structural reforms and investments in human capital (World Bank, 2012a). This is why it is appropriate that Vietnam’s Socio-Economic Development Strategy 2011-2020 places the strengthening of human resources as one of the key breakthrough objectives.

Figure 14: Decomposition of GDP growth in contributions due to capital, labor, and TFP, 1986-2010

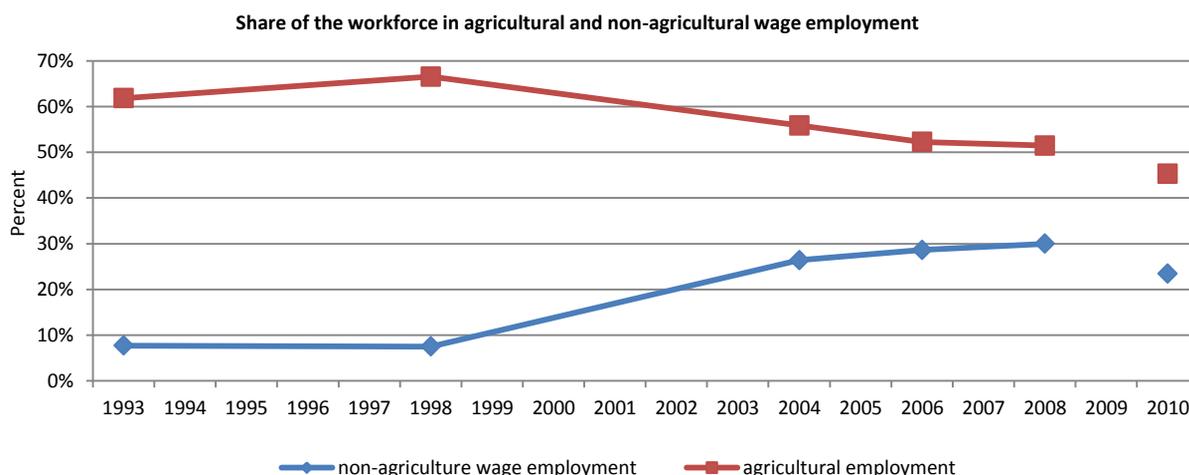


Source: World Bank (2012a)

**Productivity growth was intrinsically linked with a transformation in the structure of the labor market.**

Reforms under *đổi mới* have had far-reaching effects on the labor market, pulling large numbers of workers out of less productive agriculture and into more productive wage jobs. In developing countries, jobs in the agricultural sector tend to be the least productive and worst-paid. As countries develop, workers first shift into non-farm self-employment, and then into wage work. In Vietnam, the strong growth during the 1990s was associated with a substantial reduction in agricultural employment, driven by the dramatic decline in collective farming, and a jump in the share of workers in salaried jobs (Figure 15). Over half of Vietnam’s workforce is now working outside of agriculture, and is increasingly focused on wage employment: Vietnam’s economy is modernizing.

**Figure 15: Vietnam’s structural transformation from employment in agriculture to the non-agricultural sector**



Source: World Bank Staff estimates using VHLSS. The 2010 VHLSS used a new sample frame based on the 2009 census. This captures migration between 1999 and 2009 from rural to peri-urban areas, where fewer workers work in agriculture.

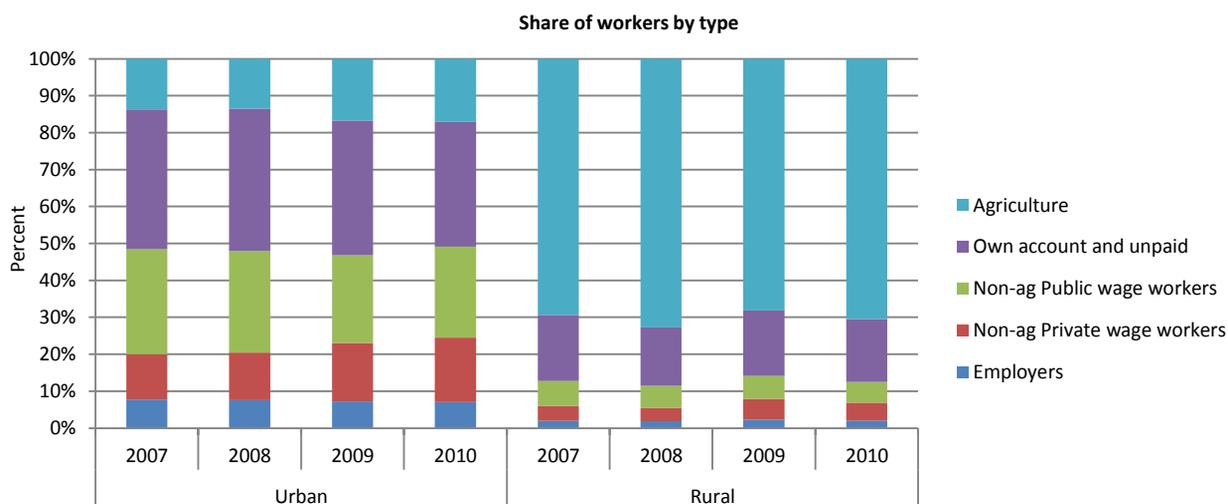
**The reallocation of labor out of agriculture and into wage employment appears to have slowed down in recent years as economic growth has decelerated.**

The initial rapid fall in agriculture from 1998 to 2006 was followed by a slowdown between 2006 and 2008. This has been followed by what, at first glance, appears to be a remarkable shift out of agriculture between 2008 and 2010. Likewise, the share of workers in wage employment appears to have significantly declined between 2008 and 2010. However, because of differences in the sample frame, the 2008 and 2010 results of the Vietnam Household Living Standard Surveys (VHLSS) are not comparable (Figure 15). As will be shown below, many less well educated workers, especially in rural areas, appear to have retained a foot in the agricultural sector during the recent economically difficult years.

**While the share of employment in agriculture appears to have stagnated in rural areas and slightly expanded in urban areas, wage employment in the urban private sector has been expanding fast even during the recent period of economic slowdown.**

Wage employment in the private sector rose from 6 percent to over 8 percent between 2007 and 2010. This growth in the private sector has been more than enough to absorb a slight decline in public sector employment, which fell from 12 to just under 11 percent of the population. In urban areas, the share of private sector wage jobs outside of agriculture rose five percentage points in four years, reflecting a remarkable shift from public to private employment in a relatively brief period (see Figure 16). In rural areas, the growth in private sector employment was much smaller. Meanwhile, consistent with a slowdown in the overall economy, more workers pursued agriculture. Growth in agriculture was particularly noticeable in urban areas, as workers moved out of non-agricultural self-employment.

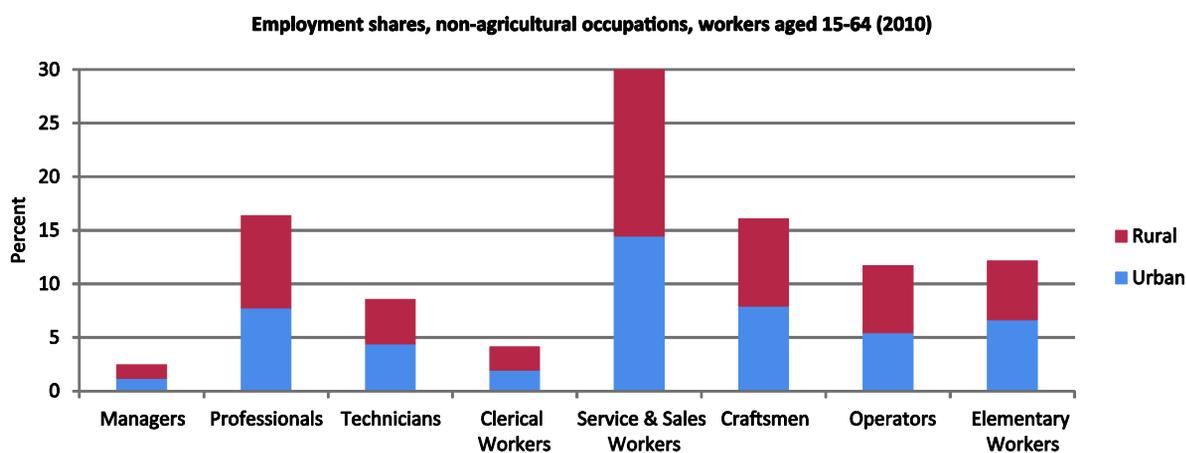
**Figure 16: Most rural workers are still in agriculture, but the share of private sector wage workers has increased in urban areas**



Source: World Bank staff estimation using labor force surveys

**Most non-agricultural jobs in Vietnam today are in blue collar occupations and service and sales.** Jobs as craftsmen, machine operators or in elementary occupations jointly make up 40 percent of non-agricultural employment – much more than technicians. Another 30 percent of non-farm workers work in service and sales jobs. Professionals make up 16 percent of the non-agricultural workforce (Figure 17). Jobs across all these occupations are divided almost equally between rural and urban areas, suggesting that rural areas remain an important part of the non-agricultural economy.

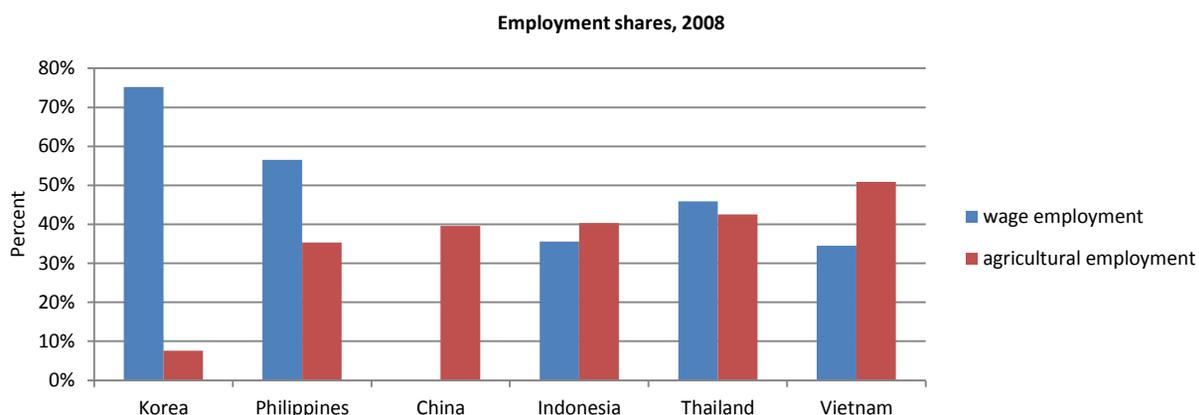
**Figure 17: Blue collar occupations dominate Vietnam’s non-agricultural labor market**



Source: World Bank staff estimations using VHLSS 2010

**Despite the rapid structural change since the mid-1990s, Vietnam’s labor market development still trails that of many of its neighbors.** Vietnam’s share of workers in agriculture remains higher than that in China, Indonesia, and the Philippines, (see Figure 18). Similarly, despite the rapid progress in creating wage jobs that has seen it catch up to Indonesia, Vietnam still lags behind Thailand, the Philippines, and especially Korea in terms of the share of the workforce in a salaried job. What will Vietnam need to do to catch up? What will be drivers of Vietnam’s continued structural transformation in the labor market?

Figure 18: Recent employment trends in Vietnam and its neighbors



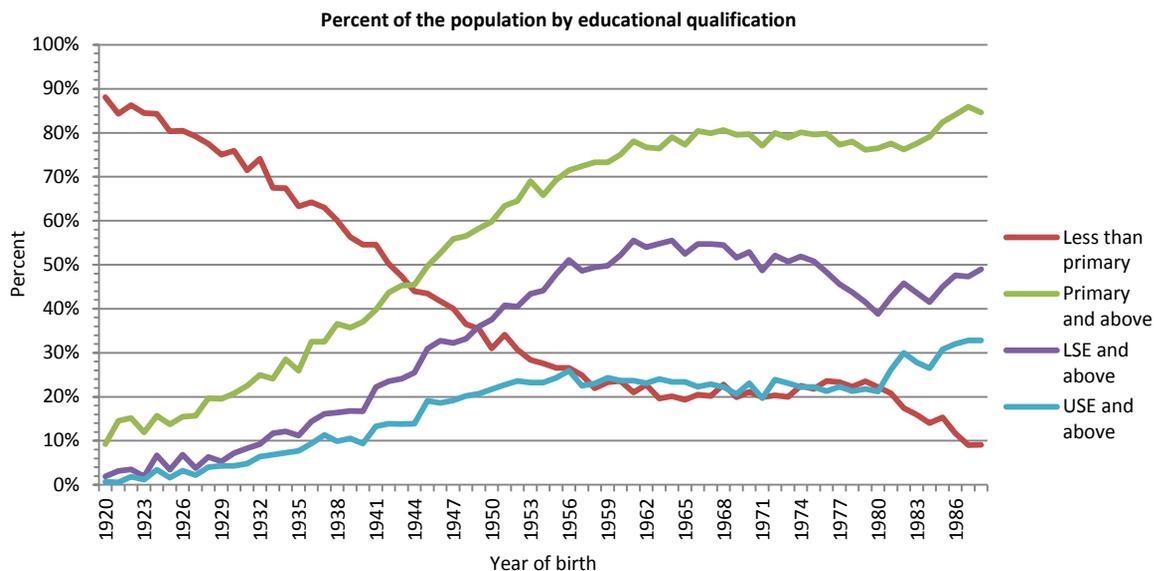
Source: World Development Indicators

**The pace of Vietnam’s continued economic modernization will depend on the success of its economic restructuring efforts. The skills of the workforce are a critical part of that.** Continued economic growth, expansion of the non-agricultural sector and its move up along the value chain will be contingent on sound macroeconomic policy, well planned and executed public investment and reforms in the enterprise and banking sectors (World Bank, 2012a). But worker skills matter, too. This report will show that equipping Vietnamese workers with the right skills will enable them to continue to take advantage of expanding opportunities in a growing, non-agricultural private sector. The remainder of this chapter first examines the role of education in the urban and rural labor market over the last years, which were dominated by the economic slowdown, and then looks ahead to its likely evolution of labor demand over the coming decade.

### The role of education in Vietnam’s labor market

**Expanding educational attainment of Vietnam’s workforce has contributed to the shifts in the labor market.** Over the last decades, the share of Vietnamese without primary education has declined significantly and many workers, especially in professional and technical occupations, now have secondary and higher degrees. Figure 19 presents educational attainment by birth year for those born between 1920 and 1988. Educational attainment increased rapidly for those born before the 1960s: the share of the population with primary education or higher rose from 10 percent to over 70 percent for those born after 1960. This rapid rise in educational attainment stalled, and even reversed in the case of lower-secondary attainment, for the generation born during the turbulent war periods. But the rapid rise in educational attainment continued for those born after 1980 with a particularly sharp increase for those with upper secondary education or higher.

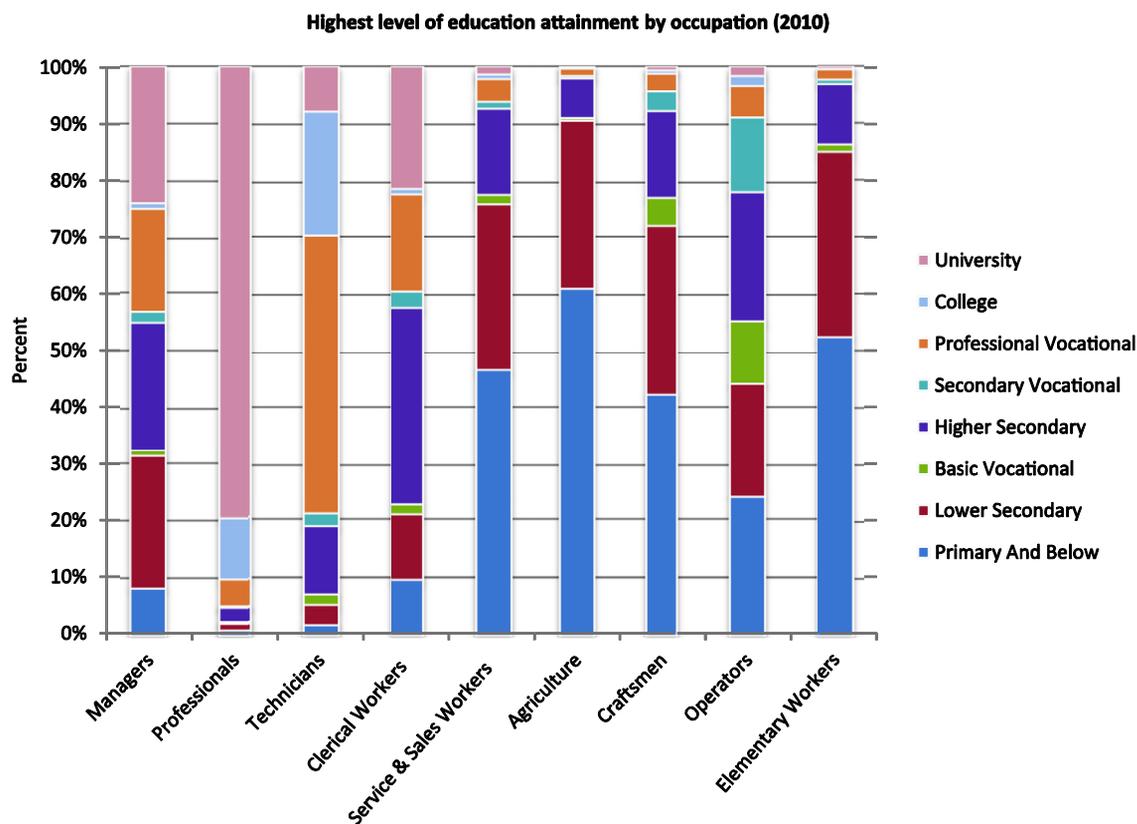
Figure 19: A large expansion in educational attainment



Source: World Bank staff estimations using the VLSS 1998, VHLSS 2004, 2006, 2008 and 2010. Year of birth was estimated based on age and year of survey, only individuals older than 22 were included in order to capture those who have completed their education. The sample consists of 103320 individuals from repeated VHLSS rounds.

**The education profile of today’s workforce varies considerably across occupations.** Basic general education at a primary level and below or at a lower secondary level continues to dominate the education profile of the bulk of Vietnam’s workforce today – workers in agriculture, in elementary occupations, sales and services and among craftsmen (Figure 20). In fact, few craftsmen come with even basic vocational training, while 30 percent of machine operators have completed any level of vocational training. Vocational education and training is predominant among technicians: almost half of technicians hold a professional vocational education and training degree and another 30 percent a higher education degree. Apart from technicians, the best educated are professionals, with almost 80 percent holding a university degree and another ten percent a college degree. There is an important demographic aspect to this: Younger workers are not only better educated than older workers, they are also significantly more likely to work in professional and technical occupations.

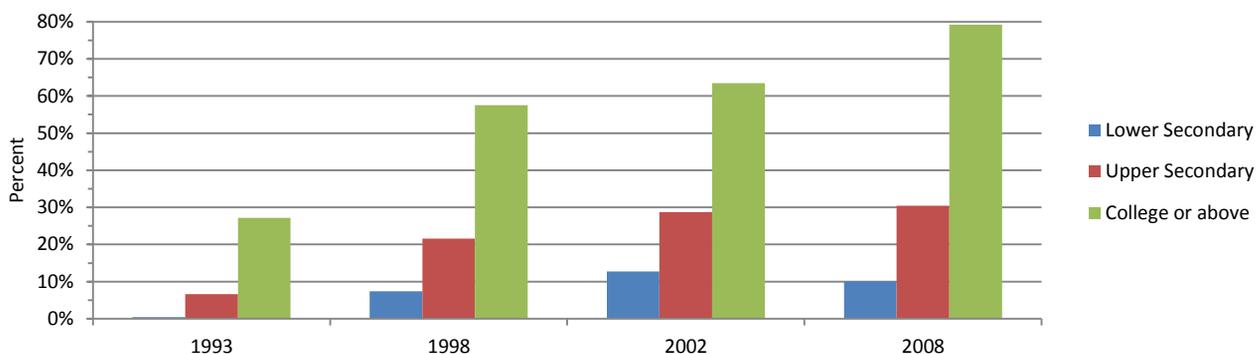
Figure 20: Significant shares of workers in blue collar occupations have primary education and below



Source: World Bank staff estimations using VHLSS 2010

**Despite the large increase in educational attainment in recent years, demand for well-educated workers remains high and the economy continues to reward them.** The rapid increase in educational attainment shown in Figure 19 is partly a response to expanding demand for workers with higher degrees, which has been growing even faster than the supply. This is particularly noticeable at the top end of the education distribution, where the number of college graduates has not kept up with demand. Among wage workers, the returns to college and university education surged to 80 percent in 2008 (Figure 21). The large increase in the number of lower and upper secondary graduates has helped moderate the increase in returns at these lower levels, but upper secondary graduates in wage work could still expect to earn more than 30 percent than primary school graduates.

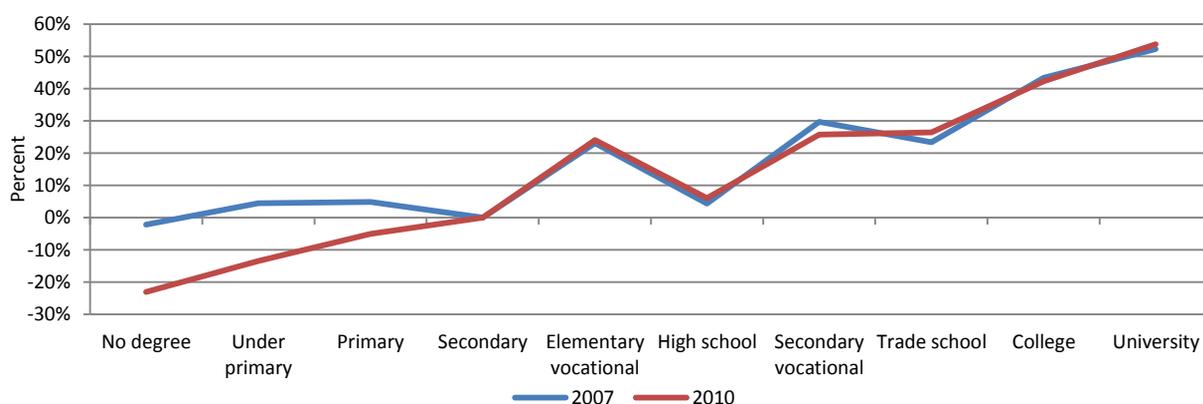
Figure 21: Estimated education earnings premium among wage workers



Source: Coxhead and Pham (2012) using VHLSS

**Strong demand for secondary and higher education graduates has remained robust during the recent years of economic slowdown, but the demand for poorly educated workers has been declining.** As shown in Figure 22, poorly educated workers in wage jobs were earning much less in 2010 than they were in 2007, suggesting a decline in the demand for workers with primary education or less. Meanwhile, returns appear to have hardly changed for graduates from secondary education and above during this period. Graduates with vocational education and training degrees are particularly attractive: earnings premia for workers with elementary and secondary vocational education were higher than for workers with general lower and upper secondary degrees respectively. The high rate of return for tertiary education can help to explain the substantial rise in the share of youth acquiring a tertiary education but also signals the need to continue to expand the fraction of workers with these sought after qualifications.

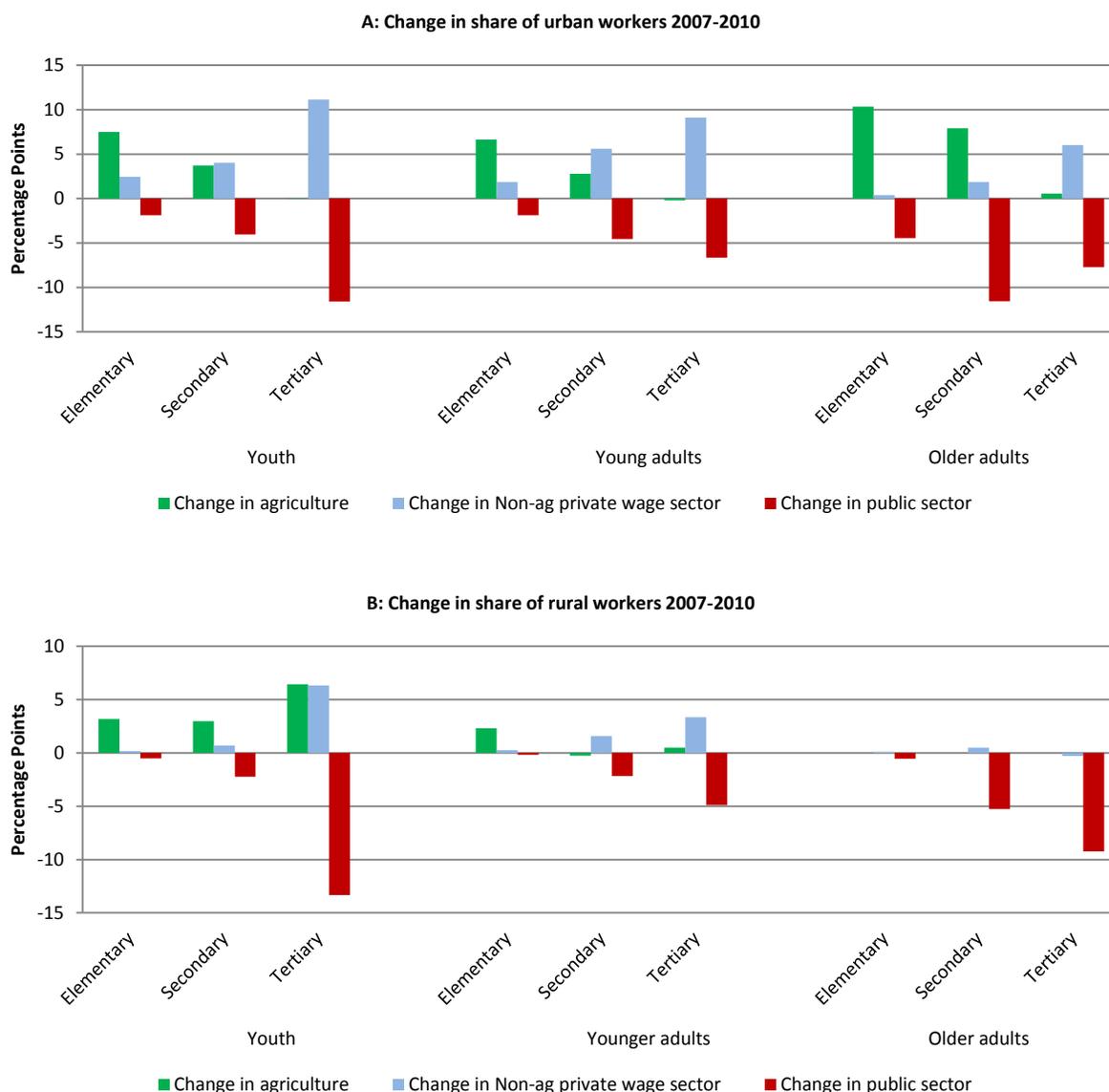
**Figure 22: Estimated returns to education among wage workers (relative to lower secondary)**



Source: World Bank Staff calculations using the Vietnam labor force survey. The returns are estimated using a Mincerian wage regression in which log hourly wages are regressed against education, sex, and experience. Various robustness checks were performed to examine whether the relative returns profile is robust to controlling for sector and occupation.

**Vietnam’s good jobs are increasingly being generated by the urban private sector, and a secondary or tertiary education degree is increasingly a predictor of employment chances.** Vietnam’s labor market appears to have become increasingly bifurcated as public sector employment is declining and the structural transformation has slowed. Many well-educated workers in urban areas, in particular the young, are able to obtain wage work in the growing private sector. But many urban workers with primary or secondary education are not attractive to private sector employers and are forced to take less productive jobs in agriculture (Figure 23). The situation is starker still in the rural areas, where even tertiary-educated workers struggle to land employment in the private sector and have to rely on agricultural employment. In short, the demand for well educated workers in Vietnam is high and has remained robust during the recent economic slowdown. Education and skills are a predictor of labor market success more than ever before. How can the demand be expected to evolve over the coming decade and more?

Figure 23: Change in share of employment by education group and urban/rural, 2007-2010



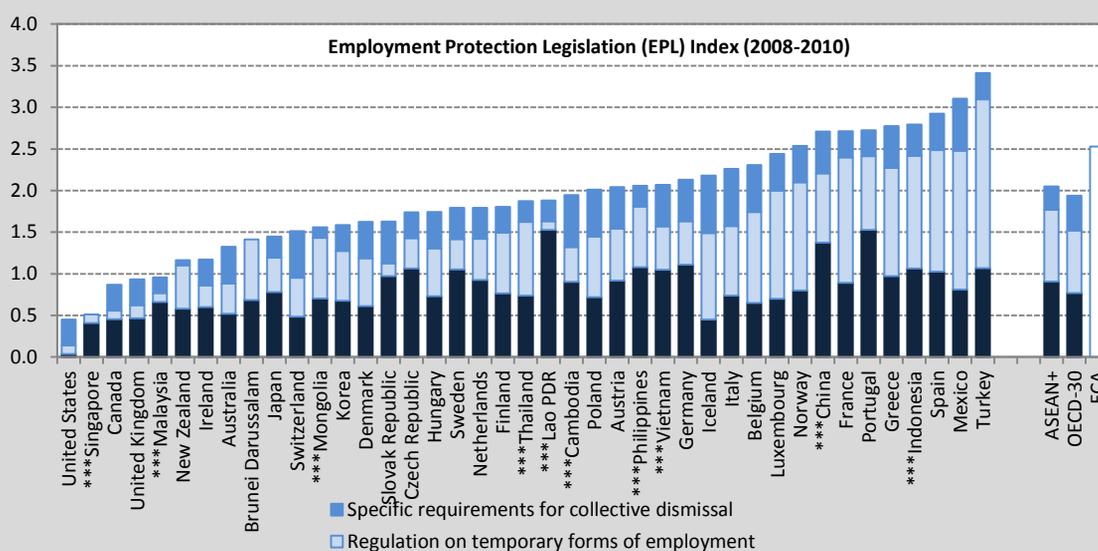
Source: World Bank staff calculations using labor force survey data

**Box 1.1: What barriers to labor mobility in Vietnam?**

Labor market regulations set the legal parameters for employment, for example through a minimum wage or hiring and firing restrictions. These regulations are often considered protective in nature, and are designed in order to address labor market imperfections, such as unequal power between job seekers and providers. However, they may come at an efficiency cost through affecting employment, unemployment and earnings.

In an international comparison, employment protection legislation does not appear to be particularly severe in Vietnam (see Figure 24). The EPL index displayed below compares some of the most critical EPL costs faced by employers across OECD and East Asia and Pacific countries. In de jure terms, Vietnam’s EPL is not particularly stringent for dismissals or regulation on temporary employment. Moreover, in de facto terms the impacts of regulations is likely to be relatively small since informal employment remains widespread, even among the wage employed.

**Figure 24: Employment protection legislation in Vietnam is not particularly restrictive in an international comparison**

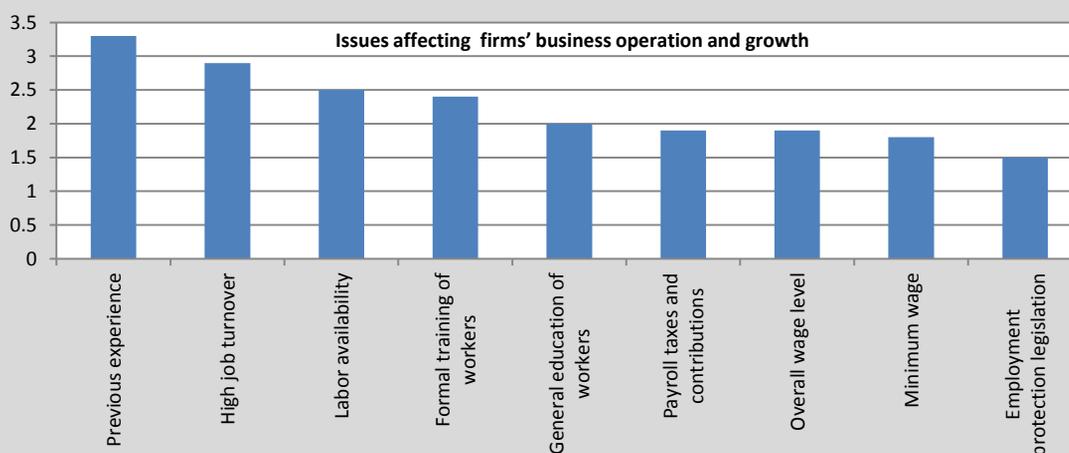


Source: World Bank (2013a). Notes: Score range from 0 (least stringent) to 6 (most restrictive). OECD and ASEAN unweighted average. OECD average includes a sample of 30 countries. OECD figures are for 2010. ECA figures are for 2007 and only reflect a total (with no breakdown by category). \*\*\*ASEAN+ countries

This report argues that skills gaps, skills shortages and information barriers represent the main barriers to labor mobility in Vietnam today, and that labor market regulations play a subsidiary role compared with these other issues. Employers surveyed for the purposes of this report stated that they consider workforce skills and experience bigger obstacles to their business operation and growth than employment protection legislation, (minimum) wage levels or payroll taxes (Figure 25).

Meanwhile, workers report that their main avenue for finding a job is their social network consisting of friends and family and not other, more formal, sources of vacancy and labor market information. This limits the chances of those with limited networks, for example those living in rural areas far away from centers of economic agglomeration, of making good labor market (and education) choices. See Chapter 5 for a more in-depth discussion of information barriers.

**Figure 25: Labor market-related issues are less of a concern to employers than worker skills and experience**



Source: World Bank staff estimations using 2011 STEP Employer Survey. Note: Index score range from 0 (least problematic) to 4 (most problematic). N=330

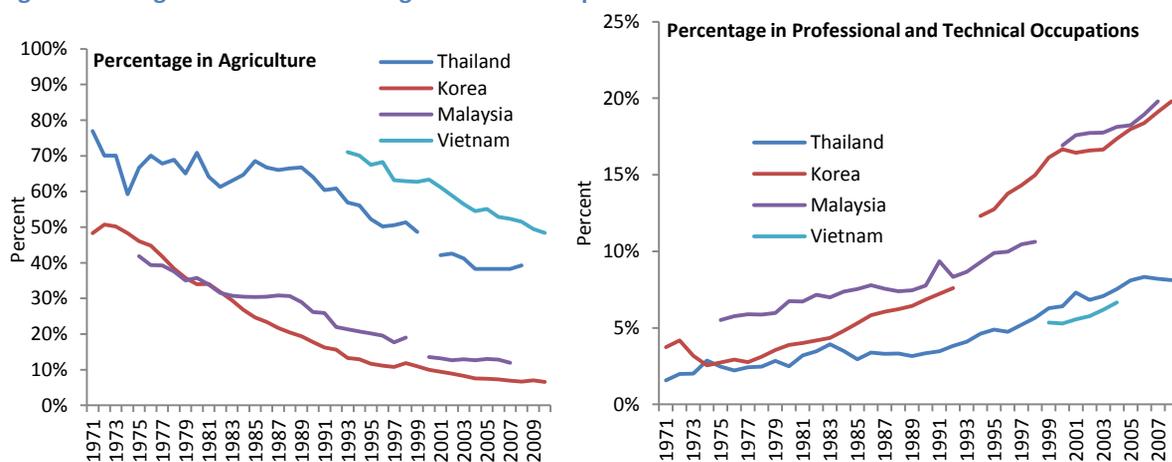
## Looking ahead: Skill needs for an industrializing Vietnam

**The structural transformation since đổi mới has changed the type of work conducted in Vietnam.** The labor market that a young Vietnamese labor market entrant faces in 2013 is quite different from the labor market that they would have entered in the early 1990s. This is not just evident in the employment patterns as described above, but also in the sources of household income: In 1998, the majority of household income came from agricultural production; by 2010, the majority of household income comes from household enterprises and wage employment.<sup>ii</sup> Through the eyes of a recent labor market entrant, the expansion of the non-agricultural sector has changed the type of jobs that they pursue, the careers that they can aspire to and the education and skills they need for these careers.

**What will Vietnam’s future labor market look like and what are the implications for skill needs?** A look at Vietnam’s neighbors is suggestive of the direction that Vietnam might take in the coming decades and what will be likely transformations in the type of work conducted in the next stage of Vietnam’s development. The share of the workforce employed in agriculture in Korea, Thailand, Malaysia and Vietnam has seen a long-term decline (Figure 26, left panel). While approximately 50 percent of Korea’s workforce was employed in the agricultural sector in 1970, this figure had dropped in half to 25 percent by the mid-1980s. Likewise, in Thailand the share of agricultural employment dropped from nearly 80 percent in 1970 to approximately 40 percent in 2010. The decline in agricultural employment was accompanied by an increase in employment in the manufacturing sector, from 13 percent of employment in Korea in 1971 to approximately 25 percent by the mid-1980s.

**The sectoral transformation that occurred in more industrialized countries has been accompanied by a shift to more skill-intensive jobs.** In Korea, Malaysia and Thailand, the share of white-collar workers expanded over time. Figure 26 (right panel) shows the fraction of professional and technical workers in the labor force between 1971 and 2008. Professional and technical occupations include mechanical, civil and other engineers, chemists, doctors, lawyers, technicians in IT and science, teachers, and accountants. Similar, but less pronounced, increases were seen in the fraction of clerical (“pink-collar”) workers, such as receptionists and librarians. Skilled white and blue-collar occupations dominate the manufacturing sector employment in these more developed East Asian economies today. In Thailand in 2010, approximately 10 percent of workers in manufacturing conducted elementary unskilled work, while 27 percent were machinery operators and 45 percent were craftsmen.<sup>iii</sup>

Figure 26: Long-term structural change in East Asia – predictors for Vietnam?

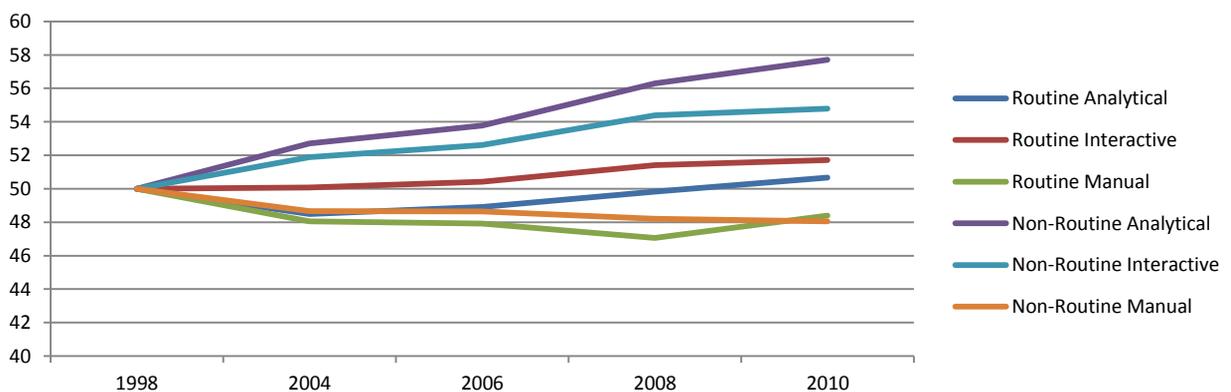


Source: World Development Indicators.

**Placing Vietnam’s economic transformation in the context of its neighbors’ development paths suggests that its economy is at a transitional juncture.** In Vietnam, the labor force employed in agriculture has declined from more than 60 percent in 1993 to 45 percent in 2010, while the share of the workforce in manufacturing has risen by 50 percent from 10 to 15 percent of the labor force. This places Vietnam in a comparable moment to Korea’s economic transformation in 1975, a point at which the economy was transitioning away from low-value added manufacturing activities towards heavy manufacturing (Kim, 1997).

**The skill-biased occupational transition that has taken place in more advanced economies in East and South-East Asia is already underway in Vietnam.** The demand for analytical and interpersonal skills has been growing in urban Vietnam since the early 1990s, while the demand for manual skills has been declining. Jobs that are non-repetitive or non-routine in nature, in other words jobs that involve conducting different tasks on a regular basis, expanded between 1998 and 2010. At the same time those jobs that require the worker to do the same tasks or movements all the time have been contracting (Figure 27; Box 1.2 explains in greater detail how the measure of the skill content of the urban workforce has been constructed).

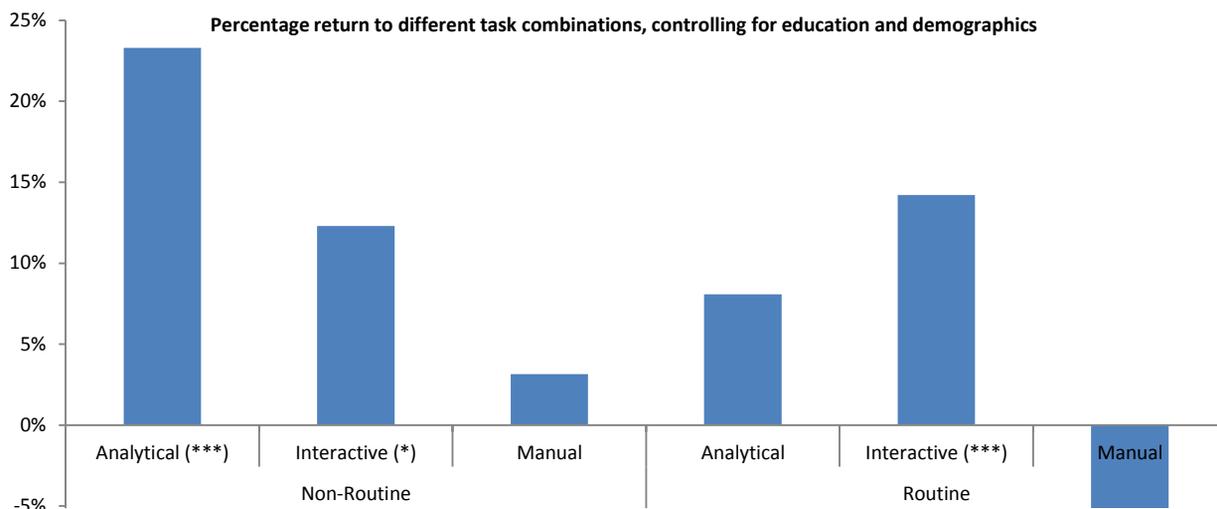
**Figure 27: Trends in the nature of tasks in Vietnam’s urban labor market**



Source: World Bank Staff estimates using STEP and VHLSS, see Box 1.1

**Analytical and interpersonal skills are in high demand and highly valued, as signaled by a high wage returns to these skills relative to manual skills.** It is not just that the use of analytical and interactive tasks has expanded over the last decade. These tasks also carry high wage returns. Figure 28 shows the return to conducting analytical, interactive and manual skills, broken down by whether these skills are used in repetitive or non-repetitive tasks.

**Figure 28: A high return to conducting analytical (problem solving) and interactive tasks in urban Vietnam**



Source: World Bank staff estimates using STEP Household Data. Jobs are divided into categories based on the type of tasks that people found in those jobs are reported to do. In particular, a job is first divided into one that required the individual to perform routine or non-routine tasks, and is further classified into those that are analytical (require continuous thinking and problem-solving), interactive (that require interacting with others) and manual in nature. Jobs can be classified into more than one category, for example jobs can be non-routine analytical and interactive. The return displayed is the return of being in a job in which a task is performed relative to being in a job that is non-analytical, non-interactive and non-manual (for example, office clerks). The returns are estimated using a Mincerian wage regression that controls for education, sex, experience and 1-digit sector as well as the task content of jobs. \*\*\*, \*\* and \* represent statistical significance at a 1, 5 and 10% level respectively. See Box 1.1 for more information on the evidence that was used to generate this figure.

**Box 1.2: Vietnam’s occupational changes through the lens of skills**

The occupational changes that have occurred in Vietnam since the *đổi mới* reforms have changed the type of work that people do and the skills they use in the workplace. The analysis presented here uses the framework of Autor, Levy and Murnane (2003) to examine the changes in the skills content of jobs. Jobs can be thought of as a series of tasks or activities, such as moving an object, presenting information, or conducting a calculation. A worker conducting a job needs to make overarching decisions on what tasks and activities to do next, through prioritizing tasks and making trade-offs in the face of unknown or partial information. For example, an engineer may be required to conduct and choose between multiple tasks including complex analysis, to solve problems, to supervise members of a team and to make presentations about her work. Classifying jobs into the skills that they require allows considering the types of skills that are needed to conduct different types of work, and examining how the skills used in the workforce in Vietnam have evolved over time.

The “Skills toward Employment and Productivity” (STEP) household survey conducted in 2012 and covering Vietnam’s urban working age population asks individuals about the tasks that they conduct in their jobs. For example, workers are asked how often they have to think for at least 30 minutes about a problem, or how often they learn new things in their workplace. Activities or tasks conducted in different occupations are separated into four main categories: routine or non-routine activities, analytical work, interactive work and manual work. Routine and non-routine is used as a primary classification, since it allows a separation of jobs into those that are predictable and repetitive (routine tasks, such as those conducted by assembly line workers in factories) and those which require workers to be adaptive to changes in their environment and not repeat the same processes on a regular basis (non-routine tasks, such as those conducted by architects, doctors, truck drivers). The table below details the tasks and types of occupations conducted in different skill brackets.

**Table 2: Tasks and types of occupations conducted in different skill brackets**

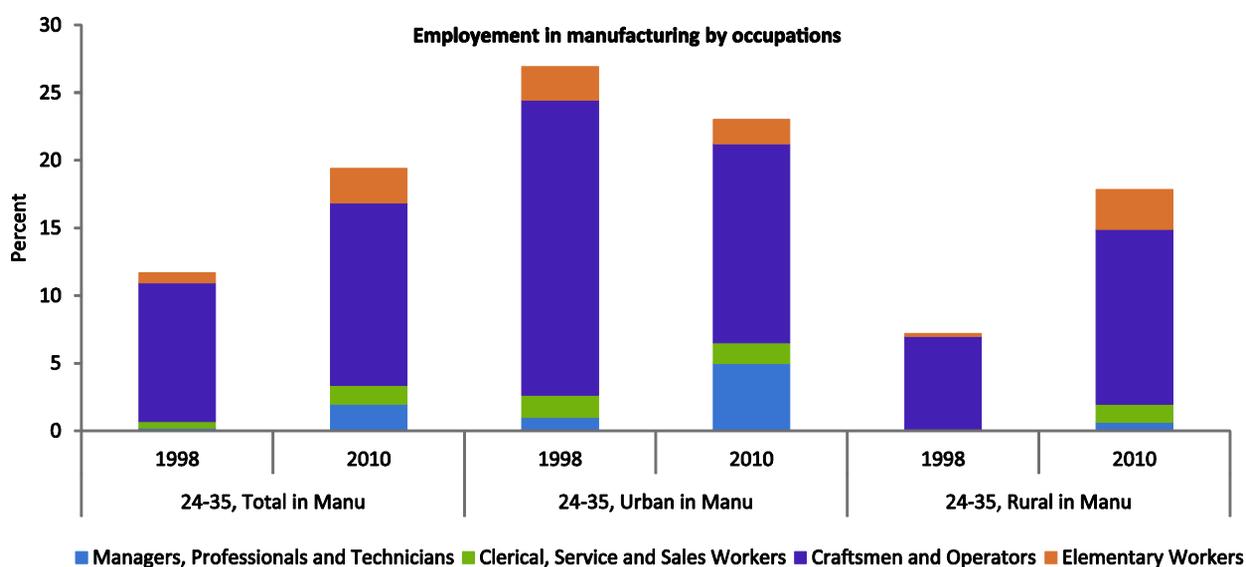
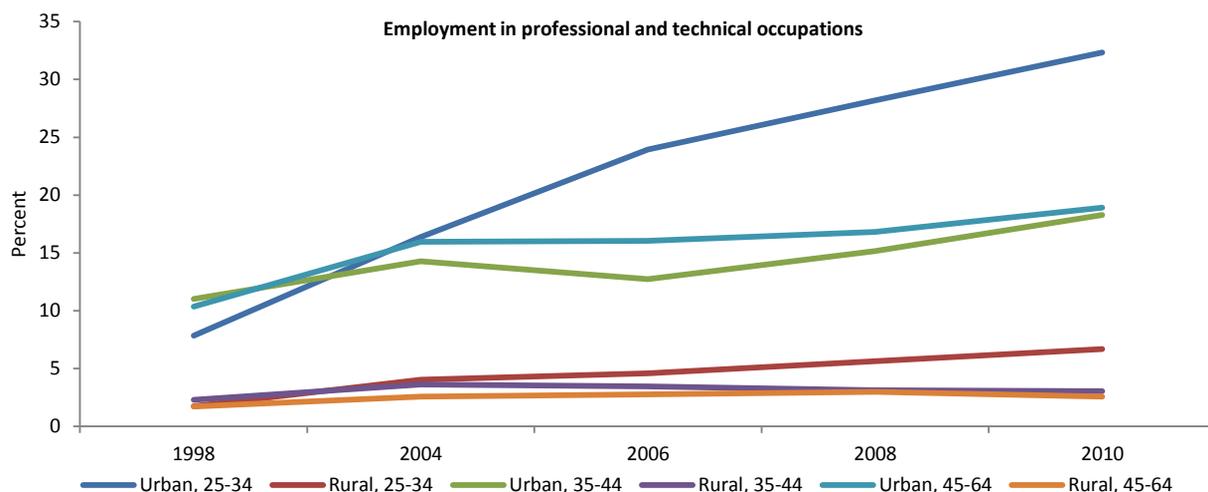
	<b>Analytical</b>	<b>Interpersonal</b>	<b>Manual</b>
<b>Routine</b> Conducting short repetitive tasks all the time	Think for at least 30 minutes at least once a week  Learning new things every day	Contact with people other than co-workers  Making formal presentations to clients/colleagues to persuade them on a topic  Direct or supervise other workers	Drive a car;  Operate heavy machines or equipment;  Work is considered to be relatively physically demanding;  Lift or pull anything weighing at least 50 pounds
<b>Non-Routine</b> Conducting short repetitive tasks less than half the time			
<b>Examples of jobs</b>	<b>Routine:</b> Armed forces officers, shop sales persons, machinery mechanics  <b>Non-Routine:</b> Architects, Marketing, Finance Professionals, Teachers	<b>Routine:</b> Shop tellers, hairdressers  <b>Non-Routine:</b> Engineers, Sales and marketing assistants and professionals	<b>Routine:</b> Truck operators, food preparation, craftsmen  <b>Non-Routine:</b> Shop sales persons, transport clerks, repairmen

Using the information in the STEP household survey on the task content of jobs and data from the VHLSS, it is possible to estimate the fraction of the urban workforce that are in jobs using analytical, interpersonal and manual skills between 1998 and 2010. The average skill used in occupations (at a one digit level) can be calculated using the STEP survey, and then the average skill usage can be applied to the fraction of the urban population in that one digit occupation, as captured in the VHLSS. An increase in the fraction of the population with, for example, non-routine analytical skills implies that occupations that are relatively intensive in the use of these skills are expanding over time.

Figure 27 above shows the evolution of these skills in the workforce over time, using the fraction of the workforce using those skills in 1998 as the benchmark. In absolute terms, the fraction of the population doing routine tasks and using manual skills continues to be high. However, the fraction of the population in jobs that use analytical and interpersonal skill sets has increased over time in urban Vietnam, while the fraction of the population in jobs that use manual skills has declined over time. Therefore although work using manual skills continues to be in demand, there has been a gradual shift in the fraction of jobs that use analytical and interpersonal skill sets.

**The transition into jobs requiring more advanced cognitive and behavioral skills has already begun with the youngest generation of labor market entrants.** Figure 29 shows the fraction of workers employed in professional and technical occupations, by location and age cohort. Among labor market participants aged 25 to 34, there appears to have been a sharp increase in the fraction employed in professional and technical occupations in urban areas. These occupations have also been on the rise among other age cohorts in urban areas, albeit less rapidly, and have also expanded to account for 7 percent of jobs among younger rural workers. In rural areas, the expansion of the manufacturing sector has increased the demand for craftsmen and machine operators. The fraction of 25 to 34 year olds working in skilled blue-collar occupations in manufacturing has more than doubled from 7 percent of the rural workforce in 1998 to 18 percent in 2010.

Figure 29: Employment in technical and professional occupations has been growing for the youngest cohort



Source: World Bank staff calculations using VHLSS

## Summary

The expanding educational attainment of its workforce has been one of the key drivers of the rapid modernization of the Vietnamese economy since the launch of the **đổi mới** reforms. Universal primary education and expanding secondary education has helped workers make the transition out of agriculture into non-agricultural wage employment and from the rural to urban sector. In recent years, education has become an ever more important predictor of success in finding a good job in the expanding occupations and in the urban private sector. While the majority of jobs are in skilled blue collar occupations, employment in professional and technical occupations has grown rapidly in urban areas and with it the demand for workers with a secondary general and vocational or higher education degree.

**Experience of Vietnam’s neighbors suggests that the sectoral and occupational transformations witnessed over the last 20 years are likely to continue.** However, this transformation is not automatic and the question is how fast its pace will be. Structural reforms in the enterprise and banking sectors and sound macroeconomic policies will matter in ensuring continued fast change, but so will the quality

of Vietnam's workforce. With changes in education and training taking a generation to result in a workforce equipped with the right skills, the right time to modernize skills development to ensure worker skills do not become a bottleneck is now.

**Jobs that are likely to grow in Vietnam – in professional and technical occupations – require workers to have more advanced skills than those working in jobs that are likely to decline in demand over the next 20 years.** Traditional jobs in agricultural and elementary occupations require routine and manual work. The jobs of the future involve performing increasingly complex tasks that require workers to be able to solve problems, learn on the job, and to be responsive to shifting needs. They also require workers to have strong social and behavioral skills, since they will require workers to conduct tasks such as working in teams and supervising others. These more complex tasks command higher wages, commensurate to the more advanced skill sets they demand. The next chapter will review the demand for skills by Vietnamese employers today and assess to what extent the education system is providing graduates with these skills.



## Chapter 2: Skills for current and future jobs

**The shift away from agriculture seen since the đổi mới reforms has changed the type of work that Vietnamese people do and the skills that they need to do their jobs.** Jobs can be thought of as a series of activities, such as harvesting rice, sowing clothes, checking the temperature of a patient, calculating profits and presenting analysis. A worker conducting a job needs to make overarching decisions on what tasks and activities to do next, through prioritization and recognizing trade-offs. Making these choices and conducting these activities requires a set of skills for the person to perform them well, from physical strength and manual dexterity to numerical skills and the self-confidence to put forward new ideas. Vietnam is gradually moving away from the type of jobs that consist mainly of manual and repetitive activities, and is moving towards jobs that require workers to solve problems and to use more modern technology.

**Although the shift in the demand for skills in Vietnam has been gradual, it has been transformative. The change in the type of jobs that Vietnamese people do over time has implications for the skills that the education system needs to build.** A young urban labor market entrant in Vietnam faces a more diversified choice of career paths than ever before, but also faces a more demanding set of employers. Rural households that were previously focused on agricultural activities have moved in large numbers into non-farm enterprise activities that require choosing products and suppliers, interacting with customers, setting prices, and calculating profits. Although this report focuses on data from urban areas, the rise in non-agricultural activity in rural areas implies that similar, if not as fast paced, transitions are underway there. These changes to what people across rural and urban Vietnam do on a daily basis imply that the way that they use their education has changed over time.

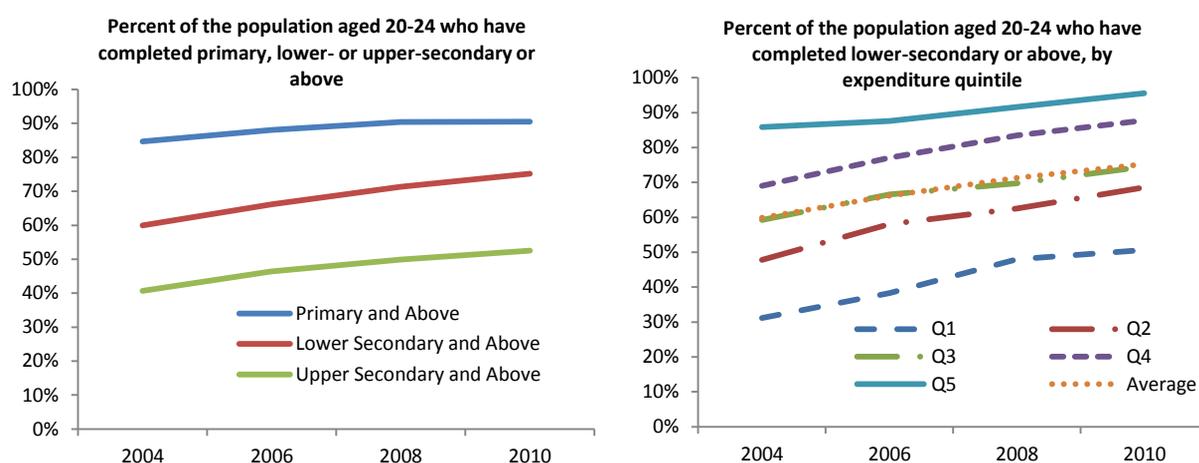
**Both employers and employees in urban areas report that the education system does not provide all the skills needed in the current Vietnamese labor market. The skill shortages are reported to be greatest for firms with international links, and among employees expected to do complex tasks.** Although education has rapidly risen over the last thirty years, both employers and employees recognize that the education system today does not provide graduates with all the needed skills for their enterprises, workplaces, and career aspirations. Reports from employers suggest that the economy suffers from a skills shortage, and that the shortage is a substantial obstacle to the operation and growth of Vietnamese firms. “International” firms (FDI firms, firms that are engaged in international trade and firms that have international links) are affected by the skills shortage more than “local” firms. This means that the skills shortage, if not addressed, may become a binding constraint to the modernization and growth of the Vietnamese economy. Workers of all education levels report that their literacy and IT skills are a constraint to their career growth.<sup>iv</sup>

**Although occupation specific technical skills are in high demand, employers value a broader skill set.** There is a strong return to education in urban Vietnam, and the return to education has increased over time (Coxhead and Pham, 2012). One reason why people with upper-secondary or university education earn more than those with primary education is that they have better technical, cognitive, social and behavioral skills. Employers value and pay for cognitive and technical skills, such as being able to solve problems and think critically. Employers also value social and behavioral skills, such as being able to communicate well, work in teams and have positive job attitudes. This chapter presents the type of skills that are demanded by employers in urban Vietnam and examines the importance of skills in Vietnam’s economy. It shows that in order to serve the emerging needs of the labor market, it is necessary to look beyond educational attainment to focus on the underlying skills that are produced by the education system.

## Shifting the dialogue: from education to skills

Vietnam has made impressive strides in raising education levels and in reducing inequalities in education access over the past two decades (World Bank 2008). Among young adults aged between 20 and 24, 90 percent had completed primary education in 2010 compared to 85 percent in 1998 (Figure 30). The rise in primary school completion among this age cohort has been dominated by poorer households, and primary completion rates among the rural and urban population are nearly identical among individuals transitioning into the labor market in 2010. More importantly, these gains in education and narrowing disparities across income groups are also seen at lower and upper secondary levels. The share of 20 to 24 year-olds who have completed at least lower-secondary education has increased across all income quintiles, and most notably among the poorest households. In urban Vietnam, six in ten workers have attained a higher level of education than their parents, and the youngest cohort of labor market participants is more likely to have graduated from tertiary education than older workers. Enrolment rates reported by UNESCO's Institute of Statistics reveal a rapid increase in tertiary enrolment from 10 percent in 2000 to 24 percent in 2011 (UNESCO, 2013).

Figure 30: Vietnam's workforce has become better educated over time



Source: World Bank staff estimates using the Vietnam Household Living Standards Survey 2004 to 2010.

### Box 2.1. Skills towards Education and Productivity (STEP) Household and Employer Survey

The STEP Skills Measurement Project (STEP) collected information on the supply and demand side for skills in multiple countries across the world, including Vietnam (urban), Yunnan Province, China (urban), Lao PDR (urban and rural), Sri Lanka (urban and rural) and Bolivia (urban). The Vietnam STEP data were collected in 2011 and 2012 as part of this multi-country international initiative to shed light on skills in the workforce. The STEP data consist of two surveys, a household and employer survey, aimed at collecting information on the supply and demand for skills in the population of Ho Chi Minh City and Hanoi.

The STEP household survey collected detailed information on education, skills, work history, family background and labor market outcomes for 3,405 individuals of working age (between 15 and 64). The survey includes three modules to capture different types of skills, notably: (i) a test of reading literacy to assess the level of competence of the individual to access, identify, integrate, interpret and evaluate information; (b) a battery of self-reported information on personality and behavior; (c) a series of questions on task specific skills that the respondent possesses or uses in his or her work. The same questions were asked in all countries participating in the survey, therefore allowing for international comparisons of skills and skill development.

The skill profile of older workers reflects a life-time of accumulation at work and school, while the skill profile of younger individuals reflects accumulation during earlier stages. Skills depend on innate abilities, learning at home

and school during early childhood and early childhood, and also on acquisition on the job. More discussion on the measurement of skills can be found in the in-depth section at the end of the chapter.

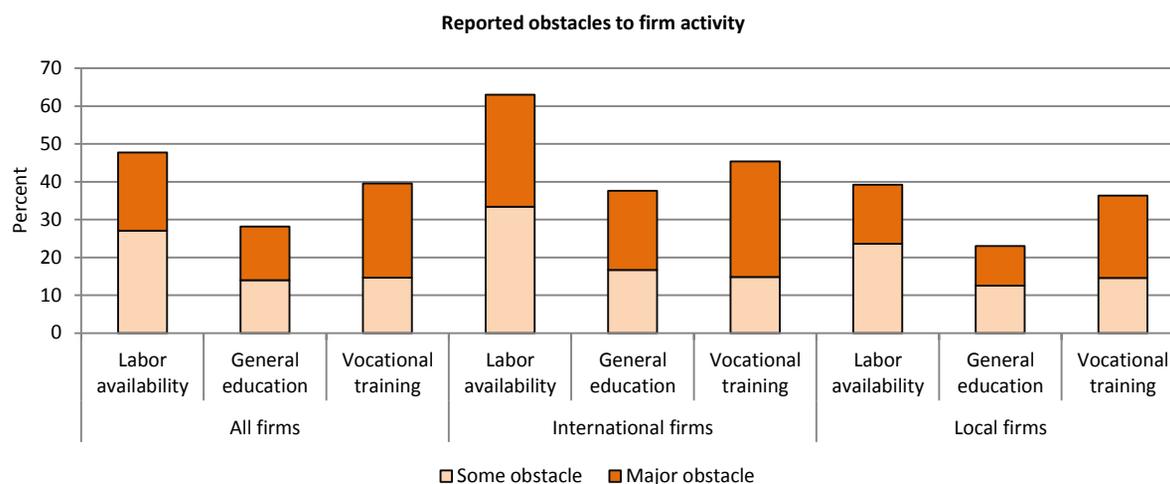
The STEP Employer Survey was conducted in Ho Chi Minh City and Hanoi and immediately surrounding provinces; it can therefore be considered to be representative of these two major urban conglomerations. The Employer Survey gathers information on hiring, compensation, termination and training practices as well as enterprise productivity. The survey includes questions to identify: (a) employers' skills needs and utilization; (b) the types of skills that are considered of most value; and (c) the tools used to screen prospective job applicants.

Throughout the text, "international firms" are defined as firms that have international business contacts with entities in other countries. International firms are considered as "modern" firms, while firms that do not have international business contacts as "traditional" firms. International firms represent 35 percent of all firms, but account for 93 percent of total employment in the survey. International firms are thus much larger than local ones: on average they employ 490 workers compared with 29 workers employed by local firms. International firms are more likely to report good economic performance than local firms and more frequently introduce innovations. However, the share of blue collar occupations is significantly higher in international firms, while the share of white collar occupations (including professionals and technicians) is lower. There are no significant locational differences between international and local firms.

The Employer and Household survey uses the same skills concepts and definitions, which enables the analysis of skills constraints from demand and supply side perspectives. On the person or worker side, the household survey measures the human capital stock of skills – the skill supply. On the employer side, the Employer survey captures the types of skills demanded and potential shortages – the demand for skills. The simultaneous measurement of skills stocks and demands allows an in-depth analysis of skills needs and the skill profile of the population of Ho Chi Minh City and Hanoi.

**Despite the impressive rise in education acquisition, many Vietnamese firms report a shortage of workers with adequate skills as a significant obstacle to their activity.** A majority of employers surveyed under the STEP Employer Survey (see Box 2.1) report that hiring new workers is difficult either because of inadequate skills of job applicants (a "skills gap"), or because of a scarcity of workers in some occupations ("skills shortage") (see Box 2.2 for a definition of these terms).<sup>v</sup> STEP evidence suggests that worker skills and availability are more binding concerns for employers than labor market regulations and taxes. Over 60 percent of international firms view the availability of labor with the right skills as an obstacle to their activity, and nearly half of these firms view it as a major obstacle (Figure 31). Nearly 40 percent of international firms see the general education of workers as an obstacle, and 46 percent see vocational education as an obstacle. Employers from international firms estimate that 13 to 14 percent of their employees are not fully qualified to do their jobs. This suggests that, despite expanding attainment, the educational system does not respond to labor market needs, and that improving the quality of education will remove an important barrier to productivity and growth of Vietnamese firms.

Figure 31: A shortage of workers with adequate skills is a key obstacle to firm activity



Source: World Bank Staff Calculating using STEP Employer Data. N=305. Employers were asked to report whether labor availability, the general education and formal training of workers was an obstacle to the operation and growth of their businesses.

**Employers hold the education system accountable for not providing graduates with the skills needed in their workplace.** Vietnamese employers are highly critical of the quality of the education system. Almost half of the employers in the STEP survey complain that graduates do not have the level of skills needed in their workplace. International firms complain about the quality of education more often than local firms. Two thirds of all international firms claim that both the general and vocational education systems do not meet the skill needs of their workplace. In the eyes of the employers, school leavers are equipped neither with the appropriate skills acquired through the school and university system, nor with the appropriate vocational skills.

**Box 2.2: Defining skill gaps and occupational skill shortages**

Firms report that hiring workers is difficult. Although the explanation for this varies by occupation, two explanations stand out. First, applicants lack required skills – *a skills gap*. Second, there are no or few applicants – *an occupational skills shortage*. Other reasons, such as excessive wage expectations, unsatisfactory working conditions (meaning that the applicants turn down the job offer), usually play a secondary role.

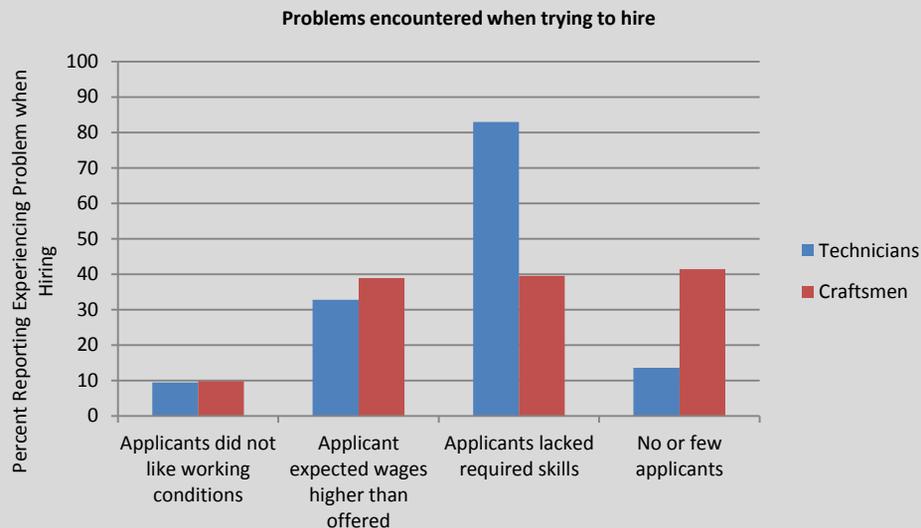
*An occupational shortage* occurs when, given the prevailing wage level, the demand for workers with certain occupation specific technical skills exceeds their supply. When firms are not able to fill vacancies in a certain occupation because there are too few applicants, this is an indication of an occupational shortage. For example, when the job vacancy rate for electricians is high this points to a shortage of electricians. An occupational shortage tends to be associated with a growth in relative wages for the workers in the occupation that is in a short supply. In a competitive labor market the growing relative wages induces an increase in the supply of workers in the given occupation; this eventually leads to an equilibrium whereby demand and supply match.

*A skills gap* occurs when workers lack the skills required by employers. They may lack either technical skills, or cognitive skills, or social and behavioral skills (or some combination of them). An indication of a skills gap is when employers find it difficult to hire workers with the required skills despite the fact that there are numerous job applicants. For example, there are many applicants for a position of an office clerk, but employers are not satisfied with the applicants’ skills. A skills gap points to weaknesses in the educational system in the sense that it does not equip workers with the skills demanded by employers. Accordingly, a skills gap should be addressed by reforms to the education and training systems.

Figure 32 illustrates the difference between these two concepts. If there is an occupational shortage, job vacancies are difficult to fill because there are few applicants. Craftsmen are the case in point. Many employers

found it hard to hire craftsmen because there were no or few applicants. This means that the supply of craftsmen falls short of the demand, which may point to an underdeveloped vocational education and training system. This is in a sharp contrast to the case of technicians (as well as professionals) where it is the lack of adequate skills among the job applicants, rather than the lack of applicants, that is the main problem. This is a clear case of a skills gap. Workers have the diplomas (formal qualifications) required for the jobs that they apply, but they lack the actual skills they need to do their jobs. This may indicate that the quality of tertiary education does not keep up with employers' expectations.

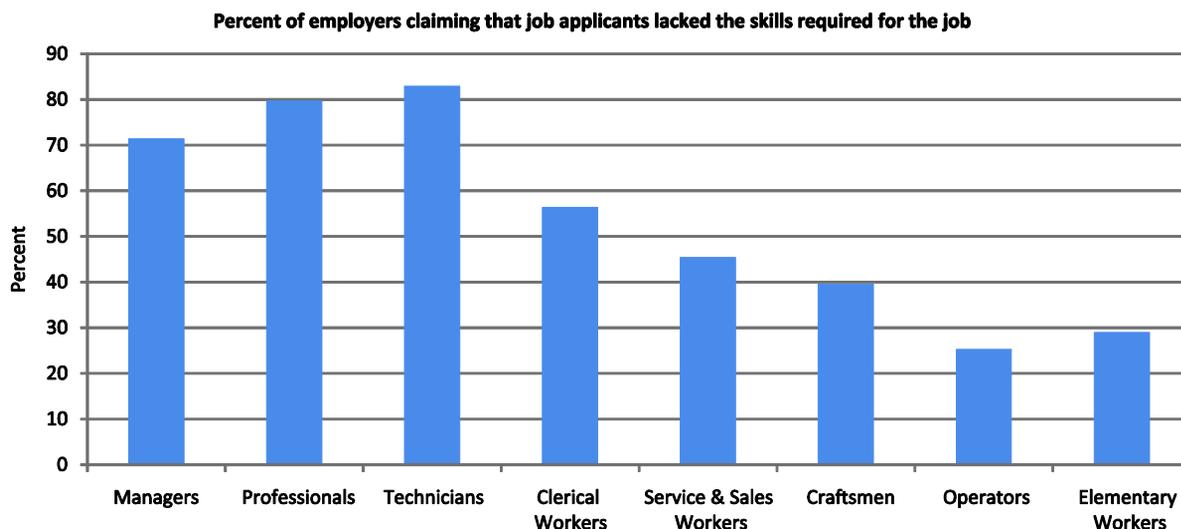
**Figure 32: Skills gap vs. occupational shortage: a tale of two occupations**



Source: World Bank Staff estimations using STEP Employer Data. Employers were asked if they had tried to hire workers in various positions during the last 12 months. Firms were asked about the problems that they encountered when hiring for these positions. The figure covers reports from 132 firms who reported hiring craftsman and 34 firms who reported hiring technicians. Since the number of firms who report hiring technicians is small, care should be taken in interpreting this figure. The displayed differences between technicians and craftsmen are statistically significant at a 5% level for two responses: applicants lacking required skills and for few applicants.

**Concern about missing skills is particularly pronounced among white-collar workers, such as professionals and technicians.** A lack of required skills among job applicants is cited by approximately 80 percent of employers who were trying to hire professionals and technicians. By comparison, a lack of required skills is cited by only 40 percent of employers who were hiring craftsmen.<sup>vi</sup> However, the severity of the skills gap among blue-collar workers should not be underestimated. The percentage of employers who complain that blue-collar workers lack required skills is substantial: 25 percent of firms claim that workers applying for a position of machine operator lack the required skills (Figure 33). There is substantial room to improve the skills of blue-collar workers in order to match the job requirements.

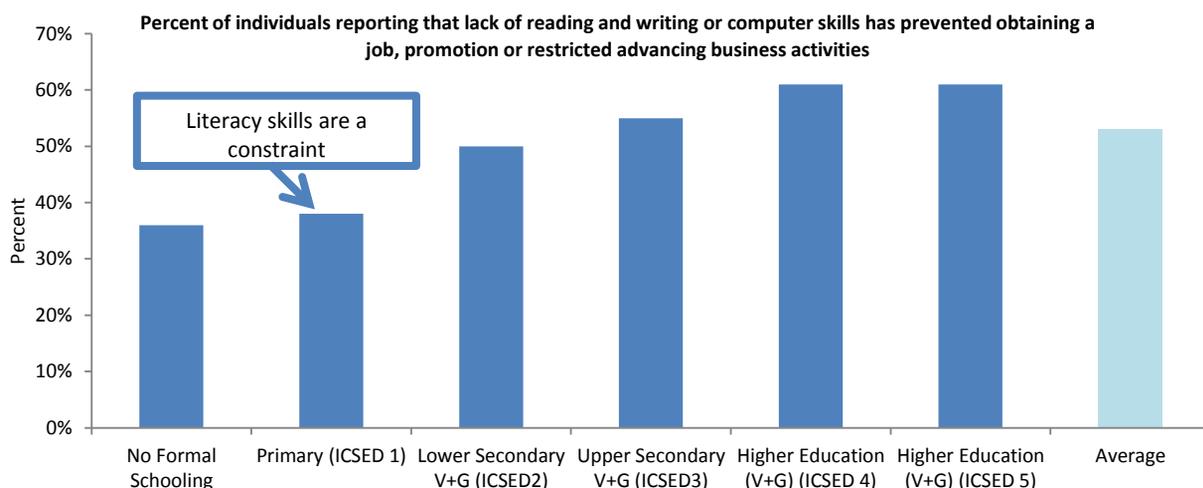
Figure 33: Many job applicants lack the required skills, particularly those applying for white-collar occupations



Source: World Bank Staff Calculating using STEP Employer Data. Employers were asked if they had tried to hire workers in various positions during the last 12 months. Firms were asked about whether the applicants for the positions lacked the required skills when hiring for these positions. 350 firms were asked about hiring; the figure covers the following number of employers hiring a given position: Managers, 36 firms; Professionals, 18; Technicians, 34; Clerks, 98; Service & sales workers, 114; Craftsman, 132; Machine operators, 87; and Laborers, 78.

**Employers’ concerns on skill constraints are mirrored by worker’s views that their skills limit their ability to advance in the workplace.** Although workers value their education, they report that their skills constrain their workplace development. Approximately half of workers report that their education was either moderately or very useful for their current work. More highly educated workers and those working in skilled occupations are more likely to report this to be the case. However, the majority of workers report that their writing and reading skills – core analytical skills – are a constraint to their career advancement (Figure 34). Highly educated workers and those who are required to read and write lengthy documents as part of their work are the most likely to report that they do not have all the literacy skills needed to progress in their workplace. Although these workers have strong basic literacy skills – they perform highly on the literacy test, and also have the highest self-reported literacy and writing skills – they may not have the full set of written analytical skills and argument foundation skills they need for their workplace development.<sup>vii</sup> Similarly, these individuals report that their information technology (IT) skills are not as advanced as they would need for their careers.

**Figure 34: More educated workers are more likely to report that a lack of reading and writing or computer skills has prevented obtaining a job, promotion or restricted advancing business activities**

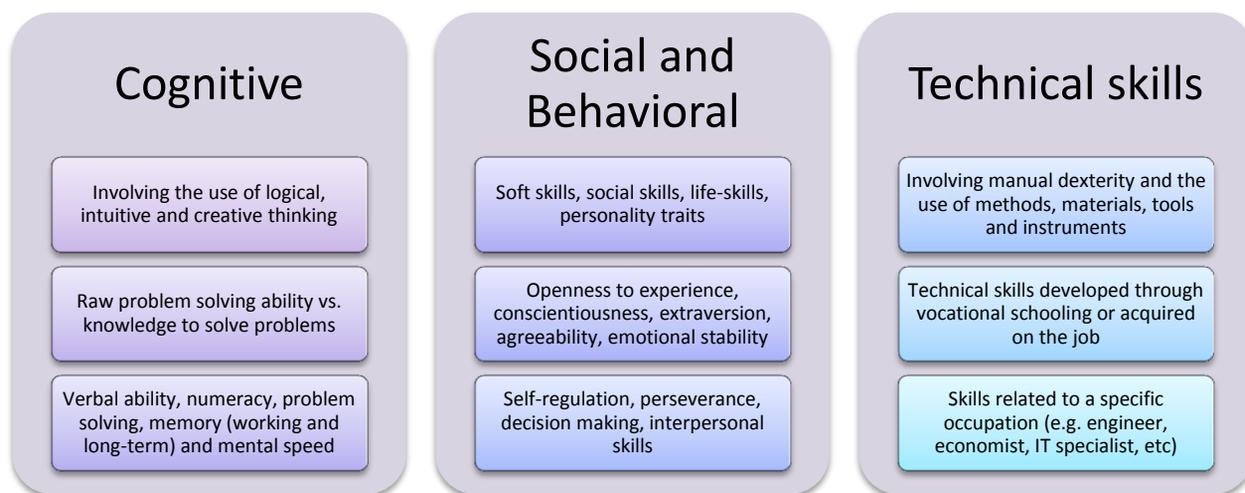


Source: World Bank Staff Calculating using STEP Household Data, n=3316. The data displayed reflect responses to the question "Has a lack of reading or writing skills in Vietnamese ever kept you from getting a job, a promotion, a pay rise, or held you back from advancing your career?" A similar question was repeated for business/own activity.

### What do we mean by skills?

**This report focuses on three domains of skills: cognitive skills, social and behavioral skills, and technical skills.** These domains cover the job specific skills that are directly applicable to specific occupations, the various personality traits that are crucial to labor market outcomes and also the cognitive ability generally believed to underpin human capital.<sup>viii</sup> Figure 35 puts forward the definition of skills used in this report. The ‘In Depth’ section at the end of this chapter explains in greater depth what these skill domains capture and how they are measured in the STEP surveys.

**Figure 35: Skills Measured in the STEP survey**

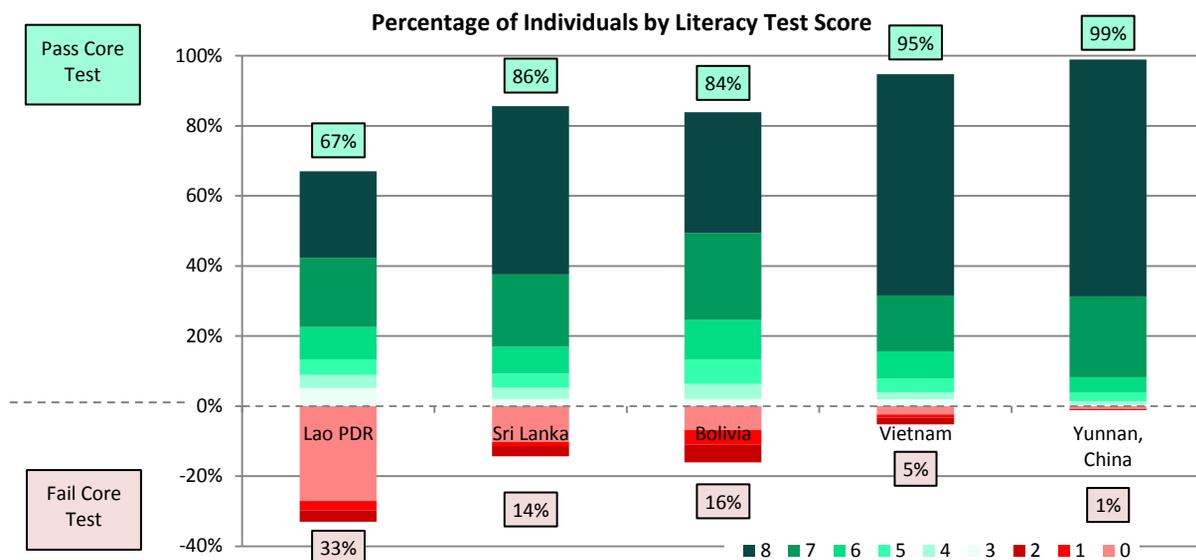


Source: Pierre, Sanchez Puerta, and Valerio (Forthcoming).

**Basic cognitive skills are separated from more advanced cognitive skills.** Cognitive skills include the use of logical, intuitive and critical thinking as well as problem solving using acquired knowledge. They include literacy and numerical ability as basic or foundational cognitive skills, and extend to the ability to understand complex ideas, learn from experience, and analyze problems using logical processes.

**The fast expansion of education in Vietnam has meant that basic cognitive skills are widespread in urban areas.** The STEP household survey conducted in Hanoi and Ho Chi Minh City in 2012 tested the literacy skills of working age individuals (see Box 2.1). This survey revealed solid achievement by urban Vietnamese in important basic literacy ability. Figure 36 presents the percentage of individuals who passed a “core” literacy test in the five countries in which the STEP household survey was administered – Lao PDR, Sri Lanka, Bolivia, Yunnan province of China and Vietnam. The core literacy test assesses basic literacy skills and sorts the most literate from those with lower levels of literacy skills.<sup>ix,x</sup> Vietnam came second to Yunnan/China in the share of respondents who passed the literacy test. Nearly two thirds of the sample obtained full marks on the test, suggesting strong average basic literacy skills among the Vietnamese urban population.

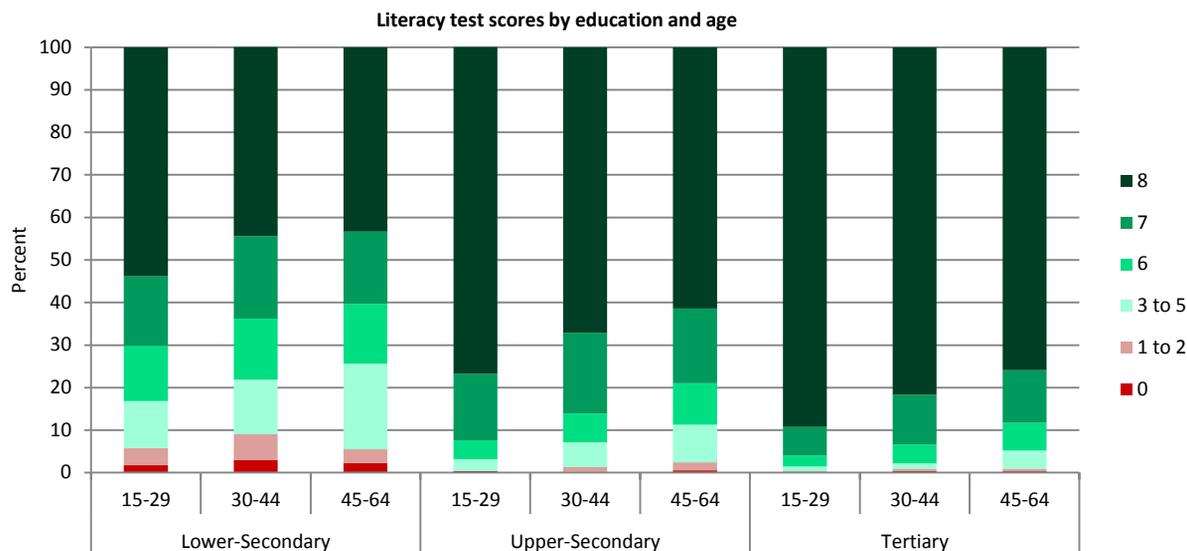
**Figure 36: Vietnamese in urban areas perform well on basic literacy skills**



Source: World Bank Staff Calculations from the STEP household survey, n=3328. All country samples are restricted to urban only for comparison reasons. The scores reflect performance of individuals on a reading literacy test; individuals who score 3 or more on the test are considered sufficiently skilled to be able to continue on to the next level of the test while those who score below 3 are considered to have failed the test of basic literacy skills. Greater information on the measurement of literacy skills is given in box 4 below.

**Younger individuals appear to have stronger basic literacy skills which may reflect improvements in the education system over time.** Figure 37 presents the achievement scores by the highest education level completed and age group in Vietnam. Younger respondents score better on the literacy tests overall, although this could be attributable to their higher levels of education. However, even after taking into account their higher education levels, younger respondents perform better than older respondents.<sup>xi</sup> Among those who have completed lower secondary education, 83 percent of 15 to 29 year-olds attain scores of 6 or higher compared to 78 percent of 30-44 year-olds and 74 percent of 45 to 64 year-olds. Among tertiary educated graduates, 90 percent of younger respondents obtain full marks compared to 80 percent of 30-44 year olds. These patterns can be seen even after excluding the 44 percent of the younger population who are still in education. All this evidence suggests that improvements in the education system over time may be translating into stronger basic literacy skills.

Figure 37: Younger and more educated individuals attained higher scores on the basic literacy test

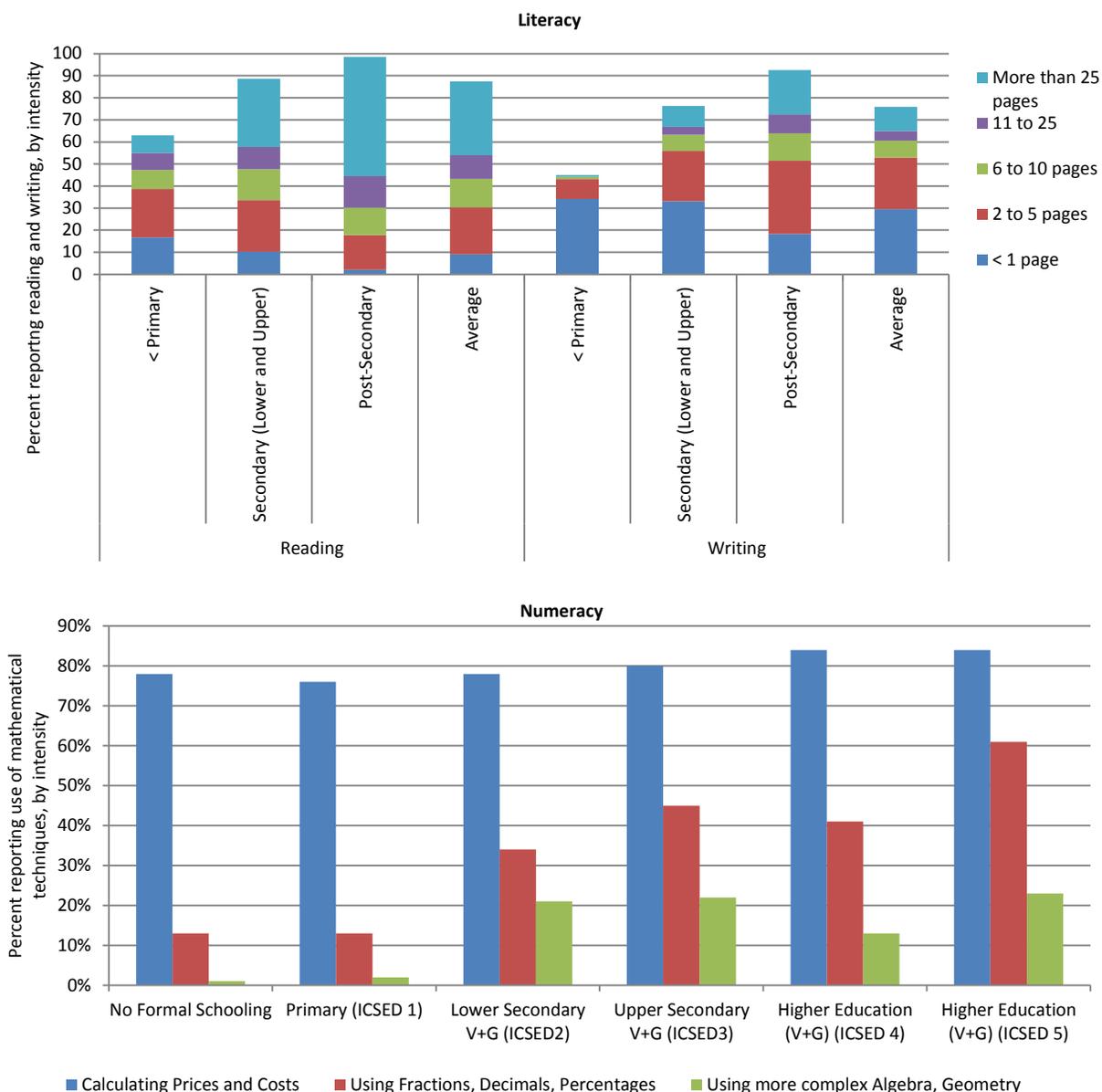


**Source:** World Bank Staff Calculations from the STEP household survey, n=3328. The scores reflect performance of individuals on a reading literacy test; individuals who score 3 or more on the test are considered sufficiently skilled to be able to continue on to the next level of the test while those who score below 3 are considered to have failed the test of basic literacy skills. Greater information on the measurement of literacy skills is given in box 4 below.

**Although basic and mid-level cognitive skills are widely used in urban Vietnam, more advanced skills are less likely to be used.**

Individuals were asked to report whether they read or write at least a few lines, and the length of document that they read or write.<sup>xii</sup> Over 80 percent of the urban working age population reports reading or writing either at home or at work (Figure 38). However, the majority of workers only make basic use of their literacy skills— three quarters of those who report that they are able to write have not written a document longer than 5 pages in the last twelve months, and half of those reading have not read anything longer than 10 pages over the same period. Similarly, basic numerical skills – likely to be used in everyday transactions – are widespread in urban Vietnam while more advanced numeracy skills are more limited. Figure 38 also shows the use of numeracy skills in urban Vietnam, where numerical tasks are split by the complexity of operations conducted. Approximately 90 percent of individuals conduct at least basic numerical operations, such as estimating weights and distances, or calculating prices or costs. Measured basic numerical skills are likely to be used in everyday transactions and are more widespread than basic literacy skills. Moving to the next level of complexity, three quarters of the population do more complicated operations such as using decimals, percentages, multiplication or division.

Figure 38: The use of literacy and numeracy skills is limited



Source: World Bank staff estimations using STEP household survey

**Social and behavioral skills capture social ability and personality traits** that have been found to be strongly linked to success in life, including doing well in school and at work. These skills are captured in the STEP household surveys using the Big-Five taxonomy of personality traits, which are viewed as high-order *proxies* of behaviors or actions that are a manifestation of personality and that are associated with a myriad of socio-emotional skills. The measures include whether individuals are open to new experiences, whether they can be considered to be conscientious, to have perseverance and to be motivated (conscientiousness), whether they are socially energetic (extraversion), whether they are agreeable towards others (agreeableness), and whether they are self-regulating, or broadly secure and comfortable in themselves (emotional stability or neuroticism).<sup>xiii</sup> These traits, and the behaviors and actions that they are associated with are described in greater detail in Table 3.

**Table 3: The Big Five personality and motivational traits**

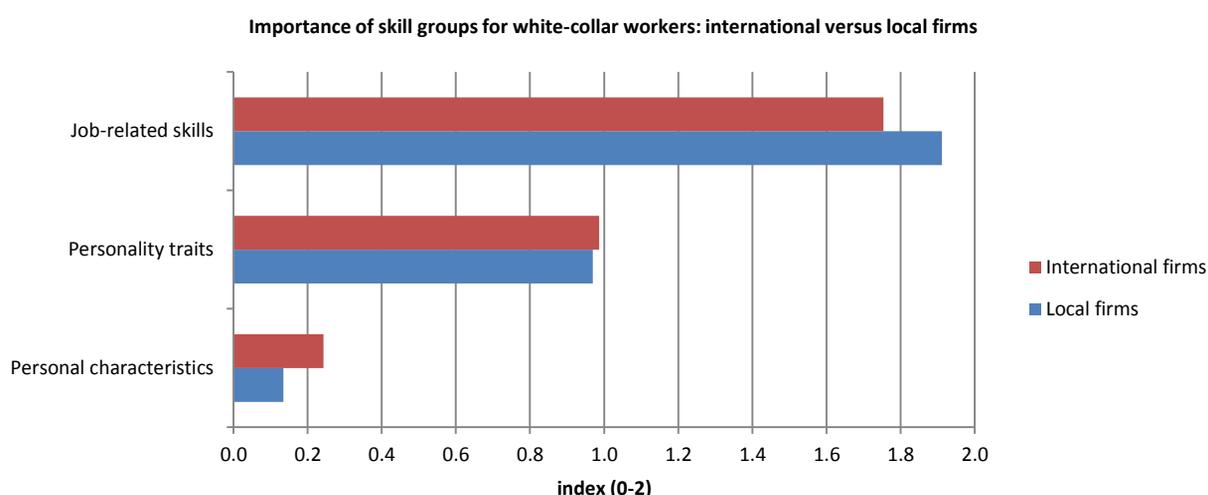
<b>Personality Trait</b>	<b>Characterization of Individual<sup>xiv</sup></b>	<b>What is it associated with?</b>
Openness to Experience	Openness to Experience is a personality dimension that characterizes someone who is intellectually curious and who tends to seek new experiences and explore novel ideas. Someone high on Openness can be described as creative, innovative, imaginative, reflective, and untraditional. Someone low on Openness could be conventional, narrow in interests, and unanalytical.	Openness is positively associated with intelligence, especially aspects of intelligence related to creativity, such as divergent thinking (McCrae, 1987).
Conscientiousness	Conscientiousness indicates an individual's degree of organization, persistence, hard work, and motivation in the pursuit of goal accomplishment. This personality dimension may be an indicator of the desire or ability to work hard (Barrick & Mount, 1991).	Conscientiousness has been the most consistent personality predictor of job performance across all types of work and occupations (Barrick, Mount, & Judge, 2001).
Emotional Stability	An individual who scores low on an emotional stability scale can be thought to be self-confident, calm, even tempered and relaxed. Individuals who score high on the emotional stability scale tend to experience a number of negative emotions including anxiety, hostility, depression, self-consciousness, impulsiveness, and vulnerability (Costa & McCrae, 1992).	Emotional stability has been linked to education and labor market outcomes, although the trait is not as robust or consistent as conscientiousness. Traits related to emotional stability (for example, the locus of control and self-esteem) predict a variety of labor market outcomes, including job search effort (Almund et al. 2011).
Extraversion	Extraversion describes the extent to which people are assertive, dominant, energetic, active, talkative, and enthusiastic (Costa & McCrae, 1992). People who score high on Extraversion tend to be cheerful, like people and large groups, and seek excitement and stimulation. People who score low on Extraversion prefer to spend more time alone and are characterized as reserved, quiet, and independent.	Traits related to extraversion have been found to be linked to wages, but that the relationship differs by occupation (Cattan, 2010, cited in Almund et al, 2011). For example, adolescent sociability has been found to increase the wages of managers, sales workers, and clerical workers but to decrease the wages of professionals and technicians.
Agreeableness	Individuals who score high on the agreeableness scale can be thought of as having cooperative values and a preference for positive interpersonal relationships. At the low end of the dimension can be characterized as manipulative, self-centered, suspicious, and ruthless (Costa & McCrae, 1992; Digman, 1990).	Agreeableness has been found to be negatively related to salary levels and career performance (McClelland and Boyatzis, 1982; Seibert and Kraimer, 2001).

**Technical skills reflect knowledge and technical know-how that is often built through in-depth training or experience.** Technical skills range from manual dexterity for using complex tools and instruments to occupation specific skills (engineering, economics, medicine, etc.). Since technical skills are often discipline or domain specific, they are harder to capture using a survey instrument aimed at the general population. The technical skills that are measured in the STEP skill survey therefore reflect specialized abilities that are relevant to perform tasks that can be found in multiple jobs.

## What skills are in demand and used in the urban labor market?

**Employers place the most emphasis on job-related skills, including technical skills and the ability to solve problems and think critically.** Employers were asked what types of skills or characteristics they considered to be most important when deciding to keep retain an employee after a probation period. Figure 39 shows the relative importance placed on job-related skills, personality traits and personal characteristics among employers at international and local firms. Job-related skills were valued most highly, but personality traits are also highly valued. In contrast, personal characteristics (such as age, sex, and appearance) have little impact on hiring decisions. The relative importance of these three broad skill groups is the same for both white and blue-collar workers, and across international and local firms.

**Figure 39: Employers value job-related skills more in hiring decisions than personality traits and personal characteristics**



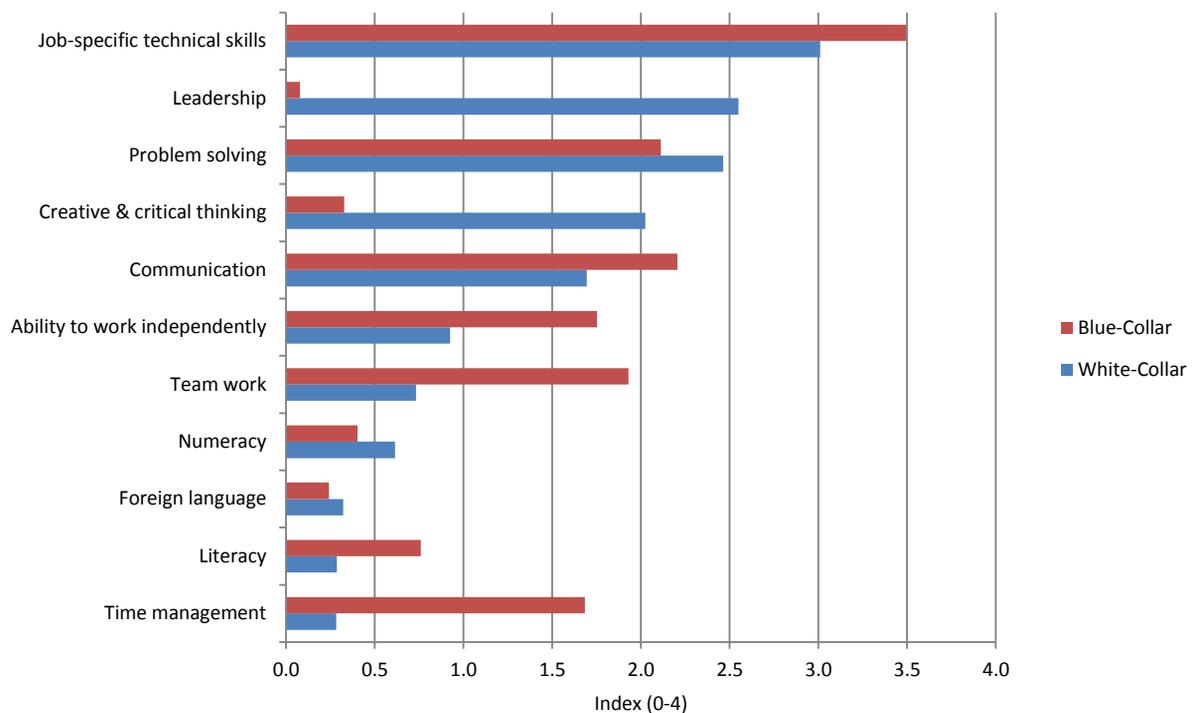
Source: World Bank staff estimations using STEP Employer Survey. Employers were asked to indicate which attributes – job-related skills, personality traits and personal characteristics – were the first and second most important when deciding which workers should be retained after a probation period. N=330, of which 149 firms have international links and 181 firms do not. Job related skills were defined to include: job-specific technical skills, being able to communicate well, displaying leadership abilities, working well in teams, being able to engage in creative and critical thinking, being able to solve problems, being able to work independently, and manage your time. Personal characteristics include age, appearance, gender, family relations and personal ties. Personality traits include whether an individual is conscientious, emotionally stable, agreeable, extravert and open to new experiences. The differences between international and local firms that are displayed are not statistically significant at a 10% level.

**Among job related skills, employers consider strong technical competencies as the most important attribute a worker can have.** Employers were asked to define which job related skills were most important in determining whether an employee on probation should be retained. Technical skills were ranked most highly by employers among both blue and white collar workers (Figure 40). International firms value job-specific technical skills more than local firms. They also attach a somewhat higher value to the ability to work independently, to whether workers are open to new experiences and to teamwork skills. Local firms value leadership and communication skills more than international firms. This may be due to a different production profile of both types of firms, or to the fact that local firms find it more difficult to attract workers with these skills, potentially because they offer lower remuneration.<sup>xv</sup>

**Employers also value employees who are able to think critically and creatively and who are able to solve problems.** These employee attributes are typically associated with having advanced cognitive skills. Being able to solve problems and think creatively and critically were highly valued attributes for

both blue- and white-collar workers – they were considered the 3<sup>rd</sup> and 4<sup>th</sup> most valuable job related skills for white-collar workers, while problem solving was ranked 3<sup>rd</sup> most important for blue-collar workers. Creative and critical thinking was however not viewed by employers as an important skill for blue-collar workers.

**Figure 40: Importance of job-related skills among white and blue-collar workers**



Source: World Bank staff estimates using the STEP Employer Survey. White-collar workers include the following worker types: managers; professionals, technicians and associated professionals. Blue-collar workers are classified as the following workers: clerical support; service; sales; skilled agriculture, craft and related trades, plant and machine operators; elementary occupations. This figure is based on the 328 and 329 firms who reported having at least one worker in the white- and blue-collar category and were willing to respond about the skills used and needed by that worker in his or her work. The differences between blue and white collar occupations are all statistically significant with the exception of job-specific technical skills and communication skills.

**Employers also value workers who display strong leadership abilities, who are able to work in teams as well as work independently, who are able to manage their time and who communicate well.**

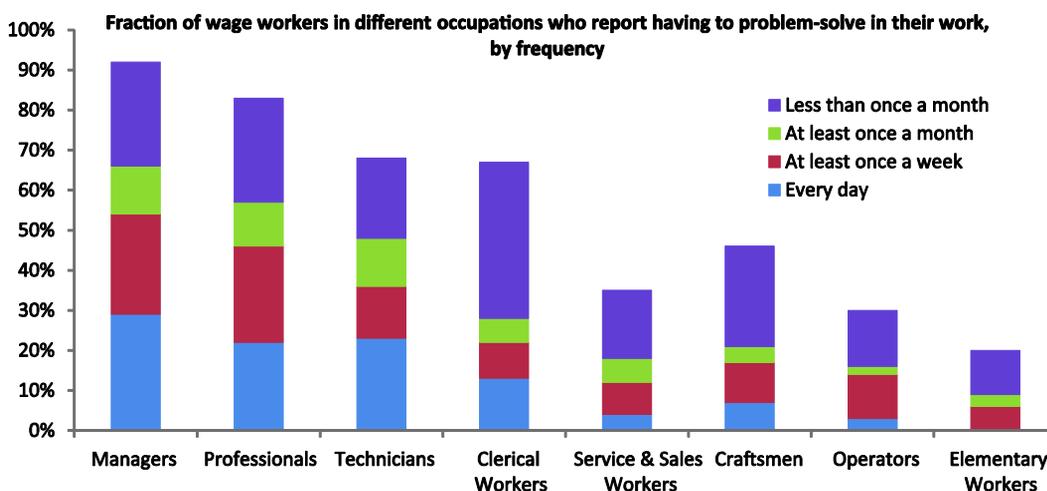
Employers valued employees who displayed leadership competencies as the second most valuable trait among white-collar workers, while being able to communicate well and work in a team were among the most valued attributes for blue-collar workers. These workplace skills draw upon workers social and behavioral abilities. For example, conscientious workers are more likely to push forward on work independently and manage their time.

**Employee reports of what they are asked to do in their jobs often mirror employer demands for certain skills. Managers, professionals and technicians are more likely to be asked to solve problems and to think in a creative and critical way than other workers.**

The STEP household survey complemented the STEP employer survey by asking workers what they do in their jobs – this allows a comparison of the skills that employers demand with the skills that are actually used by employees. Workers were asked to report how often they need to find a solution to a challenging situation at work through thinking for at least half an hour. Approximately three quarters of managers, professionals,

technicians and clerical workers reported having to solve problems as part of their work. The intensity with which these skills are used is also high – nearly one in two of these workers report having to problem solve at least once a week.

**Figure 41: Wage workers are required to be think on their feet by having to solve problems**

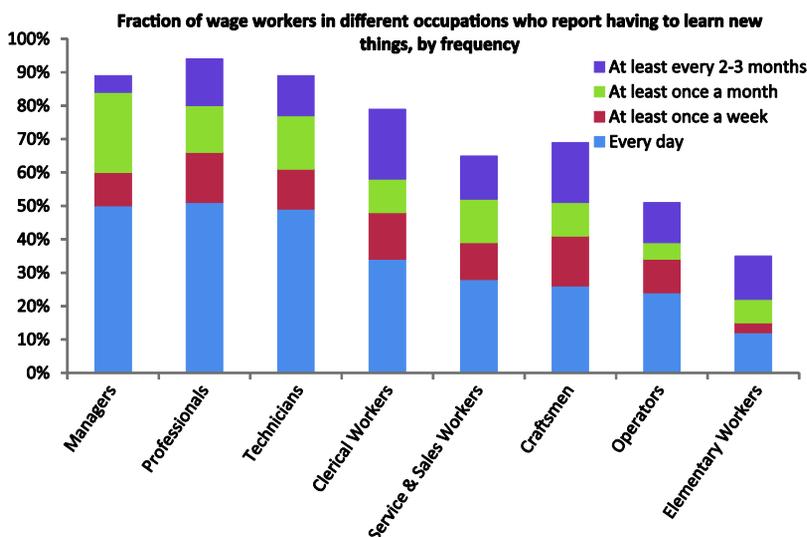


Source: World Bank STEP Employee Survey. The figure shows responses to the following question: “Some tasks are pretty easy and can be done right away or after getting a little help from others. Other tasks require more thinking to figure out how they should be done. As part of this work as [occupation], how often do you have to undertake tasks that require at least 30 minutes of thinking (examples: mechanic figuring out a car problem, budgeting for a business, teacher making a lesson plan, restaurant owner creating a new menu/dish for restaurant, dress maker designing a new dress)”. Respondents were asked to indicate how often they conducted a task of this form. The sample includes only wage employees (n=1313).

**Although employers indicate that they value problem solving skills in all workers, craftsmen, machine operators and manual workers are much less likely to report having to solve problems as part of their jobs.** Craftsman and machine operators are much less likely to report having to think about problems during their work than professional and technical workers, and also report a lower intensity of problem solving. Approximately 40 percent of craftsman and machine operators report having to solve problems in their work, although half of these workers report using these skills less than once a month. Worker reports of problem solving contrast with the importance and value placed on these skills by employers – as shown in Figure 40 above, employers place almost as much value on these skills for white-collar workers as they do for blue-collar workers. The discrepancies between these reports may reflect a shortage of problem solving skills among certain types of workers.

**Nearly all wage workers report that their job requires them to be adaptive to changes in their work environment since they are continuously learning on the job. Learning new skills requires workers to have strong core cognitive skills to build off.** Workers were asked how often their work involved learning new things (Figure 42). Nine in ten managers, professionals and technicians report continuously having to learn as part of their work, and of these over half report learning every day. The incidence of learning among craftsmen and machine operators is also high and relatively intensive – 70 percent of craftsmen report learning on the job, and 20 percent of them report having to learn new things every day. Workers who conduct manual tasks are the only category of workers for whom learning does not appear to be an important component.

Figure 42: Wage workers are required to be adaptive to change by having to learn new things

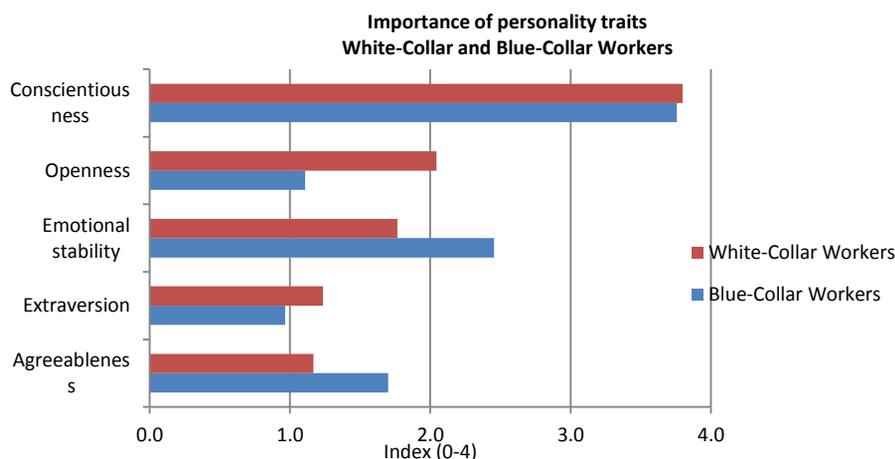


Source: World Bank STEP Employer Survey. The figure shows responses to the following question: “How often does (did) this work involve learning new things?”. Respondents were asked to indicate how often they conducted a task of this form. The sample includes only wage employees (n=1313).

**Among social and behavioral skills, employers value conscientiousness most highly for all types of workers, while openness to experience is highly valued among white collar workers.**

Conscientiousness emerges as a key employability skill in virtually all countries where the demand for skills has been studied (e.g. Macedonia, Poland, Russia, United Kingdom). It includes elements such as responsibility, self-discipline, carefulness, thoroughness, self-organization, and need for achievement (motivation). Workers who do a thorough job, are hard-working, and do things efficiently are more likely to be hired and employed than workers who lack these traits. In addition, employers deem openness to new experiences to be important traits for managers, professionals and technicians, while being emotionally stable is considered to be important for blue-collar workers (Figure 43).

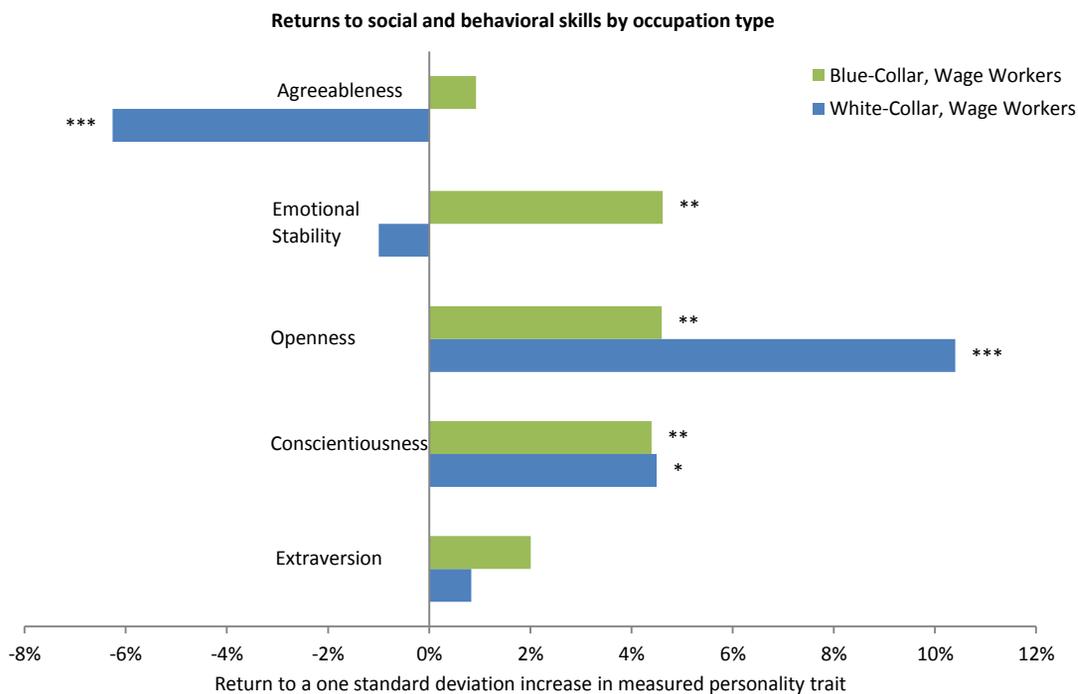
Figure 43: Conscientiousness is the most highly valued trait for all workers



Source: World Bank STEP Employer Survey. Employers were asked to indicate which was the most to fourth most important personality trait when deciding which new employees should be retained. N=330. White-collar workers refers to Managers, Professionals and Technicians, while blue-collar workers refers to workers in all other occupations, notably clerks, sales and service workers, craftsmen, machine operators and manual laborers. Differences in emotional stability, agreeableness and openness to new experiences are statistically significant at a 5% level. Among white-collar workers, conscientiousness, and openness to new experiences are statistically different from zero at a 5% level, among blue-collar workers emotional stability is statistically different from zero at a 5% level, while conscientiousness and agreeableness are statistically different from zero at a 10% level.

**The high value placed on workers who are more open to experience and conscientious is mirrored in earnings: workers with these types of skills earn more in the labor market.** However, there are substantial differences across jobs in the types of social and behavioral skills that are most valued, likely reflecting differences in the type of tasks conducted in different jobs (Figure 44). Among managers, professionals and technicians, people who display higher levels of openness and conscientiousness earn more. Meanwhile, those who are more agreeable actually earn less – this is a finding that reflects patterns in the international literature. More disagreeable people have been found in multiple contexts to have higher incomes and wages (Arias et al, 2011; Seibert and Kraimer 2001). Among pink- and blue-collar workers, social and behavioral skills appear to play a greater role in wage setting. Workers who are more open and conscientious again earn more. (Figure 44, green bars). Among these workers, we additionally find that more emotionally stable workers earn more.

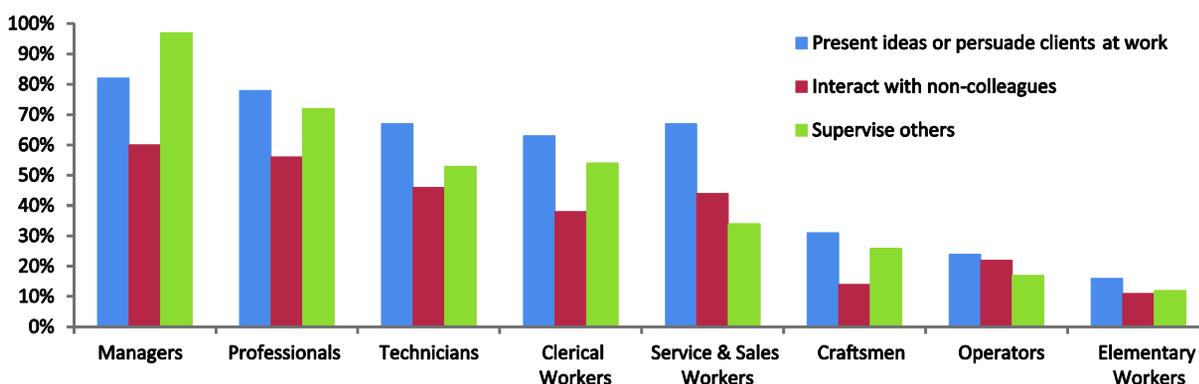
**Figure 44: Openness and conscientiousness have the highest returns of all behavioral skills**



**Source:** World Bank Staff Estimates of Returns to Monthly Incomes among white-collar (managers, professionals, technicians) and blue-collar (clerical workers, service and sales, craftsman, machine operators and elementary wage workers) wage workers (n=1244). The reported results are from a Mincerian earnings regression that controls for demographics, cognitive skills and education. Reported standard errors are jackknifed bootstrapped, and outliers are eliminated using a robust regression technique based on Cook's distance measure. \*\*\*, \*\* and \* denote statistical significance at a 1, 5 and 10 percent level respectively.

**Wage workers need strong social and behavioral skills since they are often required to persuade others of their ideas, work with and supervise others.** Workers in multiple occupations report needing to be persuasive through providing information to clients or having to convince colleagues of their point of view (Figure 45). These attributes are most needed in occupations which require direct contact with workers outside of their enterprises – 70 percent of sales and service sector workers report that they are regularly have to sell ideas, inform others or persuade others of their opinion. Tasks that require interaction with others and persuasion require workers with strong social and behavioral skills such as self-esteem and agreeableness – these workers will be required to pick up on social cues, to change their strategies according to the personality of the person that they are interacting with.

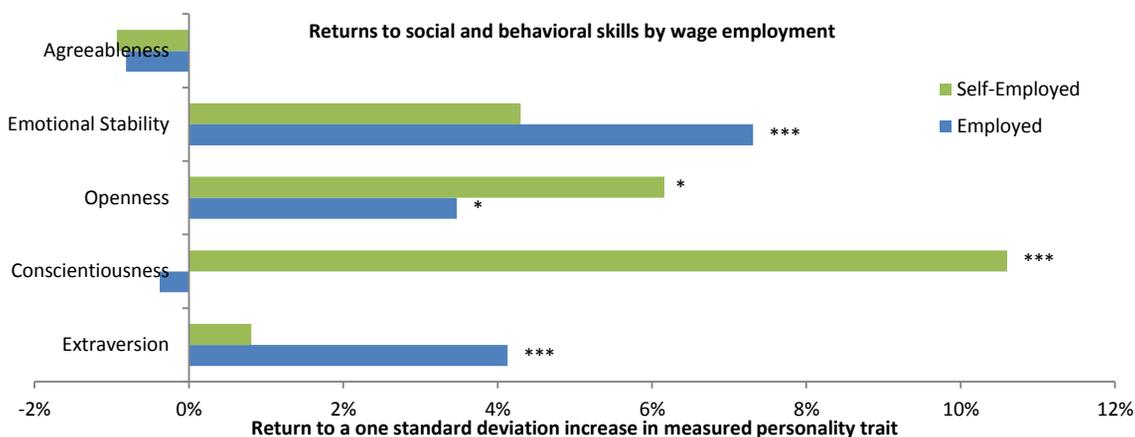
**Figure 45: Percentage of wage worker who report having to interact with others, present ideas or interact with others as a normal part of their work**



Source: World Bank STEP Employer Survey. The figure shows responses to the following questions: (i) “As part of this work, do you (did you) have to make formal presentations to clients or colleagues to provide information or persuade them of your point of view?”; (ii) “As a normal part of this work do you direct and check the work of other workers (supervise)?” (iii) “As part of this work, do you (did you) have any contact with people other than co-workers, for example with customers, clients, students, or the public?” The sample includes only wage employees (n=1313).

**Skills are not a formal sector phenomenon: strong social skills are most highly valued in the informal sector.** The earnings premium to being more open to new experiences and conscientious is higher for self-employed people than for wage workers.<sup>xvi</sup> This may reflect the observation that more educated workers cluster into wage employment, and that openness to experience and conscientiousness are both highly associated with education. In studies in other countries, entrepreneurs have been found to be more conscientious and open to experience than managers (Zhao and Seibert, 2006). There is however no clear evidence in Vietnam that the average self-employed person is more open or conscientious than the average wage worker or manager.

**Figure 46: Openness and conscientiousness are rewarded in self-employment**



**Source:** World Bank Staff Estimates of monthly income returns among wage and self-employed workers (n=2058). The reported results are from a Mincerian earnings regression that controls for demographics, cognitive skills and education. Reported standard errors are jackknifed bootstrapped, and outliers are eliminated using a robust regression technique based on Cook's distance measure. \*\*\*, \*\* and \* denote statistical significance at a 1, 5 and 10 percent level respectively.

**One reason why openness and conscientiousness are more highly rewarded in self-employment is because the tasks conducted by entrepreneurs – working with clients, needing to be self-motivated – are more intensive in the use of these skills.** Entrepreneurs are more likely to report having to do interactive tasks, such as talk to and assist individuals outside of their business. In addition, they are

more likely to have to supervise others or make formal presentations. Their work is less likely to involve technology such as computers, involves a higher level of freedom and more likely to be non-routine and manual in nature, implying that their work involves readjustment. Although self-employed work is less analytical than the work reported by wage workers, many self-employed workers report needing to think for at least 30 minutes on a regular basis.

## Summary

**The education system is producing strong basic cognitive skills, an important asset that enhances Vietnam’s competitiveness in the global economy. There are however signals that the education system is not building all the skills needed by employers and the workforce.** The STEP household survey data suggests that the education system is producing workers with strong basic cognitive skills. Higher-level cognitive skills are highly valued by employers but are less likely to be used in the workforce. Employers are concerned that the education system is not provided all the skills that they need of their workers, and these concerns are mirrored among workers. The good news for Vietnam is that it will be investing in the missing skills from a strong base – the urban workforce has strong basic literacy and numeracy skills, a necessary requirement for building more advanced cognitive and job-relevant technical skills.

**The evidence from the STEP surveys suggests that multiple skills are valued in the current urban labor market. The diversity of skills used in the labor market has implications for the education system,** which is expected by employers to develop the whole range of employability skills in addition to job-specific technical skills. The need to have strong cognitive, technical and social and behavioral skills is not a “formal” sector phenomenon or limited to certain professional or technical occupations. Cognitive, behavioral and technical skills are required in all types of wage employment, and are strongly predictive of labor market outcomes and enterprise success. The informal and enterprise sector appears to use a different but overlapping skill set to the skills used in wage employment. In rural areas, over 30 percent of households engage in self-employment activities in the non-farm sector. Therefore recognizing that skills go beyond the formal sector workforce is likely to raise enterprise success.

**As its economy continues to grow and transition into higher value-added sectors, Vietnam needs to focus its attention on building the advanced cognitive, technical and social and behavioral skills that are already being used in today’s urban labor market and will be increasingly used in the future.** In the current urban labor market, workers are already being asked to think on their feet, to solve problems, to learn on the job and to interact with others on a regular basis. Demand for workers who are able to perform these tasks is likely to rise and workers will be asked to be responsive to shifting needs and labor markets. Consequently, the skills shortage that is reported today is likely to grow as firms ask more of their workers and the transition towards modern jobs continues. In order to meet the current and future demands of employers, the focus needs to shift to laying a foundation for strong skills. The next chapter will examine when skills are formed, and put forward a framework to understand how disconnects in the current education and training system may result in an under-investment in the skills needed for a modern industrialized Vietnam.

## In depth: What are cognitive, behavioral and technical skills and how are they measured?

The STEP Household data focuses on three domains of skills: cognitive, social and behavioral, and technical skills. Cognitive skills can be defined as “the ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by taking thought” (Neisser, Boodoo, Bouchard). The literature on intelligence has separated cognitive skills into a general intelligence factor  $g$  and multiple second-order factors, which display different paths over an individual’s life-cycle (Carroll 1993). Two seminal and widely discussed factors are fluid intelligence and crystallized intelligence. Fluid intelligence reflects the capacity to perceive and act upon complex problems under novel conditions, independent of acquired knowledge (Cattell, 1971). In contrast, crystallized intelligence reflects learned skills and knowledge, and is therefore dependent on education and the formation and learning of knowledge (Horn and Cattell, 1967).

Cognitive skills are typically measured using achievement or assessment tests that capture to different degrees fluid and crystallized intelligence. Broadly speaking, aptitude tests are designed to measure differences in the rates at which individuals learn (fluid intelligence) whereas achievement tests are designed to measure acquired knowledge (crystallized intelligence). The relative weight of fluid versus crystallized intelligence captured by a test depends on the amount of prior knowledge or experience that is required to perform well on the test.

In the StEP household survey, cognitive skills are measured in two ways. First, respondents are asked to report whether and how often they read, write and do numerical tasks both at work and at home. The questions were designed to capture both overall use of reading, writing and numeracy skills as well as the intensity of their use. These measures are likely to capture a combination of the person’s actual ability to conduct tasks involving these skills, and their motivation/opportunity to do so. In this case, they may represent a lower-bound estimate of these skills in the population. For example, an individual may be able to write long documents but have no recourse to do so in his or her work or home life. On the other hand, individuals may claim to read on a regular basis but may actually not be able to do so; therefore this miscategorization would result in over-estimates of the skill stock.

### Self-reported reading

“Do you read anything [*in daily life/at this work*], including very short notes or instructions that are only a few sentences long?”

“Among the things that you normally read [*in daily life/at this work*], what is the size of the longest document that you read?”

### Self-reported writing

“Do you ever have to write anything (else) [*in daily life/at work*], including very short notes, lists, or instructions that are only a few sentences long?”

“Thinking about all the things you normally write (wrote) [*in daily life/at work*], what is the longest document that you write (wrote)?”

### Self-reported numeracy

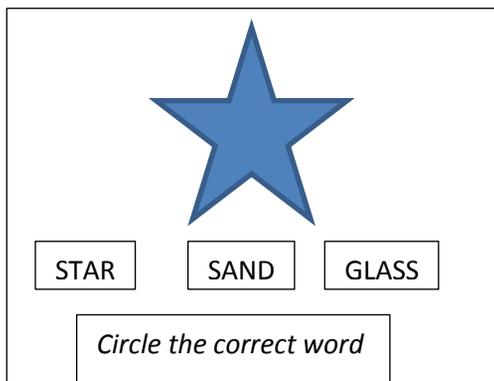
“[*As a normal part of this work /in daily life*], do you do any of the following...?”

A second measure of cognitive ability captures an individual’s literacy by testing their reading competency. The STEP literacy test is linked to and draws from other large-scale international surveys, which has included the International Adult Literacy Survey (IALS), Adult Literacy and Life Skills Survey (ALL), and the Program for the International Assessment of Adult Competencies (PIAAC). STEP is based on the same conception of literacy used in other large-scale assessments, notably “understanding, evaluating, using and engaging with written texts to participate in society, to achieve one’s goals, and to develop one’s knowledge and potential” (PIAAC Literacy Framework).

The literacy items cover a range of areas, notably:

- **Material types**, focusing on non-school-based materials in adult contexts (Example 1);
- **Task types**, including tasks that require respondents to access and identify information (in both text-based and non-prose materials such as tables, graphs and forms), to integrate and interpret information, and to evaluate information by assessing the relevance, credibility, or appropriateness of the material for a particular task (Example 2); and
- **Difficulty**, with tasks ranging from locating a single piece of information in a very short advertisement to summarizing reasons for using generic drugs as presented in a newspaper article. Tasks are reported along a scale divided into 5 levels, with Level 1 characterized by the least demanding tasks and Level 5 the most demanding.

**Example 1**



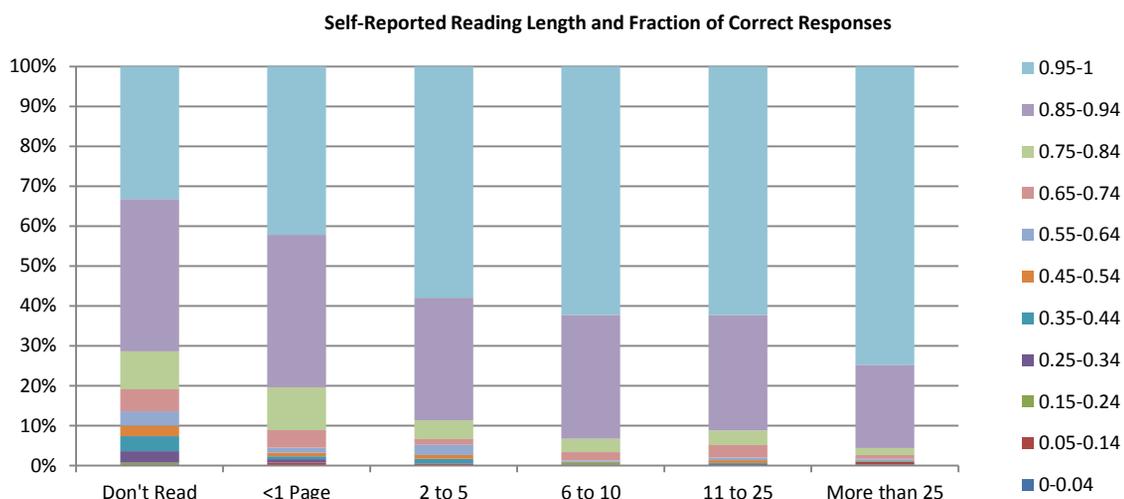
**Example 2**

*Does the following sentence make sense? THE MAN WAS TOO TIRED TO BRUSH HIS PLANT SO HE WENT STRAIGHT TO SLEEP.*

*Circle the correct word: IT STARTED RAINING, SO I PUT UP MY UMBRELLA/MUSHROOM*

The self-reported reading, writing and numeracy questions capture a different concept of cognitive skills than the literacy test. The literacy test captures an objective assessment of an individual’s literacy that can be compared to the literacy of others in the survey. In comparison, the self-reported questions capture the *use* of reading and writing skills; since these measures are self-reported, they may well differ from an individual’s actual ability to read or write. Figure 47 below displays the fraction of correct responses in the literacy assessment by self-reported reading category. The average number of correct responses increases as self-reported reading intensity rises – among those who read more than 25 pages, 75 percent got over 95 percent of the questions on sections A and B of the reading assessment correct compared to approximately 40 percent of those who read less than a page. However, nearly 33 percent of those who do not read anything on a regular basis also scored in the highest category. It is therefore clear that, although self-reported skills are related to reading ability as captured in the literacy test, they do not fully capture a person’s actual skills.

**Figure 47: Self-reported literacy is highly correlated with, but does not fully capture, a person’s actual literacy abilities.**



**Source:** World Bank Staff Calculations from the STEP household survey. The literacy scores reflect performance of individuals on a reading literacy test; while the self-reported reading length reflects how much the person reports reading.

Technical skills reflect learned knowledge in particular domains, and are therefore more likely to reflect crystallized intelligence than fluid intelligence. As such, technical skills can be strengthened later in life, but are likely to be most responsive to investment earlier in life. Since technical skills are often discipline specific, they are harder to capture using a survey instrument aimed at the general population. The technical skills that are measured in the STEP skill survey reflect specialized types of skills that are relevant to perform tasks that are specific to multiple jobs.

Behavioral, or non-cognitive, skills refer to academically or occupationally relevant skills and traits that are not directly related to intelligence but are otherwise associated with personality or motivational traits. These skills include self-regulation, perseverance, motivation and effort (Borghans et al. 2008). The measures used to capture behavioral attributes are less well established than those used to capture cognitive skills, a reflection in part that there is less consensus regarding the structure and evolution of personality.<sup>xvii</sup> The most common and widely accepted taxonomy for capturing personality traits is the Big Five. The Big Five capture Conscientiousness, Openness to Experience, Extraversion, Agreeableness and Emotional Stability, within each of these five factors lie lower order facets (John and Srivastava 1999). This taxonomy has been found to be replicable across cultures and can capture the evolution of personality over the life course (John and Srivastava 1999).

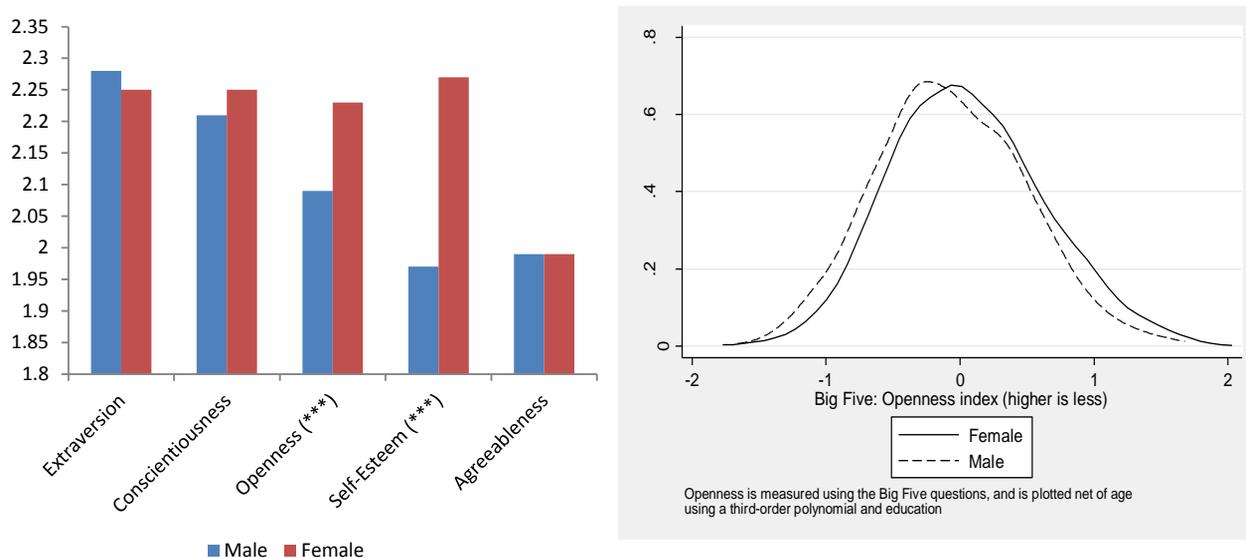


## In depth: Gender and skills in Vietnam

There are few differences between men and women in terms of their measured cognitive skills. Men and women performed equally well on the literacy test suggesting that there are no gender gaps in basic literacy skills in Vietnam. However, women are slightly less likely to report reading or writing, and to do so in a lower intensity. The differences between men and women are substantially reduced once education is considered, suggesting that these differences are likely to be reflect gender gaps in education. Gender differences in cognitive skills are smaller for the population under 40, for whom gender gaps in educational investment are less marked. The exception to this, however, is the fraction reporting conducting complex numerical tasks, which is higher for men than for women even among the population under the age of 40.

Several gender differences can be seen in social and behavioral skills, mirroring patterns seen internationally. Women in the sample are less risk averse, are less open to new experiences and have lower levels of self-esteem but similar levels of other social and behavioral traits, such as extraversion, agreeableness and grit (Figure 48).<sup>xviii</sup> Studies in OECD countries have found that female students have higher levels of social and behavioral skills, which has contributed to women performing relatively well at school (Jacob, 2002; Cornwell et al 2013). However, there is little evidence of this in urban Vietnam – no differences in social and behavioral skills can be seen between male and female students at upper-secondary or tertiary level.

**Figure 48: Gender differences in social and behavioral skills and openness to experience, after accounting for education and age**

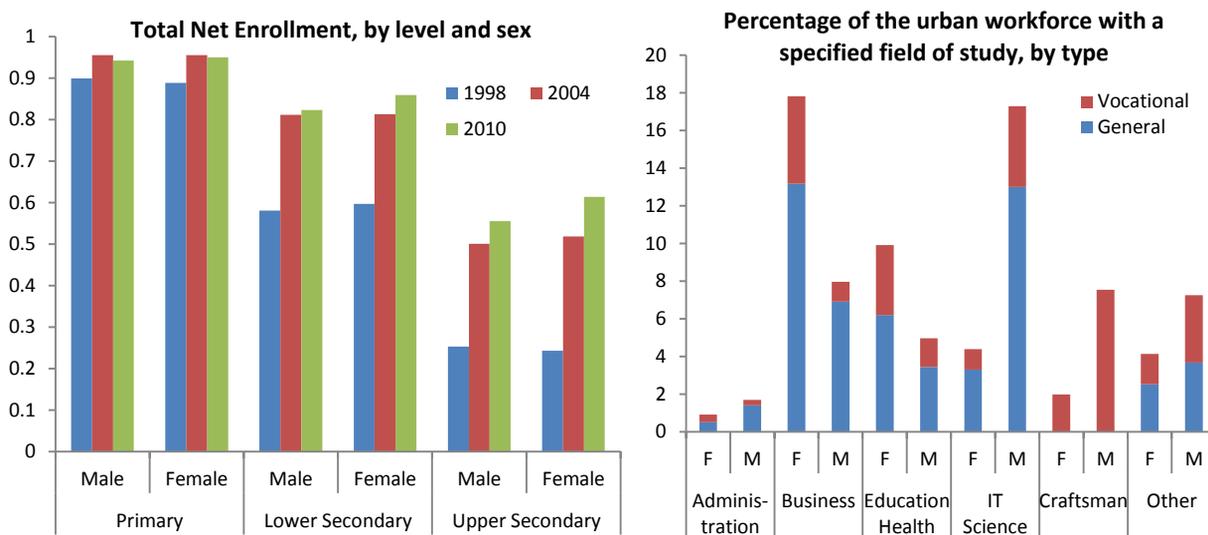


Source: World Bank STEP Household Survey, n=3405. See Box 3 for more information on the measurement of technical skills.

Gender gaps in education access at a primary, lower-secondary and upper-secondary level appear to be reversing over time. Girls are slightly more likely than boys to be enrolled in lower- and upper-secondary school (Figure 43). The growth in women’s enrollment at a tertiary level has been remarkable and substantially higher than men’s enrollment growth - women’s enrollment has nearly tripled over time and women’s gross enrollment has overtaken that of men (Figure 71). There are substantial differences in the education profile of men and women at a post-secondary level. Among the men and women who continue to higher education, there are substantial gender differences in their chosen fields of study

(Figure 43). Women are substantially more likely than men to study business and education, and are less likely to be studying technical fields such as IT, engineering, science and craftsmanship. These gender differences in the choice of field of study are also seen among current students – 68% of urban women engaged in post-secondary education reports studying business, compared to approximately 30% of men. In comparison, 45% of men are engaged in studies in IT, science or craftsmanship, compared to only 7% of women.

**Figure 49: Small gender gaps in enrollment have opened up at a lower- and upper-secondary level, and there are substantial differences across men and women in their choice of fields of study.**



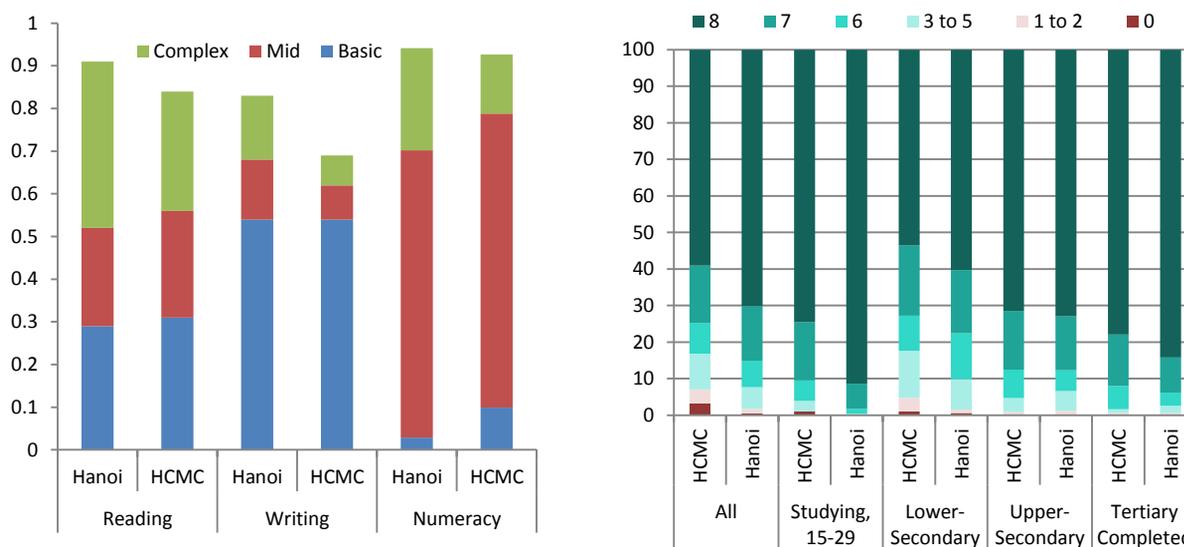
Source: Panel A: World Bank Staff estimates using the Vietnam Household Living Standards Survey. Panel B: World Bank Staff Estimates using STEP household data, n=3405 of which 1493 have studied a specified field of study at upper-secondary level or above. Of the 1493, 683 are male and 810 are female. The higher number of females does not reflect a greater propensity for females to have studied a specific field of study, but is instead reflective of a greater number of female respondents in the STEP survey (60%).

Although there is little evidence of gender differences in cognitive skills in the workforce, there are substantial differences in the types of work that men and women do in urban Vietnam and the payment that they receive for the work that they do. First, women are less likely than men to be working in the labor market – they are more likely to be inactive than men, but no more likely to be unemployed. Once in the labor market, women are less likely to be working for wages and are slightly, but not statistically significantly, more likely to be self-employed. Among those men and women conducting wage work, women earn substantially less per month than men in both wage and self-employment. Differences in monthly earnings are primarily attributable to lower hourly wages/earnings since, on average, there are no marked gender differences in hours worked. The majority of the gender difference in wages is attributable to gender differences in the returns to education, experience and occupational premium.

## In depth: Comparing skills in Ho Chi Minh City and Hanoi

The STEP household data suggest that cognitive skills are slightly lower in Ho Chi Minh City (HCMC) than in Hanoi. Both measures of cognitive skills – self-reported and the literacy test – are slightly lower in Ho Chi Minh City than in Hanoi. The fraction of the population conducting any tasks that involve reading, writing or numerical abilities is lower in HCMC than in Hanoi, although the differences are not statistically significant at the 10 percent level for numeracy skills. There are differences between the two cities in the intensity of skills used as well: complex skills usage is more prevalent in Hanoi than in Ho Chi Minh city, and these differences are statistically significant across all three skill categories. A similar pattern emerges from the scores on the literacy test. The fraction of the population attaining full marks is lower in Ho Chi Minh city overall, and in particular among students aged 15 to 29. To ensure that these differences are not just driven by differences between the two cities in their education levels, we examine whether there are differences in test scores among individuals who have completed the same level of education. We find statistically significant differences in the fraction obtaining full marks among those who have completed lower secondary or tertiary education, although no difference is found for those with upper secondary education.

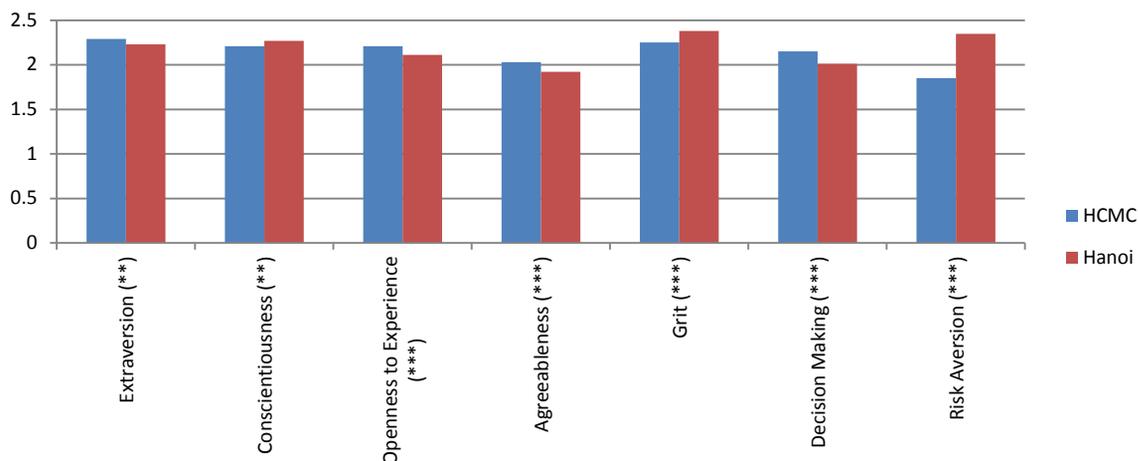
Figure 50: Cognitive skills Hanoi versus HCMC



**Source:** World Bank Staff Estimates using STEP household data, n=3405. (\*\*\*) , (\*\*) and (\*) denote statistical significant difference between Hanoi and HCMC at a 1%, 5% and 10% level respectively (Panel A). World Bank Staff Estimates using STEP household data, n=3328 (Panel B). See Box 3 for more information on the measurement of technical skills.

Hanoi and HCMC also differ on a number of social and behavioral skill scales. For example, residents of Hanoi tend to score lower on the agreeableness (reversed in figure), openness to experience and extraversion scales (Figure 51). Hanoi residents are more risk averse than residents of HCMC, less conscientious and display lower levels of grit, which captures perseverance for long terms goals. Higher levels of grit have been found to be positively associated with labor market outcomes and educational performance (Duckworth et al, 2007).

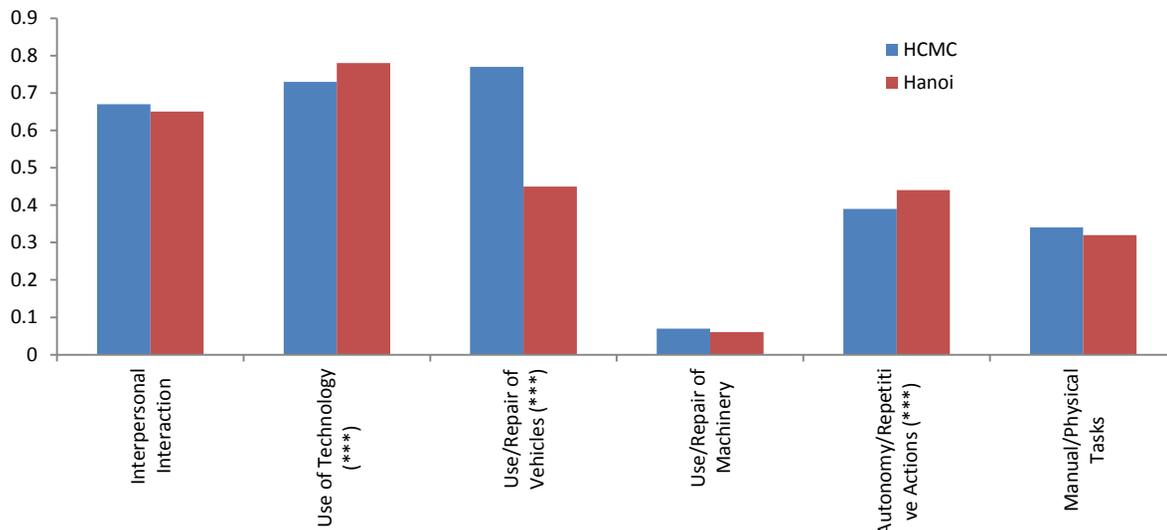
**Figure 51: Social and Behavioral skills Hanoi versus HCMC**



Source: World Bank Staff Estimates using STEP household data, n=3405. (\*\*\*) , (\*\*) and (\*) denote statistical significant difference between Hanoi and HCMC at a 1%, 5% and 10% level respectively.

Finally, the use of technology is higher in Hanoi than in HCMC. For example, 78 percent of residents in Hanoi reported using technology compared to only 73 percent residents in HCMC (Figure 52). HCMC residents were also more likely to be in repetitive jobs and more likely to be operating or repairing vehicles. No statistically significant difference in interpersonal interaction, use or repair of machinery, or manual and physical tasks were found.

**Figure 52: Technical skills Hanoi versus HCMC**



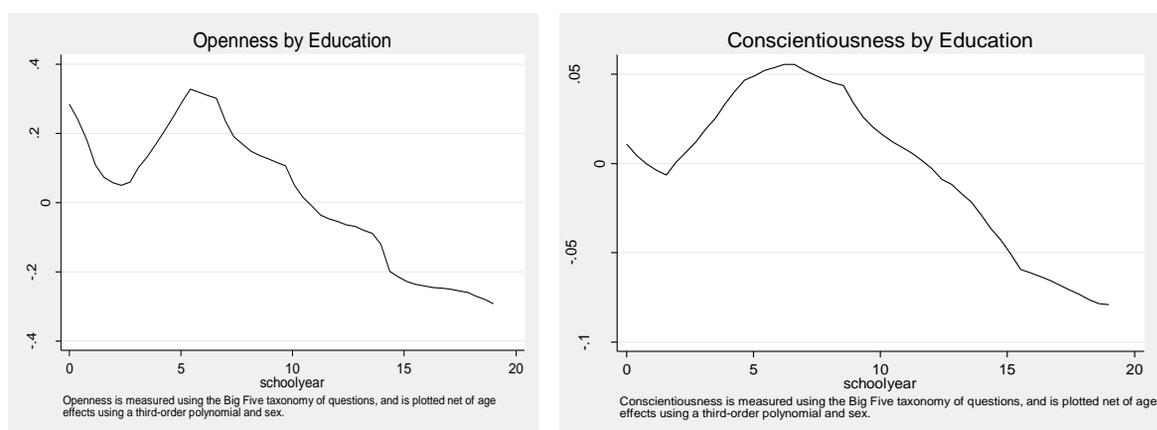
Source: World Bank STEP Household Survey, n=3405.

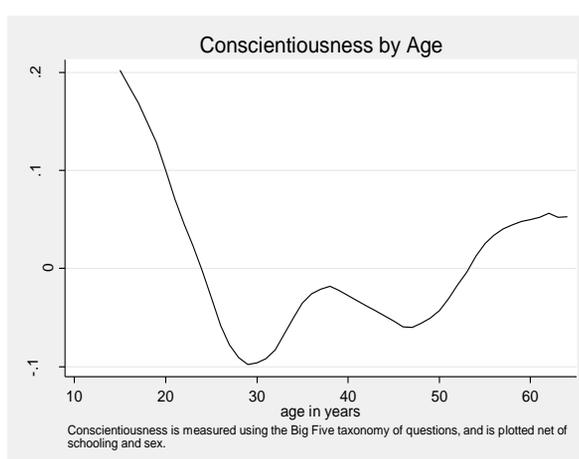
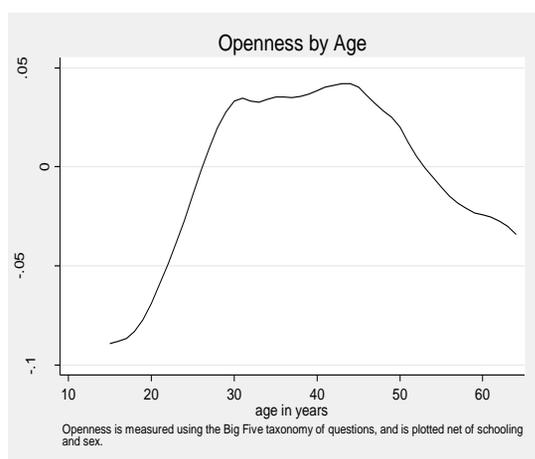
## In depth: Social and behavioral skills in Vietnam

Social and behavioral skills are linked to good educational and labor market outcomes. Personality traits such as self-esteem, self-control, emotional stability, and other social and behavioral characteristics have been shown to be linked to labor market outcomes including earnings, type of employment, and experience (Urzua 2008; Heckman et al. 2006; Nyhus and Pons 2005; Salgado 1997; Mueller and Plug 2006; Duckworth 2007). Non-cognitive skills, such as self-control and grit, have been linked to better performance in school as well as a number of other consequential life outcomes. For example, self-control at age 10 has been found to be correlated income, savings behavior, financial security, occupational prestige, health and other outcomes later in life among 1000 students tracked in New Zealand (Moffitt et al. 2011). Self-discipline among a population of adolescents was found to be as statistically significant a predictor of correlates of academic success and diligence, such as final grades achieved and the number of hours spent doing homework (Duckworth and Seligman, 2005). Some studies suggest that social and behavioral skills are actually more important than cognitive skills for determining labor market outcomes (Goff and Ackerman 1992; Bowles et al. 2001; Segal 2007).

Social and behavioral skills, such as conscientiousness and openness, vary with education. Reading, writing and numerical skills capture only one element of what it takes for individuals to be successful at school and in the labor force. Figure 53 shows differences in openness to experience by age and across two different education levels. The first panel shows openness to experience and conscientiousness for individuals who have completed primary and university level education, after taking into account age and sex. Individuals educated at a higher level of education are more open to new experiences and more conscientious. The lowest levels of both openness and conscientiousness are found among those who have completed only primary school (those who have 6 years of education). Among those who have completed primary school and below, both conscientiousness and openness to experience decline systematically with education. These patterns resemble those seen in other countries, where higher educated individuals display higher levels of grit, openness and conscientiousness but lower levels of extraversion and agreeableness.

Figure 53: Openness to Experience by education level and age and Conscientiousness by education level and age





Personality traits evolve with age in Vietnam, mirroring patterns found across the world although with notable differences. Personality traits respond to changes in a person’s environment but also evolve with age due to biological processes. For example, attitudes towards risk have commonly been found to be highest among adolescents and fall in the early 20s (Paulson et al 2012; Speer 2000). This observation has been linked to development changes in the prefrontal cortex and limbic regions of the brain among adolescents, which include an apparent shift in the balance between mesocortical and mesolimbic dopamine systems (Spear, 2000). Older people in other countries have been found to be more socially dominant, conscientious, and emotionally stable (Roberts, Walton and Viechtbauer, 2006), while openness to experience rises early in life and falls with old age. The Vietnamese data corroborate these patterns for social dominance, conscientiousness and emotional stability but suggest that openness to experience is lowest for middle-aged individuals, and higher for teenagers and older people. Unlike in the US, individuals appear to become less risk averse, less socially dominant and less emotionally stable after age 55.

## Chapter 3: Skills formation and the importance of the early years

**The skills of Vietnam’s future workforce are being built now – before and after birth and in kindergartens, schools, in higher education and on the job. To make the most of the resources devoted to skills development, Vietnam should align its skills policy with the critical junctures at which skills are built.** The most sensitive moments for skill development differ by type of skills, with cognitive and behavioral skills formed earlier in life and technical skills later. Investing early can have a multiplier effect, since new skills build off previous ones. For example a child who learns how to read fluently by second grade will be better prepared to learn mathematics during third grade than a child who is unable to read fluently. Since the early years are the most sensitive moments for laying the foundations of cognitive skills, they are also the moment when children from disadvantaged background start to irrevocably fall behind.

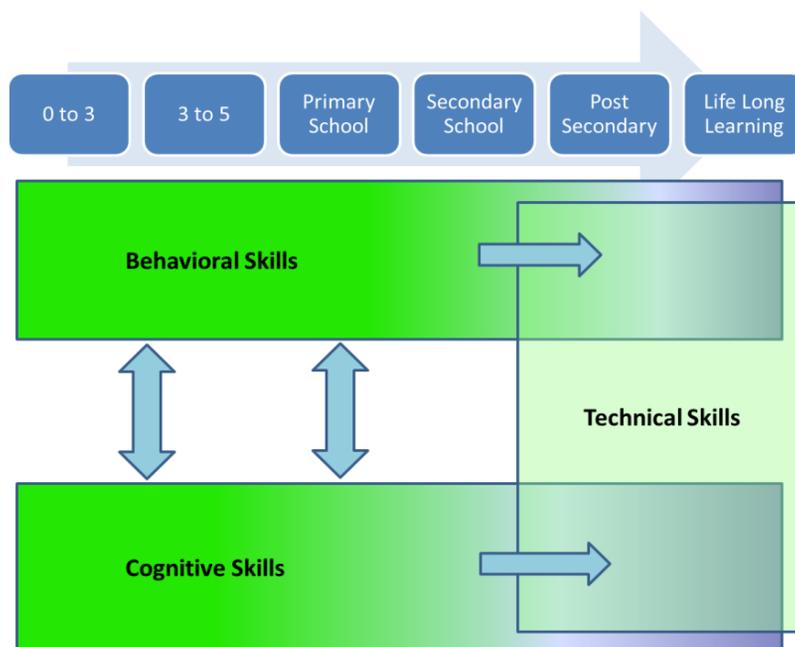
**The early childhood period is critical for the development of strong cognitive skills. Creating the right conditions for early childhood development is more effective and less costly than trying to rectify problems at a later age.** This suggests that this important early period marks the first step of skills development, particularly for closing the gaps between children from poorer and better-off households. In Vietnam, there are still policy gaps in early childhood development. Almost a quarter of children below the age of 5 are stunted as a result from inadequate feeding practices in early age, and stunting severely negatively impacts cognitive development. While Vietnam is successfully expanding access to full-day preschool for children aged 5, more attention is necessary towards interventions to help parents make better choices for their youngest children, especially disadvantaged and poor parents.

### What do we know about the formation of cognitive, social and technical skills?

**The skills that a Vietnamese worker brings to the labor market reflect investments made throughout their lifetime – from the stimulation and nutrition that they received as a baby to on-the-job learning as an adult.** For all people, adult human capital, such as workforce skills and cooperative behavior, builds on capacities that are developed early in childhood and that continue to be built through training and learning by doing. The skills of younger workers entering the labor market are the consequence of decisions made throughout their childhood and adolescent years, including their home and school environments. The skills of older and more experienced workers additionally reflect knowledge and know-how acquired through learning by doing and training in their workplaces.

**There are critical and sensitive moments when a skill is the most responsive to investment, and when skills can be most effectively and efficiently formed.** The foundations of cognitive and behavioral skills are set early on. Since these foundations are the platform upon which later skills are built, a skills strategy must be built up from the early investments made during early childhood. Figure 54 summarizes the different points in childhood and early adulthood during which cognitive, behavioral and technical skills may be formed. Four note-worthy features of skill formation are summarized in this figure are explored in greater depth in this chapter.

Figure 54: The process of skill formation – very stylized



Source: Authors’ illustration based on international evidence from a range of disciplines studying the development of abilities, including psychology, economics, and neuroscience. An excellent overview of this literature can be found in Shonkoff and Philipps (2000), Naudeau et al. (2011), Almlund et al. (2011), Cunha, Heckman, Schennach (2010) and Cunha and Heckman (2007). It should be noted that the research underlying this figure is fast moving, complex and includes many questions that remain to be solved. As such, this schematic portrays one model for understanding the formation of skills, but this model may be subject to evolution as the research continues to expand.

**First, there are sensitive and critical periods for building skills**, and it is more efficient and effective to build skills at these sensitive and critical moments than to address skills deficits at a later age. In the figure, the most sensitive moments for skill acquisition are depicted in bright green. Periods during which the skills are less sensitive to investment are indicated in light green and periods where sensitivity is most limited are indicated in blue. Cognitive skills are more intensively formed in the very early years of a child’s life. Behavioral skills begin to be formed in the early years and continue to evolve throughout adult life.

**Second, new skills are built off old skills, and benefit from previous investments.** For example, a child who has learned to read by second grade will be able to absorb more in third grade than a child who cannot yet read fluently. This implies that earlier investments are likely to have a greater and longer term impact on skills, since it is easier and less costly to build these skills at the moments when children are most receptive to learning.

**Third, behavioral skills are valuable early in a child's life since they feed into, and benefit from, cognitive skills.** For example, a child who has more initiative and has greater self-confidence is more likely to feel comfortable exerting their imaginative, being creative and will likely apply themselves more diligently at school. This implies that these skills are valuable both in themselves and because they feed into the development of strong cognitive skills.

**Fourth, strong cognitive and behavioral skills beget strong technical skills.** Technical and job specific skills – often acquired last, through technical and vocational education and training (TVET), higher education and on-the-job learning – will benefit from the stronger cognitive and behavioral skills acquired earlier in the education system. The skills learnt in formal education will help workers to continuously update their technical skills during their working lives.

## Sensitive and critical periods for building a skill

**There are sensitive and critical moments in a person's life during which cognitive, behavioral and technical skills are most responsive to investments.** The “malleable” moments are depicted in bright green in Figure 54, while periods where the skills are less sensitive to change are depicted in blue.<sup>xix</sup> A critical period is one for which there is no substitute, which means that a similar investment at another point in life is unable to change that ability. A period is defined as “sensitive” if an investment during that period can have a greater impact than during others (Doherty 1997; Cunha and Heckman, 2008).

**The foundations of an individual's intelligence are formed early in life.** During the first few years of life, brain development occurs rapidly and in a “bottom up” manner whereby the simple circuits and skills formed provide the scaffolding for more advanced circuits and skills over time. During this period of rapid brain development, the foundations are set for later development, resulting in path dependence: adverse circumstances such as malnutrition, stressful home environments and a lack of stimulation during this period can have long term consequences on adult capacities. Therefore, early childhood years are fundamental for skill development in childhood and in teenage and adult life (Grantham-McGregor et al. 2007). For example, food supplementation to address nutritional deficits before age 5 have been found to have strong positive impacts on cognitive ability, motor development and mental development, but are less effective thereafter (Walker et al. 2007).

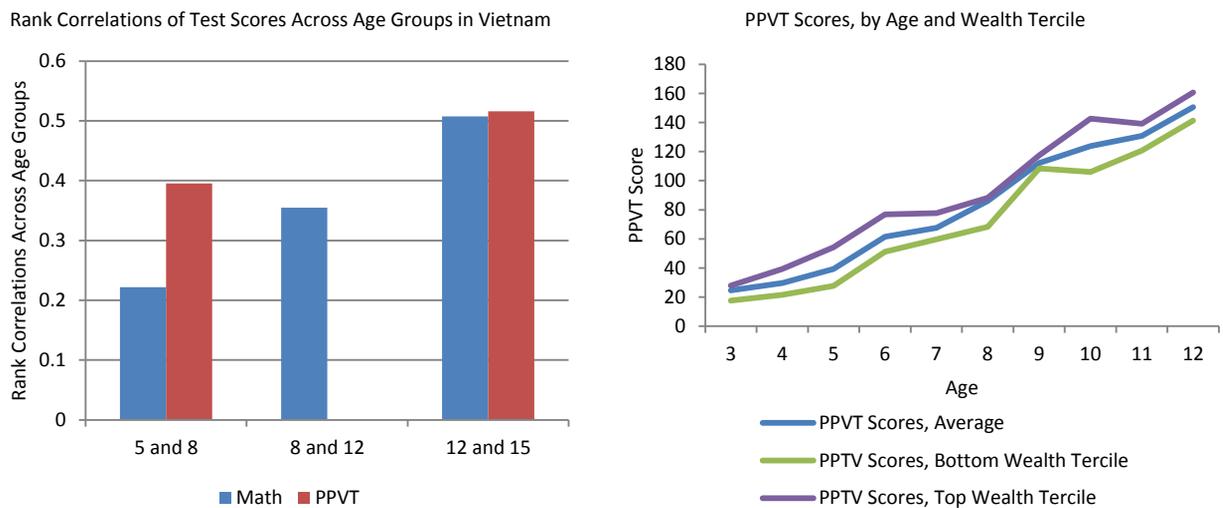
**The foundations of an individual's intelligence are fairly well set early in life.** Two seminal and widely discussed factors of an individual's intelligence are fluid intelligence and crystallized intelligence. Fluid intelligence reflects the capacity to perceive and act upon complex problems under novel conditions, independent of acquired knowledge (Cattell, 1971). In contrast, crystallized intelligence reflects learned skills and knowledge, and is therefore dependent on education and the formation and learning of knowledge (Horn and Cattell, 1967). IQ scores, which capture to a greater degree fluid intelligence, become stable between age 8-10, suggesting a particularly sensitive period for their formation before age 10 (Hopkins and Brecht, 1975, cited in Cunha and Heckman, 2007). However, there is evidence to suggest that the development of fluid intelligence continues developing until the age 16 (Garlick, 2002).

**Children continue to acquire knowledge and cognitive skills based on early cognitive foundations.** Although a person's analytical and deductive capacity is most responsive to investments early in childhood, knowledge accumulation continues throughout adolescence and into adulthood and continues to grow with further education and on-the-job training (see in depth section in chapter 2, Almund et al. 2011).

**Behavioral skills also begin to be formed in the early years and continue to evolve throughout adult life.** There is evidence that behavioral skills are malleable during adulthood, and that indeed they may be *more* responsive to interventions during adolescence than in early childhood (Almund et al, 2011). Interventions to strengthen behavioral skills can, therefore, be successful throughout a person's life. For example, the Jóvenes programs targeting disadvantaged youth in many Latin American countries combine socio-emotional learning with the acquisition of technical skills (see Chapter 5). Personality traits, like cognitive traits, are responsive to environmental stimulus but are also subject to evolution due to predictable biological processes. For example, attitudes towards risk have been found to be highest among adolescents and fall in the early 20s (Paulson et al 2012; Speer 2000).

**There is an increased focus worldwide on behavioral skills formation early in life.** Since personality traits have, however, been found to causally impact performance at school and in the labor market, interventions targeting behavioral skills are likely to be more path-breaking when conducted earlier on in life – before key path-changing decisions are taken, such as whether to drop out of upper-secondary school. For example, higher levels of perseverance and persistence have been found to be positively related to attendance and grades at school (Duckworth and Seligman 2005, Moffitt et al. 2011). This is why there are increasing efforts worldwide to anchor socio-emotional learning in preschool and school curricula (e.g. the “Tools of the Mind” program in the United States), to establish standards for socio-emotional learning (e.g. in Colombia) and to record behavioral skills in student report cards (e.g. in Germany and the United States) as well as to provide relevant training to teachers.

**Figure 55: Cognitive skills are more malleable in early age and become more increasingly set after age 8, while knowledge keeps accumulating**



Source: World Bank staff estimates using data from Young Lives. Panel A uses information from repeated rounds of the Young Lives survey to examine rank order correlations between rounds of the panel. Panel B uses information from the 2009 round of the Young Lives, in which a single PPVT test was administered to younger children and their siblings of different ages.

**Evidence from Vietnam indicates that, consistent with international patterns, foundational cognitive skills are more malleable in childhood.** The Young Lives survey in Vietnam follows a sample of children from early childhood to adolescence. The survey allows assessing changes in test score ranks as children mature, notably using the Peabody Picture Vocabulary Test (PPVT), a widely used test for cognitive ability at age 5 to measure vocabulary, and a Cognitive Development Assessment (CDA) to capture notions of quantity. Figure 55 in the left panel shows rising correlations in the ranks of children in math and vocabulary tests as children grow older. This indicates that an individual’s rank in the population becomes more stable over time – a sign of reduced malleability of cognitive skills with age. The right panel shows the scores achieved by children of different ages on the same test, on average and by wealth tercile. There are two noteworthy messages from this data: First, those children who performed relatively poorly at a younger age are less likely to overtake those who performed better and vice versa for those who performed better earlier on. Second, older children attain higher scores in the vocabulary test than younger children. Therefore, although an individual’s intelligence rank within a population becomes more stable over time, the knowledge they have expanded over time therefore resulting in better performance on these tests.

**Creating the right conditions for skill development in early childhood is more effective than rectifying gaps at later ages.** Since the brain develops in a bottom-up manner, as described in Box 3.1, it is harder

to alter its capacity after it has stabilized with age. Although the “windows of opportunity” for skill development and behavioral adaptation remain open for a period of multiple years, it becomes increasingly difficult and more expensive to change behaviors or to build new skills on the foundation of brain circuits that were not wired properly when first formed. Remedial, second chance education and other professional interventions after gaps have been identified are more costly than providing the appropriate learning and development environment earlier in life.

### **Box 3.1: Why are the early years so fundamental for building skills?**

Brains are built over time, in a process that starts before birth and continues into childhood. Building a brain is similar to building a house – the foundations must be laid, rooms framed and the electrical system wired in a predictable sequence. The “architecture” of the brain, similar to a house, eventually incorporates distinctive features that reflect increasing individuality over time. The wiring occurs under the influence of both genetics and environment – i.e. the environment that a child is born into can affect the architecture of the brain itself, through stimulating and secure interaction that promotes healthy development, or continuous “toxic” stress that can have a damaging impact on early brain architecture. “Toxic” stress can occur as a result of prolonged exposure to extremely trying circumstances (for example, to extreme poverty or violence) that is not mitigated by the strength of reciprocal and nurturing relationships that can help a child to cope.

The brain’s “architecture” is built over a succession of “sensitive moments”, each of which are associated with the formation of particular neural “circuits” (i.e. connections among brain cells) that are associated with specific abilities. The development of increasingly complicated skills and their underlying circuits builds on the circuits and skills that were formed earlier.

Brain circuits that process basic information are wired earlier than those that process more complex information. Higher level circuits build on lower level circuits, and adaptation at higher levels is more difficult if lower level circuits were not wired properly. Parallel to the construction of brain circuits, increasingly complex skills build on the more basic, foundational capabilities that precede them. For example, the ability to understand and then say the names of objects depends upon earlier development of the capacity to differentiate and reproduce the sounds of one’s native language. And the circuits that underlie the ability to put words together to speak in phrases form a foundation for the subsequent mastery of reading a written sentence in a book. Stated in simple terms, circuits build on circuits and skill begets skill.

As the maturing brain becomes more specialized to assume more complex functions, it is less capable of reorganizing and adapting to new or unexpected challenges. Once a circuit is “wired,” it stabilizes with age, making it increasingly difficult to alter. Scientists use the term “plasticity” to refer to the capacity of the brain to change. Plasticity is maximal in early childhood and decreases with age. Although “windows of opportunity” for skill development and behavioral adaptation remain open for many years, trying to change behavior or build new skills on a foundation of brain circuits that were not wired properly when they were first formed requires more work and is more “expensive.” For the brain, this means that greater amounts of energy are needed to compensate for circuits that do not perform in an expected fashion. For society this means that, particularly for vulnerable children living in difficult circumstances, remedial education, clinical treatment, and other professional interventions may be more costly than the provision of nurturing, protective relationships and appropriate learning experiences earlier in life.

Through this process, early experiences create a foundation for lifelong learning, behavior, and physical and mental health. A strong foundation in the early years increases the probability of positive outcomes and a weak foundation increases the odds of later difficulties.

Source: This box draws heavily upon National Scientific Council on the Developing Child (2007), *The Science of Early Childhood Development*. It should be noted that the research in this area is fast moving, complex and includes many questions that are far from resolved.

**The environment in which a child grows up plays a vital role in skill development.** The environment that a child is born into has a fundamental influence on their development and has the ability to alter their genetic inheritance (see Box 3.1). For example, stimulating interactions and stable responsive relationships with care givers provide the sensory inputs needed for the building a healthy brain needed for lifelong learning and behaviors. Negative experiences such as malnutrition or exposure to toxins

before birth or in early childhood are built into the architecture of the developing brain, putting in place a “biological memory” that can affect not only physical and mental health but can also impair future learning capacity and behavior.

**A child growing up in a particularly stressful environment can have difficulties in learning, memory and self-regulation due to disruptions in brain development at an early age.** Being raised in a stressful environment without adequate adult buffering child support can disrupt the architecture of a developing brain, and result in harmful long term consequences. This type of stress is termed “toxic stress”, and includes adverse repeated events that are coupled with limited consistent, supportive relationships to help the child cope with the circumstances. The circumstances that can lead to toxic stress include extreme poverty, chronic neglect and repeated exposure to violence in the community or family. Excessively stressful conditions earlier in childhood have been linked to a number of changes in the brain that can compromise healthy development and life trajectories. Extreme poverty can also weaken marital and parenting relationships as families struggle to make ends meet and parents’ distress in the economic domain spills over to more detached, less nurturing and stimulating parenting that is less responsive to a child’s needs (Duncan et al. 2010).

### **New skills are built off earlier skills and benefit from previous investments**

**Skills built later in life benefit from earlier foundations.** In the early years of brain development, the brain is shaped by genetics as well as the environment in which they are formed, from pre-natal nutritional supplements to supportive and responsive adult interactions. These early years and investments lay down the foundation for learning and behavior. Therefore, early investments have a multiplier effect since early abilities provide the foundations upon which later skills are constructed (Thompson and Nelson 2001). This process has been referred to as *dynamic complementarity* in skill formation (Heckman 1999; Heckman and Carneiro 2003).

**Unless corrected, early disadvantages compound into poorer performance throughout school since children with lower initial cognitive and behavioral skills are able to absorb less knowledge** (Cunha, Heckman, Lochner et al., 2008). When children spend their early years in a less stimulating, or less emotionally and physically supportive environment, brain development is affected and leads to cognitive, social and behavioral delays. For example, high levels of adversity and stress during early childhood has been found to be related to an increase in the risk of stress-related disease and learning problems later in life (Grantham-McGregor 2007; National Scientific Council on the Developing Child, 2007).

**In Vietnam, children who fall behind earlier on are likely to have difficulty catching up, consistent with earlier disadvantages compounding into poor performance later in life.** Children from disadvantaged backgrounds display a lower ability to recognize words and to read fluently, which affects their ability to acquire further knowledge at school. An Early Grade Reading Assessment in primary education conducted in round 3 of the Young Lives survey signals that children from poorer households show a lower level of reading fluency than children from richer households, and also have lower levels of word recognition on average. At age 8, children living in the poorest 25 percent of households recognize approximately 22 fewer words per minute on average than children born to households in the richest quantile, and display lower levels of oral fluency – they read 40 fewer words per minute. 56 percent of children with the bottom 20 percent of scores were found in the poorest wealth quantile. This has an implication for comprehension of written texts, with children from poorer backgrounds showing poorer comprehension of written texts.

**Technical skills learnt at higher educational establishments are built off the basis of the foundational cognitive and behavioral abilities developed in childhood.** Investment in technical skills later in life will have a greater impact on workforce development, the greater an individual's initial cognitive and behavioral skills (Cunha, and Heckman 2007). Technical skills that focus on knowledge specific to occupations, jobs and vocations are often acquired later in life, undergo continuous change, and will benefit from cognitive skills acquired earlier – for example, individuals with better numeracy abilities are likely to make more competent engineers.

### **Behavioral skills feed into cognitive skills and vice versa**

**Higher perseverance and an interest in learning have been associated with children staying longer in school.** Policies that shape behavioral skills are likely to be path-breaking when conducted earlier in life before key, path-changing decisions, such as whether to drop out of upper-secondary school, are taken. Behavioral skills such as self-control and determination (or grit) have been linked to better performance in school as well as a number of other consequential life outcomes. Self-control at age 10 has been found to be associated with higher levels of income, savings behavior, financial security, occupational prestige, health and other outcomes later in life among 1,000 students tracked in New Zealand (Moffitt et al. 2011). Similarly, self-discipline among a population of adolescents was found to be a strong predictor of academic success and diligence such as the final grades achieved and the number of hours spent doing homework (Duckworth and Seligman, 2005).

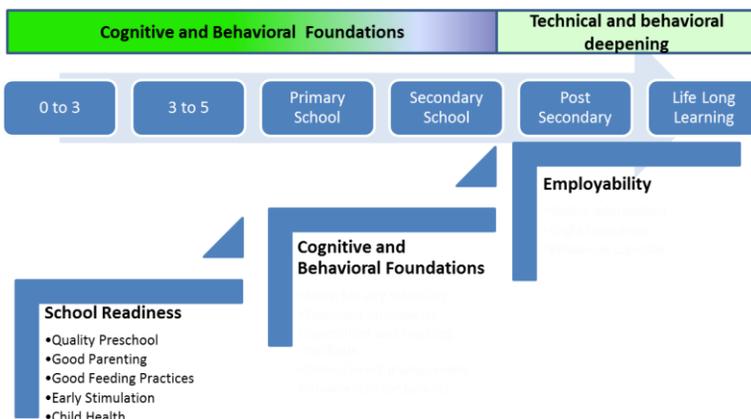
**Evidence from Vietnam supports the importance of behavioral skills for the accumulation of cognitive skills.** A school survey with an assessment of competencies in mathematics and Vietnamese language at grade 5 conducted as part of the Young Lives project in 2012 included questions to assess a student's academic confidence and academic effort at the beginning and the end of the school year. The evidence from this exercise underscores the importance of children's behavioral skills for their learning outcomes in mathematics and Vietnamese language over the course of the school year in grade 5. Academic confidence and effort are important for learning success even when controlling for initial scores and student background characteristics. At the same time, scores in mathematics and Vietnamese were associated with increases in academic confidence and effort, highlighting the dynamic interaction between cognitive and behavioral skill formation (Yorke and Rolleston, forthcoming). This also suggests that, in order to be effective, teaching in early childhood and general education should not just place emphasis on the accumulation of knowledge but also on behavioral skills such as academic confidence and self-esteem. Behavioral skills are not just demanded by employers, as shown in Chapter 2, but they also contribute to the accumulation of learning in school.

### **Step 1: School readiness through early childhood development**

**The evidence in skills formation suggests that early childhood development and education interventions for children below the age of 6 to promote their readiness for school should be the first step in a holistic skills development strategy for Vietnam.** The concept of “school readiness” or “readiness to learn at school” has emerged over the past decade or so and represents the ability of children entering primary school to succeed at school. For example, the Offord Centre for Child Studies in Canada (2013) defines readiness to learn as a “child's ability to meet the task demands at school” and as a “child's ability to benefit from the educational activities provided by the school.” School readiness is considered to be the product of a young child's cognitive, physical and socio-emotional development from an early age onward (Naudeau et al. 2011:36; Hair et al. 2006). Figure 56 presents interventions to promote school readiness of children entering primary school as the first step in skills development. The

right nutrition and stimulation through effective parenting before the age of 3 and quality preschool between 3 and 6 contribute to children’s readiness for school.

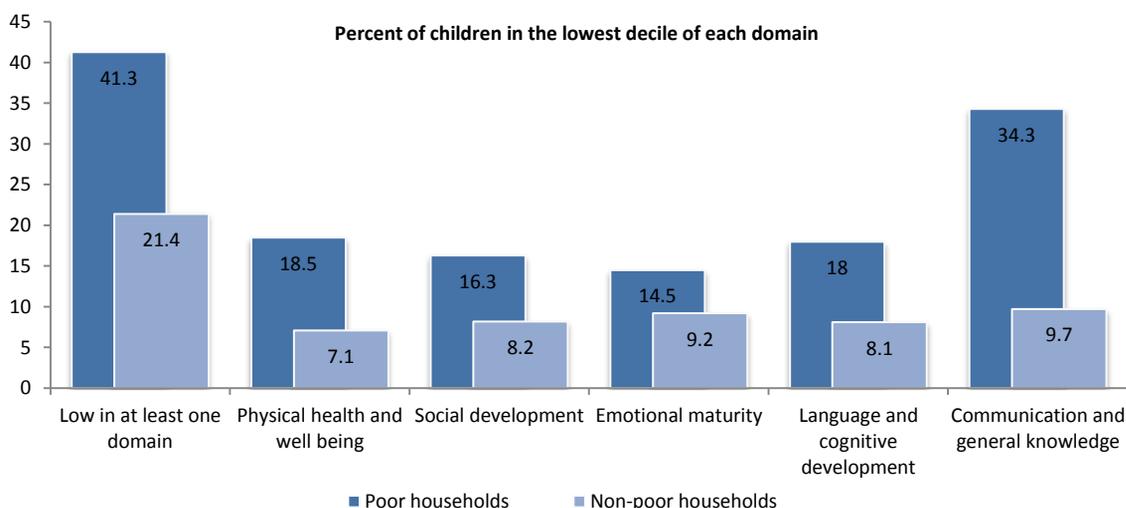
Figure 56: Step 1 in skills development: promoting school readiness to help children learn in school



Source: Authors’ illustration

**A new assessment of school readiness of 5 year-olds confirms that much of the inequality in learning outcomes between different types of young Vietnamese observed in primary education and beyond is already established before the age of formal schooling.** In 2012, the Ministry of Education and Training assessed school readiness among 5 year-old children in public preschools (MOET, 2013). The survey adapted the Early Development Instrument (Offord Centre for Child Studies, 2013) to measure the development of children across 5 domains: physical health and well-being; social knowledge and competence; emotional health/maturity; language and cognitive development; and general knowledge and communication skills. Shares of children at various levels of school readiness can be determined from scores for each of the five domains. Children scored in the lowest decile in one or more of the domains are considered “vulnerable” in terms of school readiness. While the EDI cannot be used to diagnose whether a particular child is ready or not-ready for school, it can be used to identify the shares and types of children who are most vulnerable to not being ready.

Figure 57: EDI - Percent of children vulnerable in terms of school readiness by household poverty status and domain



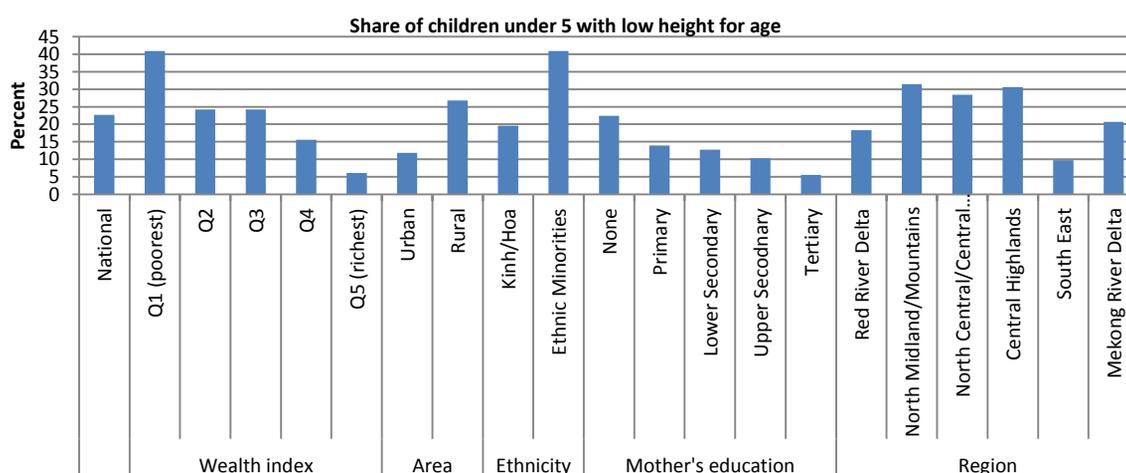
Source: Author’s calculations using Vietnam EDI and MOET 2013 Forthcoming

**The degree of school readiness varies substantially across Vietnam’s primary school entrants.** Children from poor households in Vietnam are more likely to be vulnerable to being limited in the various domains of school readiness. Figure 57 presents the percent of children in the bottom ten percent among Vietnamese 5 year-olds—the national definition of vulnerable—between households officially deemed as poor and those not deemed as poor. Children living in poor households are more likely to be vulnerable in each of the five developmental domains. Over four out of ten children from poor households are vulnerable in at least one domain – almost twice the incidence of vulnerability among children in non-poor households. Children are most vulnerable in the domains of communication and general knowledge, also the domain with the largest difference across poor and non-poor households, as well as in the domains of physical health and well-being, and language and cognitive development.

### Effective parenting for children aged 0-3

**The arguably gravest form of inequality of opportunity manifests itself quickly in life – in the form of chronic child malnutrition which remains one of Vietnam’s biggest human development and skills challenges.** Vietnam’s youngest population is at a high risk of malnutrition, and in particular of stunting. While Vietnam has made considerable progress in improving on indicators of child nutrition, almost a quarter of children below the age of 5 remain stunted, i.e. had low height for age as a result of chronic malnutrition, in 2010 (GSO and Unicef, 2011; see Figure 58). Rates are considerably higher among ethnic minority children, children from the poorest households and children whose mothers have not attended any education as well as in certain, predominantly rural, regions across the country. Child malnutrition has substantial negative effects on a child’s brain development and hence on their cognitive skill formation. Confirming international evidence, analysis using data from Young Lives suggests that stunting at age 1 has a long-term impact on cognitive development in Vietnam, independent of birth weight, environmental factors or parental and home background. Le Thuc Duc (2009) finds an increase on one standard deviation in the height for age Z-score at age 1 leads to an increase by 24 percent in the log score in the PPVT.

Figure 58: A large share of Vietnamese children below the age of 5 are stunted



Source: GSO and Unicef (2011). Percentage below two standard deviations

**Apart from poverty and living conditions such as access to clean water and sanitation, child malnutrition can be explained by inadequate infant and young child feeding practices.** The role of parents in cognitive and behavioral skill development through their care for and stimulation of their

young children is critical. But not all parents are taking, or are capable of taking, the right decisions for their infants and young children. Table 4 presents estimates of key breastfeeding indicators for Vietnam as well as for the poorest and wealthiest quintiles of the population. The World Health Organization (WHO) recommends that children be breastfed within one hour of birth, be exclusively breastfed for the first six months of their life and continue to be breastfed in addition to receiving solid food for two years or longer (WHO, 2010). As Table 4 shows, adherence to these recommendations is very low in Vietnam. Only 40 percent of children born in the past two years prior to the survey were breastfed within the first hour of birth. Only 17 percent of children aged 0 to 5 months were exclusively breastfed, and only 19 percent of children aged 20 to 23 months were still being breastfed.

**Table 4: Feeding practices for young children**

	All	Poorest quintile	Wealthiest quintile
Breastfed within one hour of birth (percentage of last-born children in the past two years)	40	52	33
Percentage of children 0 to 5 months exclusively breastfed	17	28	11
Percent of 20-23 month old children still being breastfed	19	39	4

Source: GSO and Unicef (2011)

**Wealthier Vietnamese parents are even less likely to breastfeed their infants than the poor.** It is not clear whether parents stray from optimal feeding practices because of a lack of knowledge or value for these practices or because of the opportunity cost of doing so. For example, parents in the wealthiest quintile are much less likely to follow optimal feeding practices than parents in the poorest quintile. This may be because alternatives to breast milk are more accessible among wealthier households, and also suggests a lack of value or knowledge. These patterns also reflect differences in work habits and the jobs that women do – women in the wealthiest quintile may be engaged in work that is incompatible with breastfeeding.

**Beyond sound feeding practices, early stimulation of children is essential for cognitive development.**

More parents in Vietnam are engaging in educational and school readiness activities for young children. Table 5 presents the prevalence of activities in households to promote children’s education and school readiness. Educational and school readiness activities include reading or looking at picture books with the child, telling stories, singing songs to or with the child, taking the child outside the home, playing with them, and naming, counting, and drawing things with the child. Among 3 to 5 year old children, 77 percent had an adult member engage in 4 or more of these types of activities in the three days prior to the survey. The father engaged in at least one of these types of activities for 61 percent of children. On average, adult members engaged in 4.5 of these types of activities while fathers engaged in 1.6 activities.

**Vietnam’s better off parents are more likely to engage in educational activities with their young children.**

The father in the wealthiest households was engaged in twice as many activities on average than fathers in the poorest households. These differences may be due to wealthier parents being more aware of educational needs of children or valuing education more. They may also reflect parental presence, whereby poorer parents devote more time to income generating activities to make ends meet. None of these activities except for one (reading and showing books) require the household to own learning materials; consequently, it is unlikely that the poorest are unable to provide as many activities due to income constraints.

**Table 5: Activities to promote learning and school readiness in the past three days**

	All	Poorest quintile	Wealthiest quintile
Percent of children aged 35-59 months			
With whom adult household members engaged in four or more activities	77	63	94
With whom the father engaged in at least one or more activities	61	55	79
Mean number of activities			
Any adult household member engaged with the child	4.5	3.8	5.4
The father engaged with the child	1.6	1.2	2.4

Source: GSO and Unicef (2011)

**Enhancing parenting capacity for feeding and stimulation among disadvantaged parents is an important element of early childhood development.** International evidence shows that parent counseling and curriculum-based parenting classes have been effective at improving parenting practices, particularly related to feeding. Interventions that have been found to be effective range from individual and group counseling for breastfeeding (see Bhutta et al. 2008 and Britton et al. 2007 for reviews) to curriculum-based parenting classes (Nadeau et al. 2011). Community-based learning may also be effective for influencing parenting practices. Evaluation of community meetings to identify and resolve childbirth and childcare issues for mothers in Nepal, India and Bolivia, for example, found positive effects on parenting behavior and subsequent health outcomes. A community-based mechanism for providing information to mothers on nutrition practices in Senegal also yielded improvements in nutrition practices (see Naudeau et al. 2011:115 for a review). A long-term evaluation of an early childhood development program in Jamaica launched in 1986/7 and targeted to mothers of babies that were stunted due to malnutrition showed that support and guidance on how to stimulate their babies' cognitive, physical and emotional development proved more effective than the provision of nutritional supplements. A survey twenty years later showed that beneficiaries of this program were earning higher wages than a control group and that they had caught up to their peers who had not suffered from malnutrition in early age (Gertler et al, 2013).

**Support for the development of children aged 0-3 remains underdeveloped in Vietnam.** Despite high rates of stunting among children under the age of 5 and evidence of low and declining use of breastfeeding, child nutrition and infant and young child feeding (IYCF) are not adequately prioritized in government policy. Recent consultations with government leaders at central and local levels on the reasons for high child malnutrition in Vietnam showed that a majority of leaders acknowledge that the overall policy framework for addressing malnutrition was reasonably accurate, but that the main problems lie in implementation (Alive & Thrive, 2012).

**The weaknesses in early childhood development in Vietnam can be explained both through coordination and policy disconnects.** First, key agencies at the central and local levels are not sufficiently aligned to coordinate government policy in the multi-sectoral arena of early childhood development. Ministry of Health is in charge of young child health, Ministry of Education and Training in charge of early childhood education, Ministry of Labor, Invalids and Social Affairs is in charge of child welfare issues – but there is no evident coordination mechanism to bring these disparate strands of early childhood development into an integrated and focused policy and implementation framework. Second, there is significant scope to be more systematic in promoting breastfeeding and child stimulation through a variation of parallel interventions in hospitals after birth, in local health stations, in communities, and through communication campaigns (Alive & Thrive, 2012). While there are

extensive poverty reduction policies in place for poor families with children, including through a myriad of more than a dozen cash transfer programs, these are mostly aimed at families with children of school age and not at young children below the age of 5. Likewise, the availability of parenting programs and support to parents from disadvantaged backgrounds through social workers or community volunteers remains limited and not systematic, although the Womens' Union has piloted and is gradually expanding a program of women-led parenting groups across Vietnam. Institutional child care for children below the age of 3 through crèches is very limited and largely concentrated in urban areas in the red River Delta (Jarvie, 2010).

**International evidence suggests that an integrated approach to early childhood development aimed at improving parental information and capacity constraints can help to overcome malnutrition and to get children off to the right start.** Improving nutrition outcomes and early stimulation in the earliest years, in particular for children growing up in disadvantaged circumstances, requires addressing information and capacity constraints for parents. An integrated early childhood development package for children aged 0 to 3 could involve three connected pillars, all of which require close institutional coordination both at the policy and service delivery level. First, a targeted cash transfer program for poor families with children from birth could help address income poverty and improve the financial capacity of parents to make good decisions for their children. Second, curriculum-based parenting programs focused on feeding and early stimulation, complemented by regular visits to families by social workers or community volunteers could help to address information and knowledge capacity gaps. Third, greater outreach by commune health stations could help facilitate access to child health services.

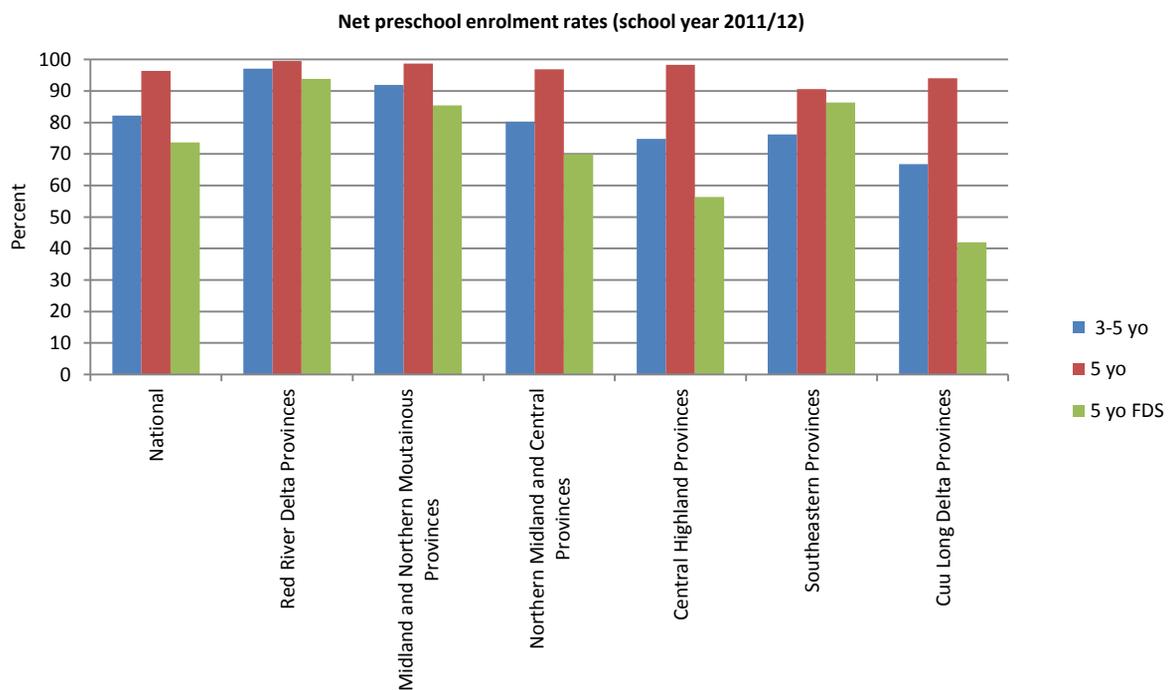
### High quality preschool for children aged 3-6

**The promotion of preschool for children aged 3-6 is currently the main policy lever of the Government to enhance school readiness.** Enrolments in preschool are large and growing, but there are variations in access and quality of care across the country. The Government of Vietnam recognizes the importance of early childhood education to better prepare children, particularly the most disadvantaged children, for school. This is why the Government modernized the preschool curriculum, launched a program to universalize full-day preschool for 5 year-old children (Program 239) and is making investments to facilitate access to preschool among the most disadvantaged children aged between 3 and 5. While access to some form of preschool for 5 year-old children is high country-wide (see Figure 59), the enrolment in full-day preschool, the key national goal, is still limited and there are wide variations across the country. Moreover, enrolments among children of less than 5 years of age are often significantly lower.

**An enhanced focus on quality can help to further strengthen early childhood education.** Vietnam's early childhood education has many strengths—including a sound policy framework, child-focused curriculum and rapidly expanding provision, particularly for 5 year olds. However there is a disconnect between policies to promote access and quality at the national level, and the actual provision of facilities in the provinces. As a result there are wide variations in quality and access, with significant weaknesses in provision for disadvantaged children. While promoting access remains a priority, particularly in underserved regions, the Government's focus should concentrate increasingly on improving the quality of provision. Taking advantage of its modern and child-centered curriculum and translating it into higher quality provision across all classrooms requires investment in the effectiveness of teachers and principals through major teacher training reforms and through upgrading the competence of the current workforce. This also requires a special focus on ethnic minority children,

including through increasing the number of ethnic minority teachers and integration of ethnic minority teaching assistants (Jarvie, 2010).

Figure 59: Preschool enrolments across regions in Vietnam



Source: Ministry of Education and Training. FDS means full-day preschool provision, including lunch in line with Program 239.

## Summary

**Skills formation happens throughout life, but the early years are particularly important in setting the cognitive and behavioral foundations.** The most sensitive moments for skill development vary across different dimensions of skills, with cognitive and behavioral skills formation more sensitive to interventions earlier in life and technical skills later. Behavioral skills and cognitive skills formation are intertwined: evidence from Vietnam shows that academic confidence helps with learning, and learning success fosters academic confidence. And good cognitive and behavioral skills facilitate the formation of technical skills. The stronger their cognitive and behavioral foundation skills, the better will Vietnamese workers be able to acquire job-relevant technical skills and keep them up to date with accelerating technological progress over longer working lives.

**The early years are also the sensitive moment when children from disadvantaged background start to irrevocably fall behind, and where focusing more investment can yield the highest return.** There is strong international evidence to suggest that targeting these skill gaps at the ages at which they emerge is more efficient and effective than remedial interventions. At present, almost a quarter of Vietnamese children suffer from stunting by the time they reach the age of 5. Stunting undermines cognitive development. Children aged 5 from poor households are considerably behind across a range of dimensions of school readiness compared to their non-poor peers. This suggests that Vietnam needs to expand efforts to strengthen early childhood development interventions for children below the age of 3, beyond current efforts to universalize preschool for 5 year-olds, to provide all children with the opportunity to form the right foundation skills early on.

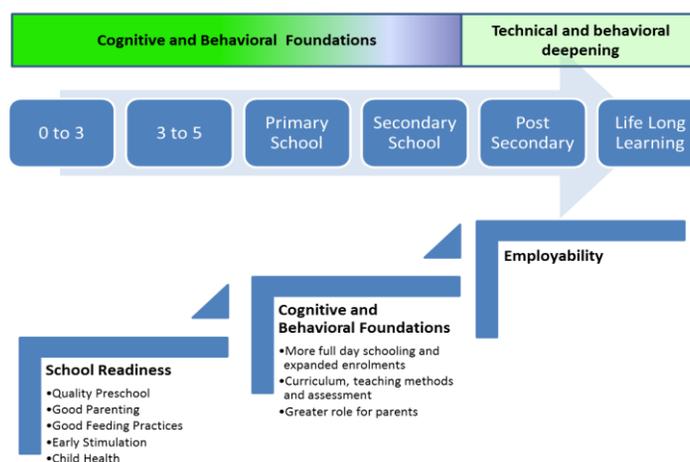


## Chapter 4: Cognitive and Behavioral Foundation Skills in the General Education System

**General education has played an important role in advancing basic cognitive skills among Vietnam’s children and workforce over the last two decades.** Vietnam’s general education system has undergone a remarkable transformation since the đổi mới reforms. Enrolments have expanded dramatically at every level and Vietnam’s population has become increasingly well-educated. An initial, successful focus on expanding access to and completion of primary education, as called for under the Millennium Development Goals, has made way to an increased emphasis on expanding pre-primary and secondary education enrolments. Available evidence suggests that the education system succeeds in equipping graduates with basic literacy and numeracy skills by the end of primary school, perhaps more so than education systems in richer countries.

**Strengthening higher order cognitive and behavioral skills among all school graduates means entering a new phase in Vietnam’s education development from expanding access to deepening quality.** In other words, with employers highlighting the importance of advanced cognitive and behavioral skills, Vietnam needs to strengthen its system further to provide graduates with those needed foundation skills and to overcome inequalities in learning outcomes. It is the second step of a holistic skills development strategy (Figure 60). This chapter provides a snapshot of the current general education system and discusses how Vietnam can do more to build the right cognitive and behavioral foundations. It calls for *more schooling*, with expanded full-day instruction at primary level and enhanced access to secondary education; *better schooling*, with a curriculum and teaching methods that foster the development of higher order cognitive and behavioral skills in students; and *schooling that involves parents and local communities* more. Vietnam is in a good position to implement such reforms – the school infrastructure is there and the school population is declining.

Figure 60: Step 2 in skills development: Developing the cognitive and behavioral skills foundation

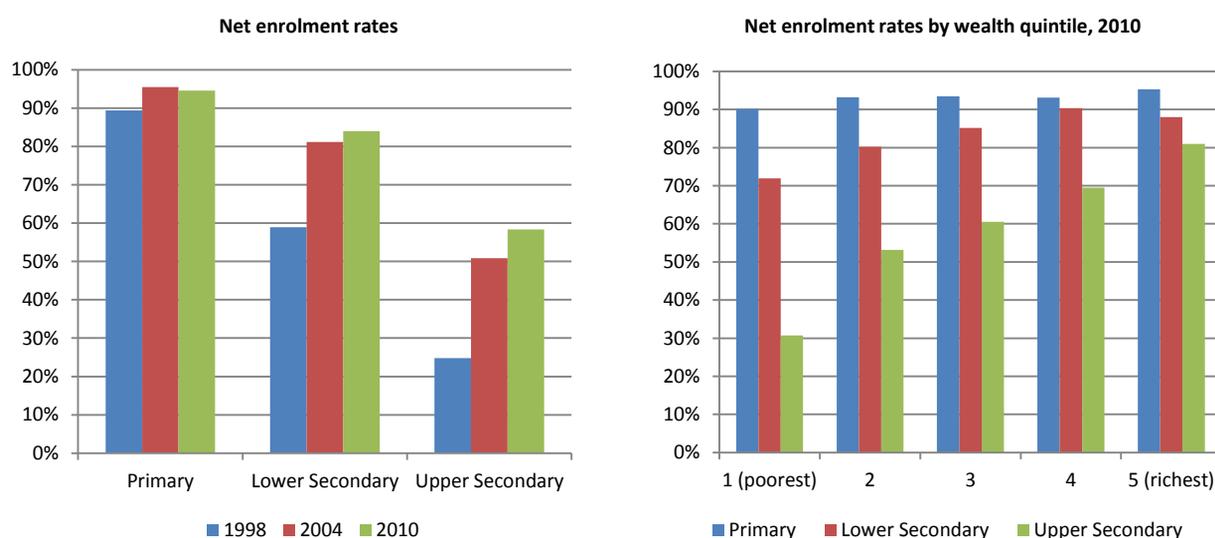


Source: authors’ illustration

## General education in Vietnam at a glance

**Ever greater shares of Vietnamese children and young people attend and complete primary, lower secondary and upper secondary education, but there are inequalities in enrolment at the post-primary level.** Primary enrolment is universal today, and lower and upper secondary enrolments were above 80 and close to 60 percent respectively in 2010 after considerable increases in enrolments over the last 15 years (Figure 61, left panel). The universality of primary enrolment is evident when looking at the breakdown by wealth quintile: 90 percent of children from the poorest households are enrolled in primary education. Primary education in Vietnam is compulsory and involves formal half-day provision, which is free of charge. Secondary education is not compulsory and schools levy tuition fees, which are exempt for children from registered poor households. Despite this, net enrolment rates at secondary level vary significantly between rich and poor children, in particular at upper secondary level. The failure by many children from less well-off households to progress to upper secondary education is also a key predictor of their subsequent under-representation in higher education. A nuanced picture emerges: In Vietnam today primary education is for all, while upper secondary and above is mainly for the wealthy.

**Figure 61: Although primary enrollment rates are high, there are considerable inequalities to access to secondary education**



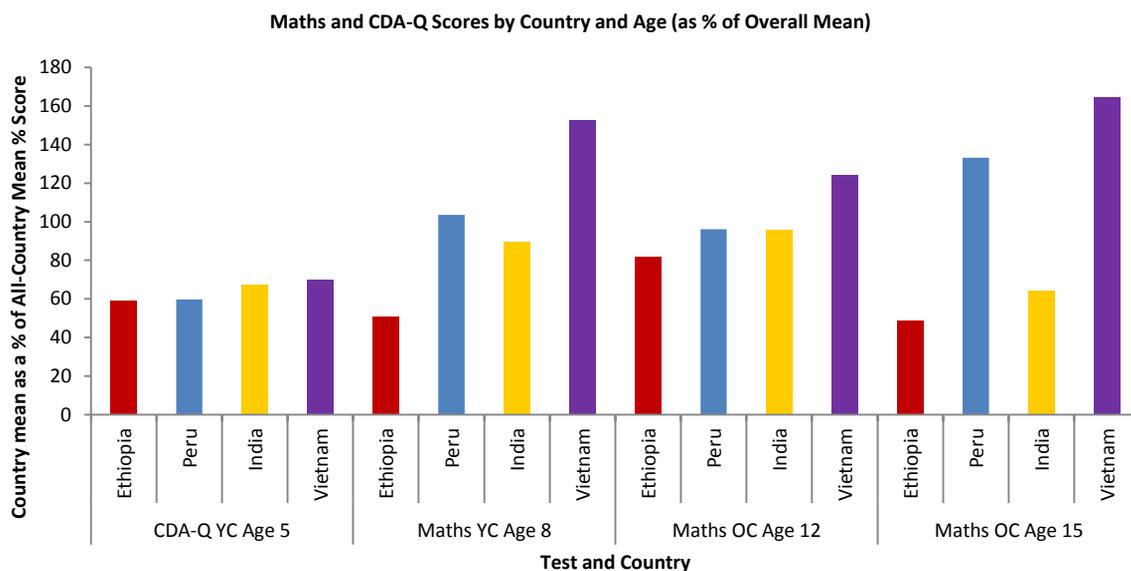
Source: Staff estimates based on VHLSS 2010

**Half-day tuition time in primary education is short relative to the needs of children and compared to other countries.** Half day schooling involves between 23 and 25 instruction periods (40 minutes long) per week over a school year of 36 weeks (i.e. between 550 and 600 hours per year), which is short relative to that in other countries and seen as too short to cover the curriculum adequately. Teachers in Vietnam are paid for 40 hours (the norm of working hours in the civil service) but deliver only about 15.3 hours of tuition a week (23 periods). The amount of tuition time per teacher is low compared to other countries with established full-day schooling. In advanced economies, teachers typically spend from 22 to 25 hours per week teaching, which corresponds exactly to the amount of tuition received by students (on average between 800 and 1000 hours of tuition each year) (SEQAP, 2012).

**Available evidence suggests that the Vietnamese general education does a good job at imparting basic cognitive skills.** Even with relatively shorter formal instruction time, there is reason to believe that the Vietnamese general education system performs well in terms of imparting basic cognitive skills such as

literacy and numeracy. Benchmarking Vietnam in terms of its educational outcomes has been impossible given that it has not participated until recently in any large international student assessment exercises.<sup>xx</sup> However, research on a more limited scale suggests that the Vietnamese primary education system compares favorably with other countries. For example, evidence from the Young Lives survey finds that Vietnamese students perform consistently better on mathematics than their peers in Ethiopia, Peru and India at ages 5, 8, 12 and 15 (Rolleston, James and Aurino, forthcoming) (Figure 62). Moreover, a literacy assessment in the STEP skill measurement survey presented in Chapter 2 shows that Vietnamese adults outperform their peers in Laos, Bolivia and Sri Lanka and just slightly trail those in Yunnan province, China.

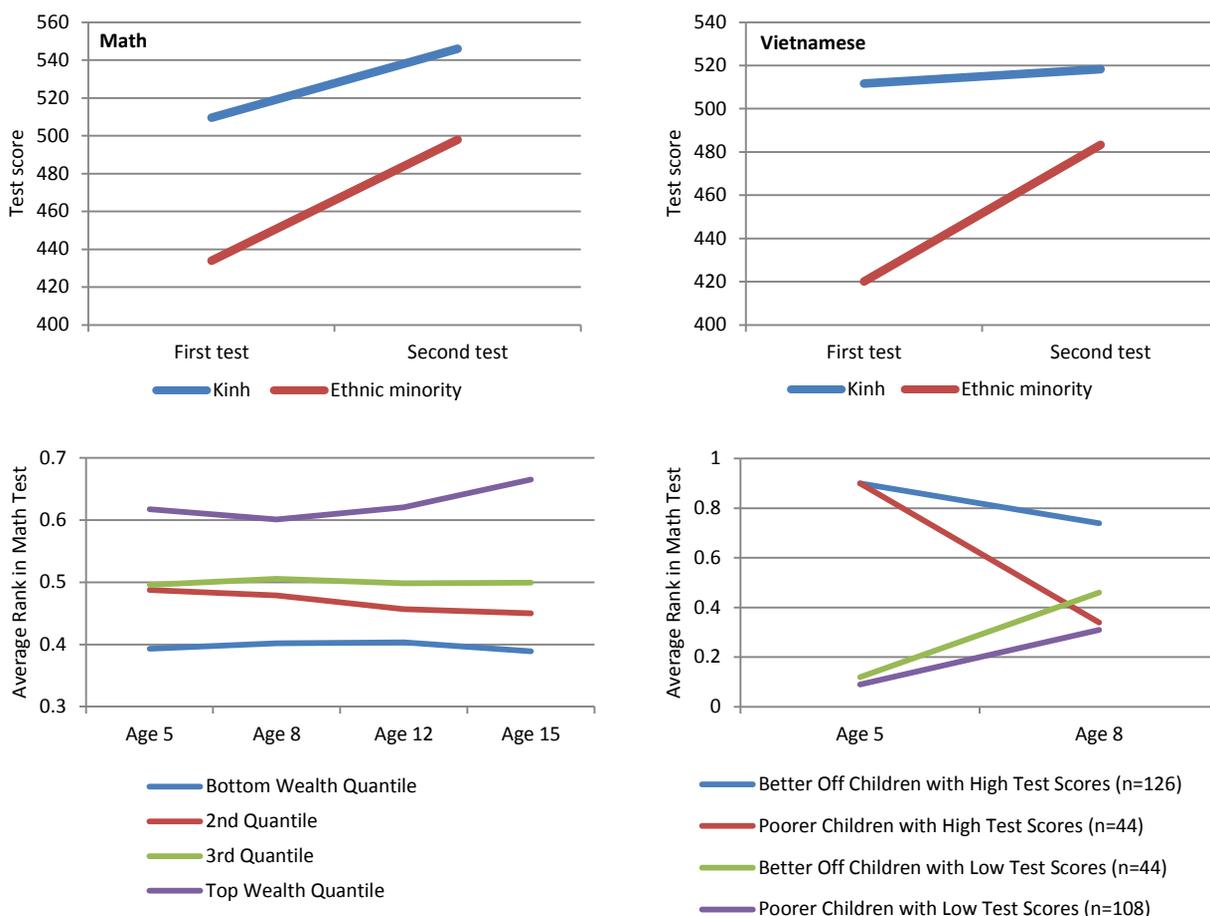
Figure 62: Vietnamese students outperform their peers in Ethiopia, Peru and India in mathematics



Source: Rolleston, James and Aurino (forthcoming) with data from Young Lives

**Gaps in student performance are large between disadvantaged and other children, but primary schooling shows some success at helping children from disadvantaged background catch up.** The Young Lives school survey in 2012 involved a curriculum-based test at the beginning and the end of grade 5 (see Figure 63, top panel). It shows, first, that there are large gaps in curriculum mastery between ethnic Kinh and ethnic minority children both at the beginning and at the end of the school year. It also demonstrates, however, that ethnic minority children in grade 5 reduced the performance gap with their ethnic Kinh peers in curriculum mastery in Vietnamese language and mathematics over the course of the school year. Catch-up in Vietnamese language was particularly pronounced. In mathematics, learning progress was fast for both ethnic minority and ethnic Kinh children, with less bridging in the learning outcome gap. In mathematics, the gap at the end of Grade 5 remains the equivalent of one year of instruction (the average increase in the test between first and second round was 41 points – less than the difference in performance between ethnic Kinh and minority children).

Figure 63: Equalizing effects of schooling in Vietnam? Yes and no.



Source: Rolleston, James, Pasquier-Doumer and Tran (2013) with Young Lives data (top panel); World Bank staff using Young Lives data (bottom panel)

**However, primary education overall is not able to help disadvantaged children fully make up for unequal starting positions.** Figure 63 (bottom panel) shows data from multiple rounds of Young Lives surveys presenting the evolution of learning outcomes of children over time by the wealth index of the children’s households (left bottom). Differences in learning outcomes between children from different socio-economic groups are already well established at age 5, consistent with the evidence from the EDI shown earlier. While there is some narrowing of the gap in learning outcomes between children in richest and poorest households within grade 5, gaps remain through time. In fact, the average rank in mathematics and Vietnamese language test scores of initially well-performing students from disadvantaged background is not able to keep pace with well-performing students from better-off backgrounds (right bottom).<sup>xxi</sup> This suggests that, while schooling contributes to a bridging of the gap in learning outcomes, it is not sufficient to make up for the effects of disadvantage already incurred before the age of 6, i.e. gaps in school readiness. To improve learning outcomes among disadvantaged children, it is necessary to not only look at the classroom (i.e. the quality of the teacher) but also at how the situation at home can be improved, including through engagement with the parents and targeted additional support for children from disadvantaged background (see below).

**Vietnam’s focus on ensuring minimum quality standards across all primary schools appears to be bearing fruit in terms of relatively equitable provision.** More than a decade ago the MOET introduced a Fundamental School Quality Level (FSQL) which encompassed indicators of quality that would be

monitored and enforced for primary schools such as indicators related to teaching staff, teaching materials, infrastructure and school management. The 2012 Young Lives School Survey shows that, while students in more advantaged sites surveyed across Vietnam were on average receiving more periods of instruction per week, their teachers were more qualified and the facilities of better quality, the difference in many key indicators of quality between more and less advantaged sites was relatively small and did not follow a clear pattern (Rolleston, James, Pasquier-Doumer and Tran, 2013).<sup>xxii</sup> More importantly, while children in more advantaged sites were more likely to attend better performing schools, some of the best performing schools in terms of the “value added” to learning achievement of their students are in disadvantaged sites.

## Step 2: Building the cognitive and behavioral foundation in general education

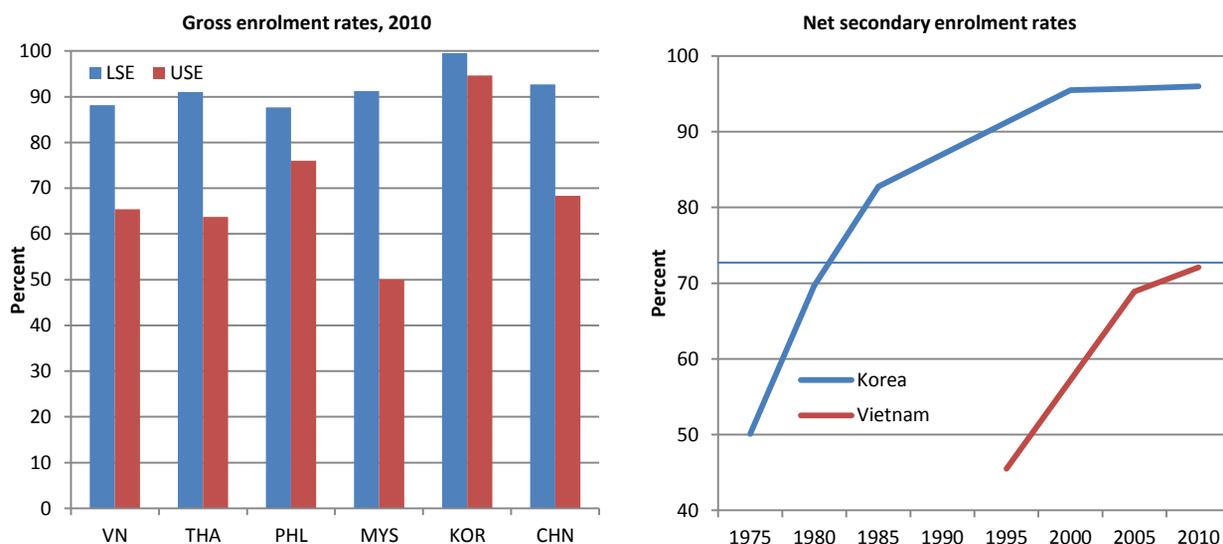
**Vietnam’s general education system is successful in providing graduates with good basic cognitive skills. Reforms should carefully build on the system’s strengths.** Shifting the emphasis in general education towards making sure that more children learn and acquire the higher order cognitive and behavioral skills demanded in Vietnam’s labor market does not mean that the system needs wholesale reform. Instead it needs careful adjustments, building on its strong features. Building stronger cognitive and behavioral skills will require (i) *more schooling*, with full-day instruction and expansion of access to secondary education, (ii) *better schooling*, with a curriculum, teaching methods and assessments that foster the development of higher order cognitive and behavioral skills in students and (iii) *greater involvement of parents and communities in schooling*. All three directions are particularly important to help students from disadvantaged backgrounds catch up. There are many opportunities in the move to full-day schooling to find room to broaden the curriculum and to find time to build on strong foundations through exposure to a wider range of learning experiences.

### More schooling

**Improving cognitive foundation skills among Vietnam’s next generation will require that they spend more time in school.** First, education careers need to be extended through increasing the progression rates from primary to lower secondary and from lower secondary to upper secondary. Second, the tuition time in primary education needs to be extended through introducing full-day schooling. More schooling carries additional costs which need to be covered by the government or parents or both. A decline in the number of students means that there is an opportunity to rebalance public spending towards the new priorities of expanded secondary education and full- day schooling.

**More students need to enroll and complete general secondary education.** Gross secondary enrolment rates in Vietnam are high relative to other East Asian economies, but fall short of those in Korea. As Figure 64 demonstrates, gross enrolment rates for lower secondary education are broadly on par with Thailand, Philippines and Malaysia but are below those in China and significantly below those in Korea where lower secondary education is universal. Even though Vietnam is trailing Korea on upper secondary gross enrolment rates today, Korea is where Vietnam wants to go in the future. To provide some orientation: Vietnam’s secondary net enrolment rate in 2010 stood at 72 percent – the equivalent of Korea’s in the early 1980s. At that time Korea’s share of employment in professional and technical occupations, which require at least secondary education, was roughly similar to Vietnam’s today. Its considerable expansion of employment in these occupations was associated with expansions in secondary enrolment.

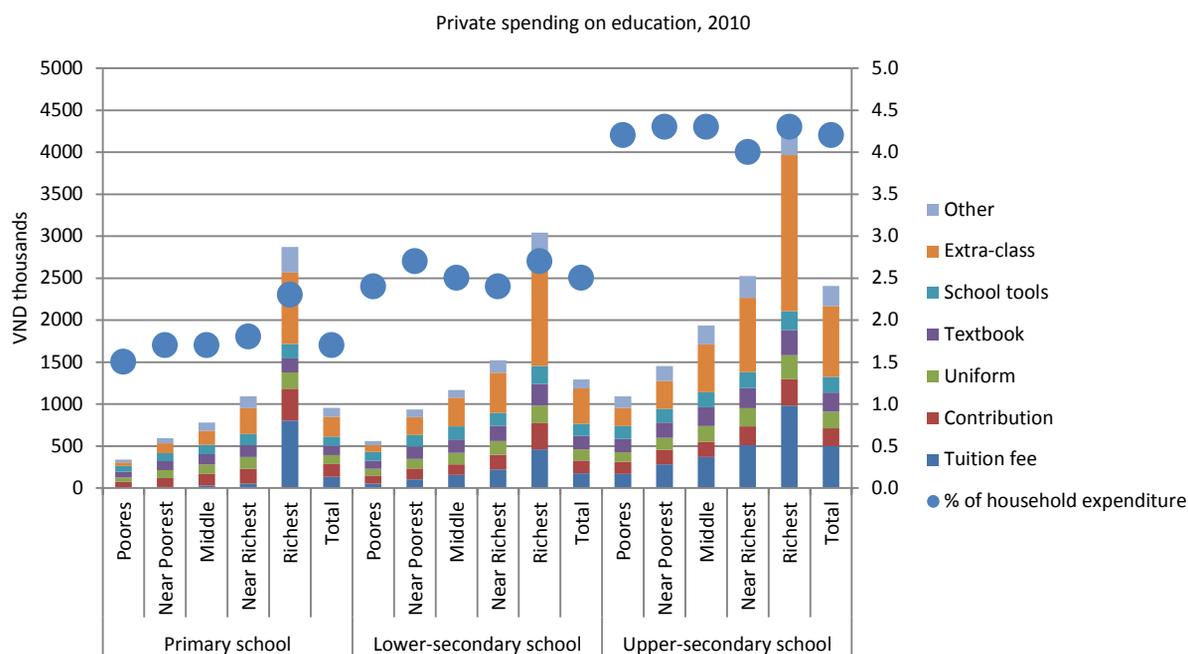
Figure 64: Vietnam compares well with other East Asian economies in terms of secondary enrolments except Korea



Source: Edstats. Note: Philippines data from 2009. 1995 data for Vietnam in right hand chart from 1998 and 2005 data from 2004. “LSE” means lower secondary education and “USE” upper secondary education.

**Expanding secondary enrolments requires an expansion in the supply of secondary schooling and a strengthening of demand by easing the financial constraints of less well-off households.** Progressing to lower and upper secondary education involves considerable costs to households. This involves both a direct and the indirect cost of not earning income on the labor market. Figure 65 presents the private cost of education by level of education and by type of expenditure in 2010. The private cost of upper secondary at around 4.2 percent of overall household expenditure is large and significantly larger than for primary education (around 1.7 percent) and lower secondary (around 2.5 percent). While the shares of private expenditures are broadly similar across household wealth quintiles, the poorest households spend significantly less than richer households in absolute terms, with expenses on tuition, contributions and extra classes making the biggest difference. Larger expenses for formal tuition and contributions at upper secondary level likely reflect the fact that upper secondary schools are fewer in number than lower secondary schools and are located on average further away, which imposes transport and boarding costs that may be unaffordable to less well-off households.

Figure 65: Private direct costs of secondary education is considerable



Source: World Bank staff estimation based on VHLSS 2010

**Formal tuition is not the main driver of private spending and tuition exemptions alone do not offset all private costs.** In addition to tuition, there are other costs including books, equipment and uniforms. This suggests that only waiving the tuition for children from poorer households may not be sufficient to encourage their higher enrolment at secondary levels. International experience shows that well targeted and adequate cash transfers for poor households conditional on a child’s school enrolment or attendance can help to offset direct and opportunity costs associated with schooling and thereby expand the demand for secondary education (Grosch et al., 2009). And targeting resources to the poor, particularly to the hardest-working children, can help to expand enrollments and also raise learning outcomes. Recent evidence from a scholarship program in Cambodia showed that scholarships that were allocated based on a combination of income-based and merit-based targeting mechanisms had the highest impact on test scores (Barrera-Osorio and Filmer, 2013).

**Wealthier parents already demand more schooling than is formally provided, evident in the prevalence of extra classes** where parents pay for their children to attend regular, core academic lessons typically by their own teachers after school hours. Vietnam’s policy of socialization builds on parents’ financial contributions towards education, including complementing publicly funded half-day provision in primary education. Traditionally, many children in urban areas in Vietnam have participated in informal extra classes that are taught in the afternoons, usually by the same teacher, and financed by the parents. Extra classes are not only a Vietnamese phenomenon; they are encountered across several countries in East Asia. But they are prominent in Vietnam: In 2010 parents of 33 percent of primary students and 49 percent of lower secondary students reported some expenditure on coaching sessions for academic subjects (VHLSS). The actual number of children whose parents pay for extra classes may actually be much higher. For example, in the 2009 Young Lives Survey, 70 percent of 14 and 15 year-old students attended extra classes and extra classes amounted to an average additional 10 hours of instruction per week, representing 27 percent of total instructional time.

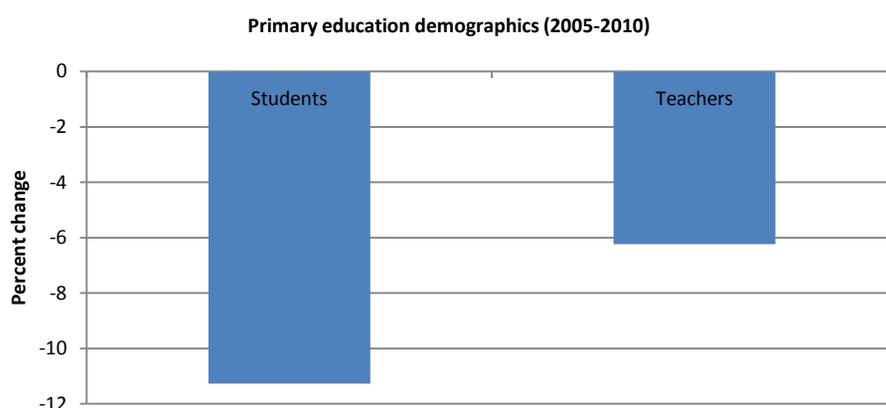
**Extra classes are problematic in multiple ways.** First, if they focus on the same academic knowledge that is part of the formal half-day curriculum (coaching sessions for compulsory subjects) as opposed to activities that can help build behavioral skills, such as arts or sports, they risk consuming precious tuition time which could be allocated for alternative activities. Second, extra classes are often informal and not regulated. They place teachers in an undue position of power vis-à-vis parents. There is evidence that many parents are asked to make unofficial payments to schools and teachers (World Bank, 2012e; CECODES, VFF-CRT & UNDP, 2013). Third, as shown above, richer households are able to spend much larger amounts on extra classes and extra classes are mainly an urban phenomenon. There is, therefore, a risk that extra classes may deepen inequalities in learning, as opposed to bridging them. Fourth, there is a risk that extra classes serve exams which reward heavy preparation in terms of memorization and model answers, but which are not demanding in terms of creativity and critical thinking. Changing the nature of exams, especially those which act as gate-keepers, may help change some of the practices around extra classes (see below).

**Expanding formal full-day schooling may well be the best strategy to limit extra classes.** Although MOET has attempted to regulate the provision of informal extra classes, the regulation has not had much apparent effect. An alternative to regulating extra classes is to expand formal full-day schooling to reduce the time available for teachers to offer private tuition and to help make up for the revenue loss related to foregone extra classes. An expansion of full-day schooling can be financed by a mix of budgetary and private resources. Well-off parents who currently finance extra classes for their children could be asked to provide formal co-financing to schools for full-day schooling as opposed to informal payments to teachers who provide extra classes.

**There has already been a shift towards ensuring full-day primary schooling, but this does not yet cover the whole country.** The incidence of formal extra classes in rural settings is lower than in urban settings, and a significant share of children at primary level remains in half-day provision. This is why the MOET is promoting the expansion of formal full-day schooling. Moreover, it has launched a program to expand full-day schooling in primary schools in the 35 poorest provinces with support from the School Education Quality Assurance Program (SEQAP) co-financed by the World Bank, Belgium and the United Kingdom. A foreseen increase of tuition time under full-day schooling to at least 30 instructional periods by 2015 and 35 by 2020 would allow Vietnam to catch up with international standards (Cerbelle, 2013).<sup>xxiii</sup>

**A decline in student numbers in general education may open fiscal space to further expand full-day schooling and enrolments at secondary level.** Vietnam is beginning to undergo a dramatic demographic transition with declining cohort sizes among the young and expanding among the old. According to Vietnamese census data, the size of the population cohort below the age of 15 declined by 17 percent between 1999 and 2009. Data from the annual census of primary schools (DFA) presented in Figure 66 shows that the number of students in primary schools declined by 11 percent between 2005 and 2010. Fewer students need fewer teachers, and the number of teachers has also declined, although by less. While managing a decline in student numbers is challenging, it may open fiscal space. Excess teachers can be reallocated to help deliver full-day schooling or savings from a smaller teaching workforce can be reallocated to remunerate remaining teachers for longer instruction times. Beyond reallocating resources within primary education, the demographic decline may free up resources for expanding schooling at the secondary level, including progressively abolishing tuition fees at the secondary level and enhancing financial support to students from poor families.

**Figure 66: Vietnam is undergoing a dramatic decline in student numbers which opens fiscal space to afford more schooling**



Source: World Bank staff calculations using DFA2005 and 2010 data

## Better schooling

**What matters is not just more schooling but more quality schooling with a curriculum and teaching methods that foster the formation of higher order cognitive and behavioral skills.** Vietnam already has a successful education system that performs well in imparting core basic cognitive skills. This is also true for children from disadvantaged backgrounds that do not appear to be falling further behind in primary education. How to make schooling in Vietnam better, therefore, is not an obvious proposition. However, the Vietnamese authorities are already embarking upon a reform aimed at making schooling better – through a modernized, competency-based curriculum, more student-centered teaching methods and enhanced competency of the teaching workforce. Children from disadvantaged backgrounds are likely to benefit disproportionately from such reforms.

### Curriculum

**Vietnam’s current general education curriculum is more focused on teaching content and knowledge rather than on developing higher order cognitive and behavioral skills in students.** Vietnam’s general education curriculum, which was adopted in 2000, sets out, amongst others, strengthening students’ ability to cooperate and self-study as well as applying knowledge in practice as objective of education activity. However, the Ministry of Education and Training acknowledges that this does not go far enough to meet today’s needs. According to the Ministry, the problem with the current curriculum is that it remains too much focused on content and knowledge and not enough on providing self-study skills, the practical application of knowledge and the development of the cognitive and behavioral skills (MOET, 2010).

**A new general education curriculum is under development, providing a major opportunity to reorient the system.** The XI Congress of the Communist Party in 2011 pronounced that “Vietnamese education system should be fundamentally and comprehensively renovated in the coming years, aiming at standardization, modernization, socialization, democratization and international integration; renovating the curriculum, contents, teaching and learning methods; renovating the education management mechanism, building capacity for the teachers and training managers”. In response, the Ministry of Education and Training has launched an ambitious process of developing a new general education curriculum and new textbooks by 2015. It aims to define students’ essential competencies, which will then form the basis of educational objectives, standards, learning content, teaching methods and

assessment. The vision is to ensure the curriculum's coherence from grade 1 through 12 but with more broad-based content focus in basic education (primary and lower secondary) more electives in and upper secondary education. It should be nationally consistent but enable provinces to adjust a certain, flexible share of the curriculum. It will define half day provision but provide schools with guidance on how to arrange full-day provision. A strong emphasis is placed on modernizing teaching methods and student assessment.

**Vietnam's chosen direction for curriculum reform follows that chosen by other countries in EAP and worldwide.** For example, Singapore adopted the "thinking Schools, Learning Nation" initiative in 1997 with the purpose of promoting active learning and creative and critical thinking in schools. The initiative involved the explicit teaching of critical thinking and problem-solving skills, for example through a new secondary school subject called "knowledge and inquiry" and a reduction of subject content (Tan and Gopinathan, 2000). Korea's new national curriculum places more emphasis on critical thinking skills and creativity than in the past. In both cases changes to assessment methods and approaches were a critical element of the reforms. In Korea, university entrance exams use essays that test writing and logical thinking, while in Singapore university admission criteria were widened to beyond secondary graduate certificate and an entrance examination to results in project work in schools and extracurricular activities.

### *Pedagogy and teaching methods*

**While curriculum change and textbook reform is an important step, the resulting change in the teaching methods and instruction in the classroom is even more important.** In other words, implementation matters most, and requires enhancing the skills of both teachers and school principals and parental involvement. Translating a new general education curriculum into concrete change in the classroom will, therefore, require modernization of teacher professional development, both in-service and pre-service, and sustained investment in its roll-out across Vietnam's teacher workforce (see below). It will also involve the need to continue to strengthen student assessment. Vietnam is already testing new teaching methods that are more geared towards developing cognitive and behavioral skills. The Ministry of Education and Training has begun introducing the model of Escuela Nueva from Colombia into primary schools in Vietnam on a pilot basis (see Box 4.1) with the aim of informing the renovation of the general education curriculum, the teaching methods used and how to manage its possible roll-out.

#### **Box 4.1: Vietnam Escuela Nueva (VNEN)**

Escuela Nueva is a model of organizing schools and classrooms in a way that enhances the development of core cognitive and behavioral skills, such as problem solving and team work. It was launched in Colombia in 1975 by the Fundación Escuela Nueva, a Colombian non-governmental organization to help improve schooling outcomes among children in disadvantaged circumstances, and is now serving more than five million children across more than 16 countries worldwide. The Ministry of Education and Training has adapted the model to the Vietnamese circumstances and, called Vietnam Escuela Nueva (VNEN), is piloting it in close to 1,500 primary schools across the country with the financial support from the Global Partnership for Education (GPE). VNEN puts forward five key elements of innovative teaching:

- *Students at the center of the learning process*, with encouragement and support to develop their own learning goals and with the necessary tools and resources to realize those goals;
- *Cooperation and collaboration between small groups of learners* that lead to not only higher academic achievement, but also promotes independence, self-esteem, and inter-personal skills and relationships;
- *Active and reflective learning methods* that take place in a supporting classroom environment, encourage student inquiry and discovery, provide problem-solving opportunities, and generate maximal cognitive engagement to students interspersed with adequate resting periods;

- *Linkages in students' knowledge building as the basis of the pedagogical content* – new information is integrated with existing knowledge structures, including the use of innate human inductive skills, to derive patterns and apply them to solve problems;
- *Empowerment of the local community* to ensure that school life is integrated with the child's social and family life and that local cultural practices are valued in the school just as they are at home.

These innovations mean that teaching and learning in VNEN are quite different from the traditional model currently in use in schools in Vietnam. The main visible difference is the seating arrangement – children are seated in clusters of 4 or 5 students as compared to the row and bench seating in traditional classrooms. VNEN classrooms also contain more material to provide intellectual stimuli to the children – math and reading corners, a 'tree of words' to depict different groups of words, and community maps. VNEN encourages parents and the community to take part in the life of the school – especially in ethnic minority areas, where parents and others come to school to pass on their traditions.



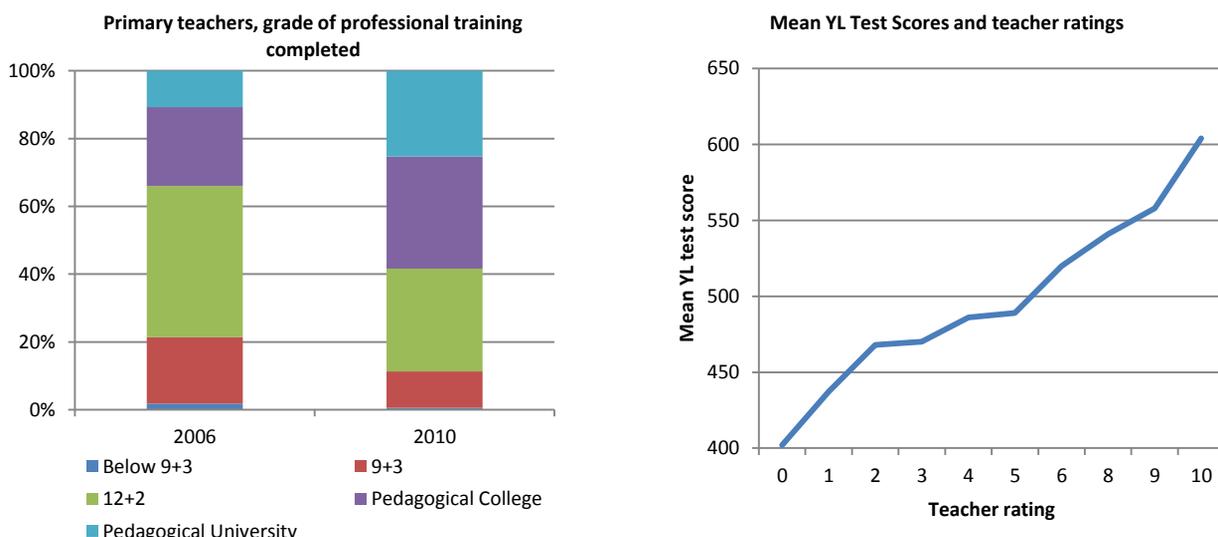
VNEN follows the same general education curriculum as the traditional classrooms, but presents the curriculum in a way that will better engage the students. For example, teaching under VNEN includes a 3-in-1 learning guide (textbook, workbook and guide together in one book) with more interactive exercises to complement the stories that make learning more fun and engaging for children. Teachers engage in less reading and writing on the board, and students spend more time on tasks. VNEN provides tools (i.e., materials, protocols, and methods) that enable even teachers of an ordinary level of ability to provide an enriching learning experience.

VNEN is planned to undergo a rigorous impact evaluation which will provide policymakers with in depth information on success factors which could be expanded system-wide as part of the planned general education curriculum reform.

Source: Epstein and Yuthas (2012); World Bank (2012)

**Teachers matter most for better schooling.** Enhancing the competencies of the teaching workforce is the single most important investment to create the preconditions for the formation of higher order cognitive and behavioral skills. First, the skills and abilities of the teaching workforce significantly affect the quality of learning in the classroom. Teacher education and qualifications have been found to be a positive and significant predictor of student achievement worldwide – and in grade five examinations in Vietnam (World Bank, 2011; (Rolleston, James, Pasquier-Doumer and Tran, 2013). Moreover, a well-qualified teacher workforce is likely better equipped to translate a changing curriculum into the reality of changed teaching methods in the classroom. Second, given that the aggregate teacher wage bill exceeds 80 percent of total education expenditures in Vietnam, improving what teachers do in the classroom is also the main investment into quality that the government can make.

**Figure 67: The primary teacher workforce has become better qualified in recent years and their capacity appears high**



Source: World Bank Staff estimates based on DFA 2006 and 2010 (left); Rolleston, James, Pasquier-Doumer and Tran (2013) (right)

**The quality of Vietnam’s teaching workforce is already an asset.** The primary education teacher workforce has become significantly better qualified in recent years. Nearly 60 percent of all primary school teachers now hold a college or university degree – almost double the share of 2006. The share of teachers with only 9 or 12 years of academic schooling followed by 3 or 2 years of teacher training has also declined significantly (see left chart in Figure 67 with data from Vietnam’s District Fundamental School Quality Level Audit, DFA). Increased teacher qualification matters: Evidence from the 2012 Young Lives school survey suggests that high performing schools have higher shares of teachers with a college or university degree. High teacher capacity is also evident in their capability to correctly assess their students’ abilities which is critical to help them provide the support that their students need (see Figure 67, right hand. Data from Young Lives shows a strong correlation between teacher ratings and mean test scores in mathematics for the same students). Moreover, teacher attendance in Vietnam is very high – another strong feature of the Vietnamese education system. Already high capacity and rising qualification of the teaching workforce can be expected to provide a sound foundation for further professional development related to the new curriculum and teaching methods.

**Investing in in-service professional development to equip teachers with the skills to teach a renovated curriculum is one of the most important tasks for Vietnam’s education system in the coming years.**

Vietnam can build on an increasingly well-qualified teaching workforce at the primary level through the use of in-service professional development. But there is a lot to improve: First, the evidence from DFA suggests that in-service professional development among primary teachers is limited and its use has been declining over recent years. Second, the content and methods of in-service professional development require modernization. The content will need to be reformulated in line with the changes that the new general education curriculum will bring. In reforming the method of delivery, a shift is needed away from the traditional cascading model where the Ministry of Education and Training trains trainers who train other trainers to deliver training in the summer months, toward one where capacities in provincial teacher training colleges are enhanced to provide more tailored programs all year round and with new teaching methods. A special emphasis will be required on equipping those teachers in the

most challenging circumstances, in particular those teaching in remote regions with children from ethnic minority background, with the right skills and tools.

**Teacher training needs to not only focus on how to teach curriculum content but also on how to impart behavioral skills.** Chapter 3 described how behavioral skills are associated with learning success and the acquisition of cognitive skills, including in Vietnam. Pupils with greater academic confidence make more progress, holding other factors constant (Yorke and Rolleston, forthcoming). An effective teacher, therefore, needs to be good at teaching mathematics, Vietnamese and other subjects and excel at helping students to build confidence and show good effort. Teacher effectiveness begins with attitude and motivation. Evidence from the 2012 Young Lives School Survey shows that teachers in high performing schools had more confidence that their students would succeed (and not be hampered by their family backgrounds) compared to teachers in less well performing schools with respect to the learning prospects of children from disadvantaged backgrounds. They were more likely to disagree with the statement that the amount that a student can learn is primarily driven by family backgrounds and more likely to agree that a student's home experience can be overcome by good teaching (Rolleston et al., forthcoming). A teacher with a more fatalistic or discriminatory attitude is unlikely to be able to effectively foster behavioral skills such as academic confidence and effort by students. Explicitly influencing teacher attitudes in teacher training and professional development, therefore, is likely to raise teacher effectiveness.

### *Assessment*

**Beyond curriculum and teaching methods, student assessment needs to be aligned with the objective of fostering higher order cognitive and behavioral skills.** Once the curriculum and standards in general education are adjusted to better reflect higher order cognitive and behavioral skills, the student assessment system needs to be equipped with the tools to help assess these skills in students, see how schools perform in imparting these skills and to hold schools and local education authorities accountable for results. Efforts to promote the formation of critical and creative thinking and behavioral skills in Singapore and Korea have involved changes to student assessment and university admission criteria.

**Educational assessment is firmly anchored in Vietnam's general education system and consists of the three key categories of assessment.** First, *classroom assessments* involve written and oral tests and marked assignments and homework are used in classrooms across the country with the objective of providing real-time feedback on students' performance to inform teaching. Second, *national examinations* for making high-stakes decisions about students' progression to the next level in the education system are firmly established and widely accepted as a mechanism for selecting students for further education, both at Grade 9 (in some provinces) and the school leaving examination at Grade 12 (whose results are used mainly for entry to vocational/professional colleges) and the university entrance examination. Further tests are being conducted according to provinces' preferences and capacities. Third, Vietnam has conducted *large-scale surveys* of grade 5 (2001, 2007 and 2011), grade 6 and grade 9 (2009) and, in 2012, participated for the first time in the Program for International Student Assessment (PISA) organized by the Organization for Economic Co-Operation and Development (OECD).

**The potential of using classroom assessments for improving student learning is not yet fully exploited.** While MOET has issued curriculum standards to guide the design and structure of classroom assessments, there is limited evidence of the utilization of these standards in test development in practice. Teacher capacity in using assessment techniques is one obstacle: Teachers often cite the difficulty in translating the standards into specific test items given that the standards are presented in a

very general way. Instead they often use textbooks and teachers' guides as the basis for devising tests. In upper secondary schools, teachers acknowledge that the tests they develop are heavily influenced by the structure and content of the high stake examinations (Grade 12 graduation and university entrance). Moreover, results from classroom assessments and examinations are not routinely utilized in schools to guide quality improvements in teaching, including by effectively communicating results to parents (see below). Further efforts to raise teachers' capacity in using classroom assessment and improved monitoring and feedback to teachers on the quality of classroom assessments are necessary to help make effective use of this important tool to promote quality of teaching (World Bank, 2009).

**The system of national examination is well established but its potential could be leveraged more.**

The General Department of Testing and Accreditation (GDETA) manages national examinations and is accountable to the Ministry of Education. The examination questions are based on an examination framework for each subject that tends to follow the relevant textbook in use in schools rather than the official curriculum. The grade 12 examination includes only multiple choice questions, while the University Entrance Examination also includes open ended questions. The university entrance examination is perceived as more rigorous and valid than the grade 12 test and is used by universities for their admission decisions. There are no mechanisms in place, such as pilot testing or pre-testing, to ensure the quality of the examinations. The quality of national examinations and public confidence could be enhanced by making publicly available high-quality, independent technical reports, and introducing systematic and transparent mechanisms to ensure quality at key stages of the examinations process, including systematic training on contemporary assessment practices of staff at GDETA and in the provinces as well as teachers. Quality could also be enhanced by independent research on the impact of national examinations, creating a permanent oversight committee, or conducting regular quality reviews (World Bank, 2009).

**National large scale assessments are perhaps the weakest link in the national assessment system.**

Large scale surveys at grades 5, 6 and 9 are not a formal element of the system. They have been conducted on an irregular basis with the financial and technical support from the World Bank and the Asian Development Bank. While significant capacity has been built for the management of national assessments, the quality of the grade 5 assessment in 2011 has been regarded as weak, underscoring the need to further enhance capacity. The key constraint is that the national assessments have been ad hoc and not part of a system. They have typically been managed out of project management units and do not have an organizational 'home' and have no standard system built around them.

**Student assessment needs to become more varied and involve test items designed to assess higher order cognitive skills such as creative thinking and problem solving.** Students' behavioral skills can be assessed by teachers and, like in some German states, by communicated regularly to parents in student report cards. More generally, student assessment should be reflective of the full curriculum, not just those things that can be easily tested, including through multiple-choice tests, such as mathematics. While multiple-choice items have much to recommend them in a situation where over a million students are being assessed, there is a need to broaden the testing approach if the quality of learning is to be improved. Students need to know that other abilities are also valued, such as being able to write, speak and listen in language studies and being able to design and carry out experiments in science or projects in geography. The introduction of more open-ended questions would allow for greater emphasis on higher-order thinking and problem solving.

## More involvement of parents and communities in schooling

**A prominent role for parents in schooling is important for several reasons.** First, parents have a strong interest in ensuring that their children receive a quality education. Providing them with information and a forum to voice views and advise the school can make the school more explicitly accountable to them for the learning progress of their children. Second, much learning takes place at home, and the home environment is an important contributor to learning success. For example, the availability of an own place to study at home has been found to be associated with higher learning achievement at grade 5 in Vietnam (World Bank, 2011). Parents need to be aware of the learning process and content in the school and how they can complement this by providing effective support to their children's learning at home – after school and during the long summer vacations. Third, a greater involvement of parents and communities will help make instruction more reflective of local needs, traditions and contexts. It will also help build bridges where there are cultural and other gaps between school and home, for example in the case of ethnic minority children which are taught by Kinh teachers. Finally, involvement in school can help raise parenting skills benefiting also any siblings not yet in school.

**The opportunities for formal parental involvement in schools beyond making financial contributions are limited in Vietnam.** According to Government regulations, schools can establish a parents' council for a class or the school as a whole but where they exist they have little formal influence. Such councils can channels parents' feedback to teachers on educational issues and allow parents to express their views to the principal on educational activities or school management. However, legally the parents' council has very limited weight on influencing the operation and monitoring the performance of a public school. Moreover, school councils do not even have to include parents as members. In practice, the role of the parents' council is often reduced to collecting parents' voluntary contributions to the school. In cases of dissatisfaction, the only way for parents to be heard is via going to the provincial or district education authorities, according to the Law on Complaints.

**A greater role of parents in the school usually goes hand in hand with the transfer of more decision-making power from education authorities to the school. But it is possible even within the current system of central standards and predominant decision-making at the province level.** Provinces and districts could cede certain decisions to schools that could be made with the involvement of parents. For example, schools could be entrusted with deciding the arrangements for full-day schooling and parents could contribute to this decision-making. Parents could advise on how to incorporate extra classes into the formal program and how to arrange afternoon activities under formal full-day schooling. While there are different models of what roles to assign to parents and community members, international experience suggests that parents also need sufficient information and capacity to be effective participants in school governance.

**Parental advice on some aspects of budgetary decisions such as the use of school grants is usually a first step in the direction of greater involvement.** Vietnam has already made first steps toward greater school-based management and in enhancing the role of parents in primary and secondary schools. More could follow. The SEQAP project involves the use of school improvement grants whose use is decided by the school as opposed to by provincial or district authorities. This could be augmented with a greater role of parents in deciding on the grants' use. Schools participating in VNEN have the freedom to involve parents in the learning process and to contribute to learning content, for example through introducing local ethnic minority traditions in the program. Augmenting these first steps by providing a greater

emphasis on a decision-making role for parents involving more information and enhanced parental capacity would be a logical next step.

**A greater involvement of parents and communities in schooling is possible even in disadvantaged communities.** Vietnam's experience with SEQAP, VNEN and earlier pilots involving ethnic minority teaching assistants show that greater involvement of disadvantaged parents and communities in schooling is possible and important for the educational process. Experience from rural communities in Pakistan shows how school report cards for parents in very low capacity contexts were successful in helping to raise achievement scores for initially poor performing schools (Andrabi, Das, and Khwaja, 2009).<sup>xxiv</sup>

## Summary

**Vietnam's general education system is well placed to transition to a new phase in Vietnam's education development from expanding access to deepening quality.** After two decades of successful expansion in access to general education, greater emphasis now needs to be placed on ensuring that more children learn and acquire the higher order cognitive and behavioral skills demanded in Vietnam's labor market. Progress in this direction will require further expanding access to secondary education and expanding instruction time through full-day schooling, thereby also reducing the prevalence of informal extra classes. Falling student numbers due to declining age cohorts provides an opportunity to means that budget resources can be freed up to cover additional costs associated with expanding enrolments in secondary education and full-day schooling, including progressively abolishing tuition fees at a secondary level. Second, more schooling should mean better schooling through a competency-based, as opposed to content-based, general education curriculum coupled with the right teaching methods to stimulate creative and critical thinking in primary and secondary school students. Enhanced in-service teacher training capacity will be critical to equip Vietnam's teaching workforce with the capabilities to make a new curriculum a reality in all classrooms in the country. Lastly, a greater involvement and outreach to parents will help them to hold the school more explicitly accountable for children's learning success and to make sure that children get the best possible learning support at home.

## In depth: Education and skills development in Korea

Korea is a useful case study for Vietnam. Both countries' education systems are rooted in and are strongly influenced by Confucianism. Korean and Vietnamese citizens both view the pursuit of education as an important social value, and industrialization and economic development strategies emphasize human resource development. Korea's experience in skills development is, therefore, of interest to Vietnam and to draw lessons drawn from Korea's distinguished achievements, such as high scores in the OECD Program for International Student Assessment (PISA) and high enrolment rates at all levels of education. On a historical perspective, Korean education and skills development reforms can be summarized into the following table:

**Table 6: Korean education development focus, policy goals, major concerns and resources by different periods**

Periods	1948 – 1960	1961 – 1980	1981 – 2000	2001 – present
<b>Education Development Focus</b>	Reconstruction of educational infrastructure	Education for Economic Growth	Decentralization of Education – facilitate local autonomy	<ul style="list-style-type: none"> <li>Restructuring Education System</li> </ul>
<b>Policy Goal</b>	Universal Primary Education (Compulsory)	<ul style="list-style-type: none"> <li>Universal Secondary Education</li> <li>Supply technical manpower, enhance technical and vocational training</li> </ul>	<ul style="list-style-type: none"> <li>Universal Tertiary Education</li> <li>Quality Improvement</li> <li>Vocational training reform</li> </ul>	<ul style="list-style-type: none"> <li>Lifelong learning</li> <li>Human Resource Development</li> <li>Quality improvement of public schools</li> <li>Support Research (Tertiary Education, TE)</li> <li>Regional development (TE)</li> <li>Human Resources Development (TE)</li> </ul>
<b>Major Concerns</b>	Access to education	Growth of quantity – efficiency and control	<ul style="list-style-type: none"> <li>Quality</li> <li>Autonomy</li> <li>Accountability</li> </ul>	<ul style="list-style-type: none"> <li>Competitiveness in globalization</li> <li>Knowledge society</li> </ul>
<b>Resources, Tools</b>	Using Foreign Assistance	<ul style="list-style-type: none"> <li>5 years planning long-term planning</li> <li>Law of <i>Local Education Financing Fund</i></li> <li>Foreign loans to support TVET</li> </ul>	<ul style="list-style-type: none"> <li>Presidential Commission for Education Reform</li> <li>1995 Education Reform</li> </ul>	Education and Financial Support for Tertiary Education

Source: Understanding Korean Education, 2007

Education development at the initial stage of Korea's post-war period focused on promoting literacy through enforcing the universalization of primary education (1945-1960). The main focus for educational development during that phase was on reconstruction of educational infrastructure. Educational programs initially launched during 1945-1948 and the formal establishment of primary education after the proclamation of the Republic of Korea in 1948 aimed at reducing the high illiteracy rate (more than half of the population aged 13 and above were illiterate at the time). Korea also established the 6-3-3-4 linear school system at that time: The 6-3-3-4 school system includes four basic school ladders: six years of elementary education, three years of middle school education, another three years of high school education, and four years of higher education. This system prevents dead ends in

education careers and introduces multiple pathways to tertiary education. Lastly, primary school teachers' qualification requirements were upgraded from upper secondary school diploma holders to four year teachers' college graduates.

In the period of 1961-1980 the emphasis shifted towards an expansion of vocational high school and strengthening of science and technology disciplines. Korea was experiencing strong economic growth and a shift of employment from agriculture toward capital-intensive heavy and chemical industries during this phase. Simultaneous population growth and urbanization generated increasing social demand for education. To strengthen education, the government further expanded primary school enrolment and promoted vocational high schools and science and technology education. Expanding primary education enrolment resulted in over-crowded classrooms and also raised competition among students for seats in secondary schools. Therefore, in order to relieve burden, Korea moved toward automatic grade promotion and abolished the entrance exams for lower and upper secondary schools in 1969 and 1974 respectively.

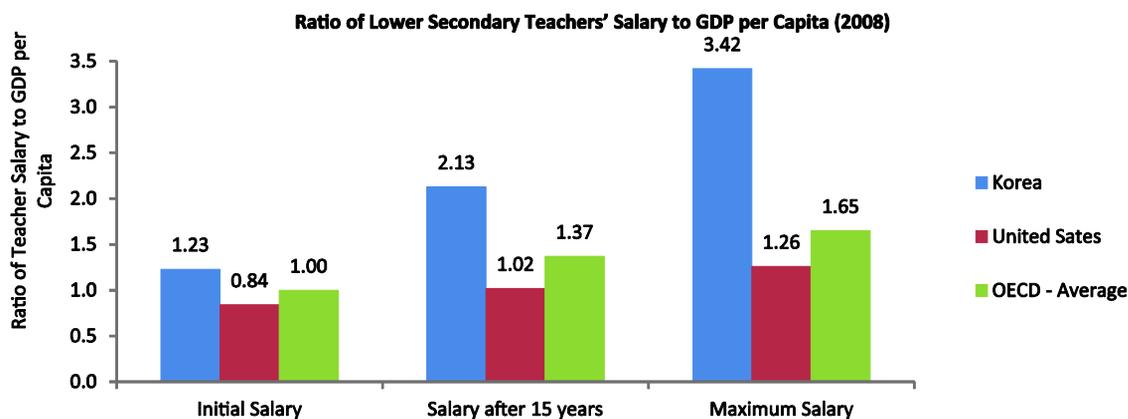
Between 1981 and 2000 Korea decentralized its educational administration and shifted from bureaucratic control to increased local education accountability to stimulate improvements in education quality. Increasing numbers of secondary school graduates in turn increased the demand for tertiary education. Private tutoring began to flourish. In addition, a widening income gap during this period resulted in unequal access to education. Education reforms aimed to eradicate private tutoring and relieved students from competitive exams, and further lifted government's control over university enrolment. Universities were granted more autonomy in recruiting students in 1995. A Presidential Committee for Educational Reform summarized Korea's new direction for educational development, including more emphasis on learner-centered education, diversification of educational programs, autonomy and accountability of school operations and a new information system; and a new mechanism to allow open access to results of school education evaluation (Understanding Korean Education, 2007).

The East Asian financial crisis and globalization forced Korea to refocus on strengthening the nation's competitiveness through education since 2001. Reforms to Korea's education system have aimed at responding to two challenges: (i) supporting the nation's competitiveness in the global market; and (ii) meeting the human resource development needs. The first priority of the government has been to reform higher education in a way that enhances its relevance and the international competitiveness of Korean universities as well as to strengthen vocational education and training (VET) so as to reduce an overreliance on tertiary education. In improving the nation's competitiveness and in preparation for the advent of becoming a knowledge-based society, life-long learning is considered to be an integral part of the educational system.

Korea has had the advantage of having been able to sequentially improve its education system, and shifting the gear slowly toward rigor and responsiveness to the economic development over the decades. The journey for education development sets an interesting example of how a growing economy could achieve national education success in quantitative expansion and qualitative improvement simultaneously without a trade-off. It also presents how an education system develops from an elite to a mass system and finally to universal access to all and how it can enhance a country's economic development (Jones, 2013). Today, there are a number of strong features of the Korean education system that stand out:

First, high teacher salaries relative to OECD standard, and relative to GDP per capita in Korea: Well-trained and well-remunerated teachers tend to be one of the driving forces for improved quality of education. Figure 68 presents the ratio of the average salary of a teacher in lower secondary education relative to GDP per capita in comparison to that of the United States and the OECD country average in 2008. Korean teachers are significantly better paid than their peers elsewhere in the OECD.

Figure 68: Ratio of Lower Secondary Teachers' Salary to GDP per Capita (2008)



Source: Jones (2013)

Second, automatic promotion and singular track 6-3-3-4 education system: Korea’s no-dead-end tracking has ensured that 84 percent of secondary school graduates transitioned to college in 2008. The singular track also ensures that all secondary school graduates, whether from an academic or vocational school, are equally qualified to apply to universities. Students are not being streamed into vocational programs that might restrict them from entering academic tertiary programs.

Third, a shift from rote memorization to knowledge based education, steering toward the focus of students’ critical thinking and problem solving skills: As Korea entered the 20<sup>th</sup> century, the focus of its education system was no longer only on rote memorization of academic content, but was broadened to also impart broader cognitive skills such as problem solving and critical thinking which have helped Korean students scores highly in PISA.

Fourth, Korea’s education system is well funded: Total spending on education in Korea is the second highest in the OECD as a share of GDP spending on education (8 percent in 2009). This includes a significant share of private sector contributions, accounting for 40 percent of total education spending (above 50 percent for pre-primary, 25percent for non-tertiary and more than 70 percent for tertiary education). But spending is not just high but also efficient: Relatively higher teacher salaries are possible also due to slightly larger average class sizes than elsewhere.

Despite the successes of Korea’s education system, there are remaining weaknesses. Prominent among them is private tutoring which needs to be further regularized and restricted in the school system. Reliance on private tutoring has been one of the biggest issues in the Korean education system. Private tutoring is expensive and the reliance on it creates inequalities among students due to differences by socioeconomic status (Jones, 2013).

Korea has also recently focused its attention to further improving its VET system to address the issue of overemphasis on tertiary education (with around 70 percent of high school graduates moving on to tertiary education). Korea’s employer federation estimates a 30 month and US\$100,000 cost to train

new tertiary graduates to prepare them for the skill requirements in their jobs. It reflects a reality that students are lacking vocational skills despite strong academic achievements. Vocational education and training has had a long history in Korea, dating since the 1960s. In the 1990s, Korea launched a special VET high school program involving two years in school followed by one year of workplace training, inspired by the German dual system apprenticeship model. However, the number of schools and students choosing this path started to drop a few years after its introduction (Lee, 2007) and the program was abolished.

More recently, in order to address demand from industry, the government decided to promote innovation in VET through “meister high schools” to offer customized employment-linked vocational training programs and to reinforce demand-orientation (Park, 2011). As part of the reform, 21 meister high schools were founded to train students to become skilled workers in industries such as new media, energy, machinery, mechatronics, and telecommunication. The plan is to expand the number of such schools to 50 by 2015. Moreover, curricula and teaching methodology started to incorporate a competency-based approach. A National Competency Standard (NCS) was developed in 1996 which sets standards that define the knowledge, skills and quality required of works in specific occupational fields to set systematic criteria based on which individuals may be educated and trained.

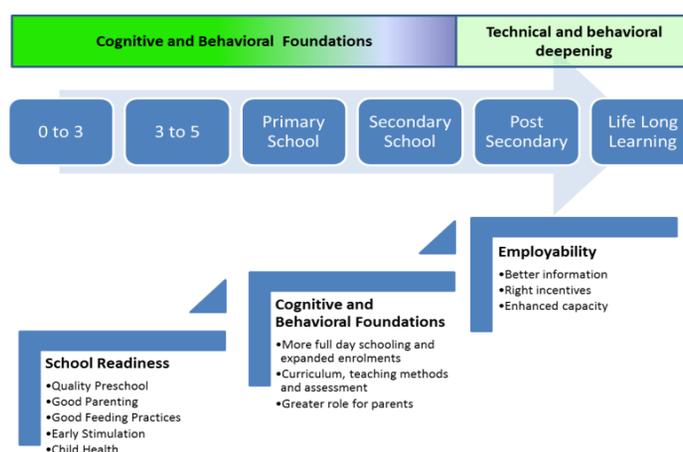
The reform also entailed a further strengthening of private sector engagement and collaboration among different ministries to help eliminate the mismatch of skills affecting VET graduates. The Ministry of Education and the Ministry of Labor collaborate to pursue joint and consistent policies. Similarly, collaboration extended to the private sector and large corporations, small and medium-sized companies, sectoral councils, and trade associations.

## Chapter 5: Technical skills to promote employability

**Higher education, vocational training and on-the-job training are the key avenues for acquiring technical skills that help workers to succeed in their chosen profession.** Higher education prepares graduates for white collar jobs, while vocational training provides students with applied skills required for vocational tasks. On-the-job training deepens the technical skills acquired in formal education and training and adapts them to the individual work place.

**While higher education is booming in Vietnam, vocational education and on-the-job training are less popular.** Higher education is viewed as the key driver of raising the quality of human resources by the population, firms and the government alike. Enrolments have expanded dramatically over the recent decade, though they remain low in regional comparisons. Moreover, there are concerns about quality, particularly given the fast pace of expansion. Vocational training is less popular than higher education but still absorbs large numbers of young people. Employers are also concerned about the relevance of what students learn in higher and vocational education. Many firms report that they provide on-the-job training. However, most of this appears to be internal training, while external training is limited.

Figure 69: Step 3 in Skills Development: Developing technical skills for employability



**Technical skills development in Vietnam suffers from disconnects between universities and vocational schools, firms, workers and students.** These disconnects are driven by gaps in information, low capacity and poor incentives. Producing the technical skills that employers are looking for requires: (i) an entirely different model of coordination between firms and education and training providers, (ii) better information for prospective students, better trained lecturers, teachers and managers of universities and vocational schools, and (iii) more accountability for results to complement increasing autonomy. This chapter provides a snapshot of the state of higher and vocational education and on-the-job training and lays out options for improving technical skills development through *improved information*, the *right incentives* and *enhanced capacity*.

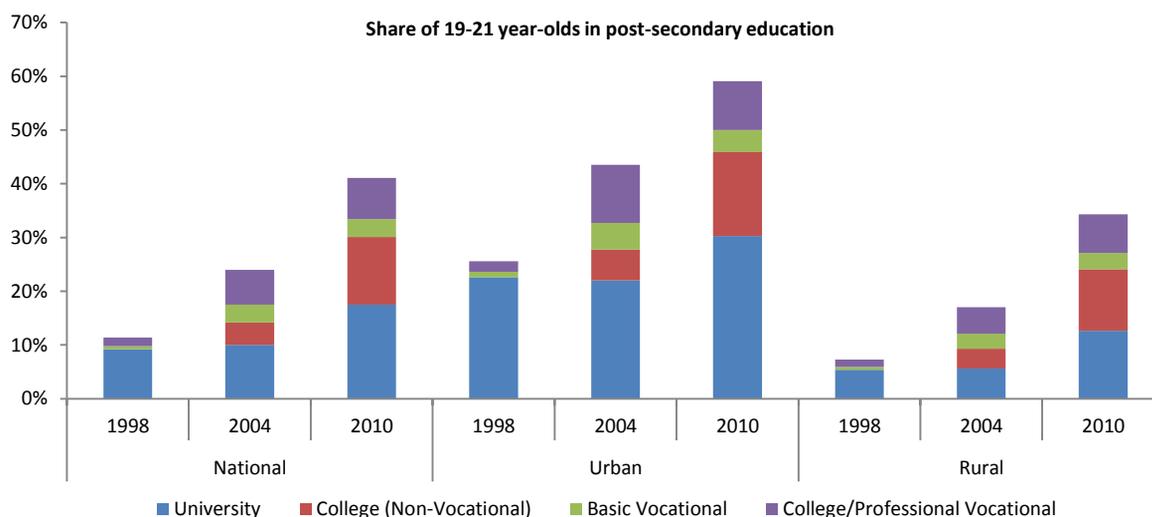
### Technical skills development in Vietnam at a glance

**Building on long traditions, higher education has grown dramatically over the last decade.** A thousand years ago, the first university (Temple of Literature) was established for the son of the King. Nowadays,

one in four aged 18-24 is enrolled in some form of higher education, and one in two high school graduates finds their way to higher education. The number of higher education institutions doubled to more than 400 over the last decade, including new establishments and upgraded former colleges. All but one of Vietnam's 63 provinces and cities has at least one higher education institution. Around 80 institutions are private, representing a quarter of college enrolment and 15 percent of university enrolment. Overall, Vietnam's universities and colleges serve over 2.5 million students, a 31 percent increase over the last decade.

**Post-secondary vocational education and training has been less popular than academic higher education.** While academic tertiary education in colleges and university has seen dramatic expansion in recent years, enrolment in vocational education and training is both lower and more stagnant. Figure 70 presents the shares of young Vietnamese aged between 19 and 21 who are enrolled in post-secondary education between 1998 and 2010. It documents the expansion in academic higher education. Vocational enrolments dramatically expanded between 1998 and 2004 but stopped expanding and remained at lower levels than academic higher education after 2004. Clearly, the dynamism in the tertiary sector is confined to universities and colleges, not to vocational education and training institutions.

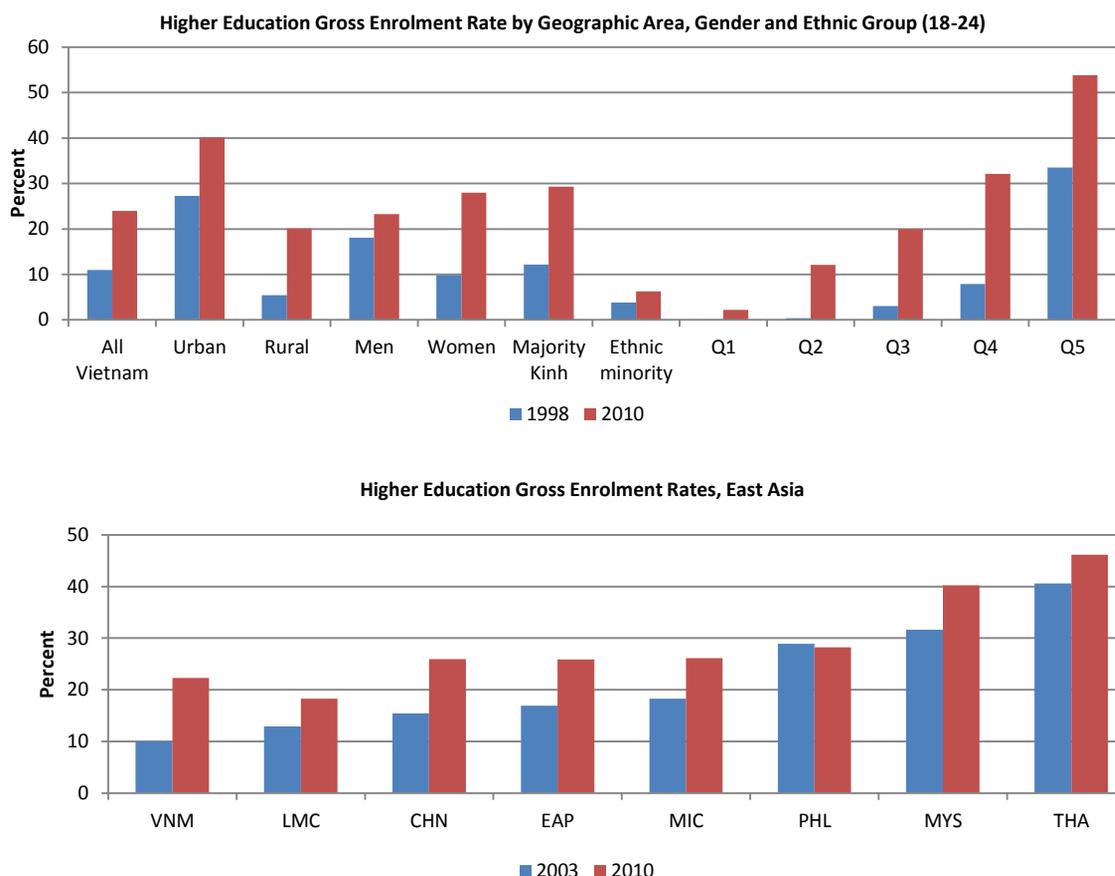
**Figure 70: Enrolment in post-secondary vocational training institutions is lower than in university and colleges**



Source: World Bank Staff calculations using the 1998, 2004 and 2010 VHLSS surveys. The figure shows the fraction of 19-21 year olds enrolled in vocational training, college or university. In 1998, it is not possible to separate out university and college therefore all college and university admissions are included in the university figure.

**Higher education enrolments are unequal across socioeconomic groups.** Figure 71 presents higher education gross enrolment rates among people aged 18-24 by geographic area, gender, ethnic group and wealth quintile. It documents a considerable variation in access to higher education across the country and socio-economic groups. Gross enrolment rates at 40 percent in urban areas are double those in rural areas. Women, who were behind men in terms of enrolment in 1998, have surged ahead. The gap between majority Kinh and ethnic minorities has deepened. Lastly, access remains unequal. Though enrolments of individuals in the second, third and fourth expenditure quintile households have surged, they remain considerably behind those of individuals in the richest quintile. Inequalities in access to higher education are predominantly driven by inequalities earlier in the education system which leads to a premature drop-out. But capacity to pay tuition also remains a barrier (see below).

Figure 71: Tertiary gross enrolments are rising fast but remain low compared to other East Asian countries

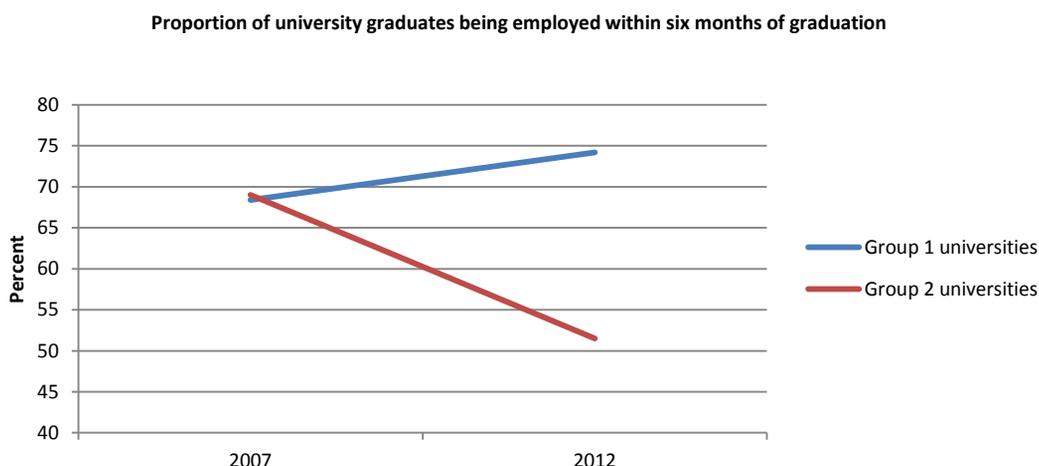


Source: World Bank staff estimations using VHLSS, various years (top), Edstats (bottom). Note: “LMC” stands for Lower Middle Income Countries and “MIC” for Middle Income Countries

**Enrolment is still low compared to neighboring countries, suggesting that Vietnam can expect further expansion.** Despite the surge in gross enrolment rates in recent years, enrolments in Vietnam remain low compared to its neighbors. Figure 71 shows that Vietnam’s gross enrolment rates compare favorably to the lower middle income country average (LMC), but they trail those in competitor economies such as China, Philippines, Malaysia and Thailand.

**Returns to higher education are high and employment prospects of graduates in urban areas are good, though less so in rural and remote areas.** As shown in chapters 1 and 2, returns to higher education are high, suggesting continued excess demand over supply. Overall, pursuing higher education remains a rewarding choice. This is particularly true for graduates from prestigious universities predominantly in urban areas of agglomeration, though less so for those in rural, remote and disadvantaged regions. Evidence from tracer studies conducted in close to two dozen universities involved in the Higher Education 2 Project show that graduates from 17 well-established universities (called “groups 1”) had a close to 75 percent chance of being employed within six months of graduation in 2012, up from below 70 percent in 2007 (Figure 72). In contrast, graduates from 5 universities in disadvantaged areas, remote mountainous regions and the Mekong Delta (called “group 2”) saw a significant decline in employment prospects over the same period. This is consistent with the finding presented in chapter 1 of considerable employment of young higher education graduates in agriculture in rural areas.

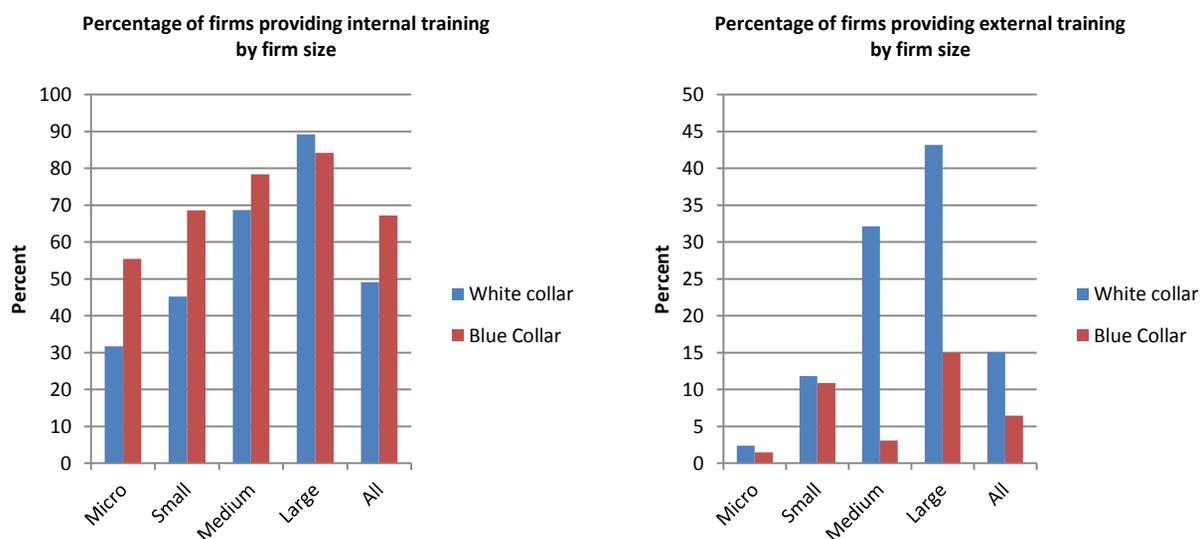
**Figure 72: Tracer studies show good employment prospects for higher education graduates in urban, but worse in rural areas**



Source: World Bank (2013). Group 1 universities consist of 17 of the most established, mainly urban universities. Group 2 consists of 5 universities in disadvantaged areas, remote mountainous regions and Mekong Delta

**Many firms provide on-the-job training to their workers, but not equally to all workers.** As discussed in chapter 2, Vietnam is encountering skill gaps and shortages in the context of expanding enrolments in universities and in vocational schools. Not surprisingly, therefore, some employers seek to equip some, though not all, their workers with job- and firm-specific skills through on-the-job training at the work place. As Figure 73 (left panel) indicates, more than half of all firms reported in the STEP employer survey that they provided internal training in the 12 months prior to the survey. In line with the picture from across the world, larger firms conduct training more than smaller firms. More firms are providing internal on-the-job training to blue collar workers than to white collar workers. The picture changes when looking at external training (right panel). The difference between large and smaller firms becomes even starker and significantly more firms provide external training to white collar than to blue collar workers.

**Figure 73: Many firms provide on-the-job, but mainly internally, and external training is concentrated among larger firms**



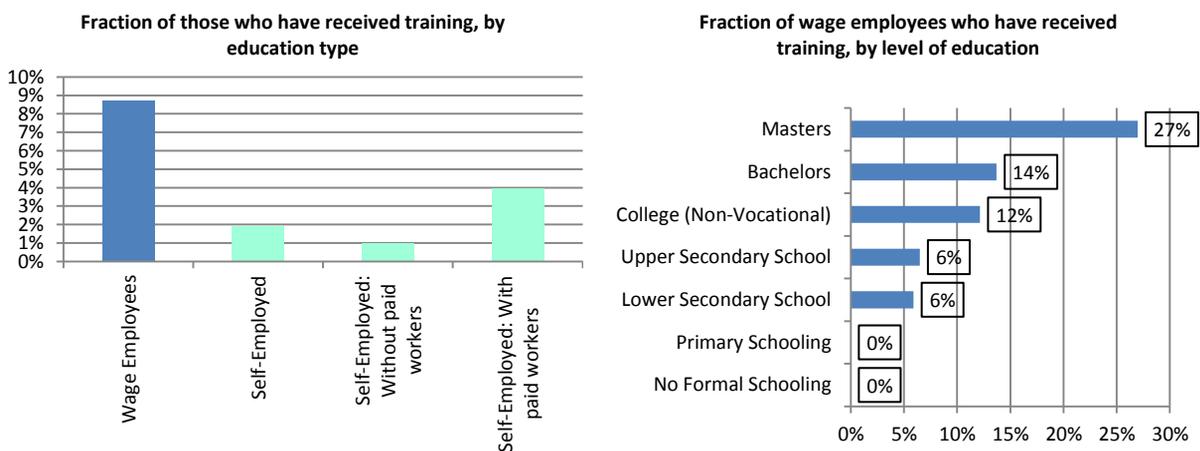
Source: World Bank staff estimations using 2011 STEP Employer Survey

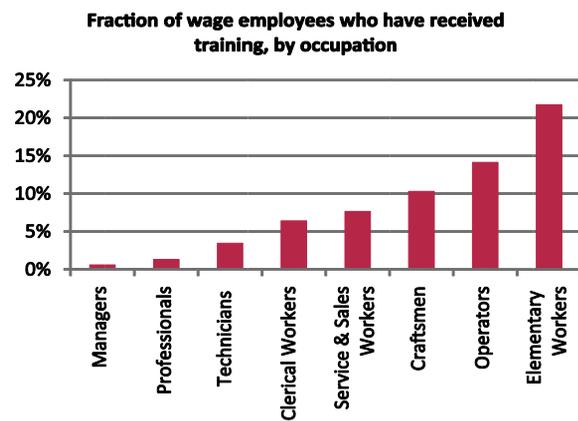
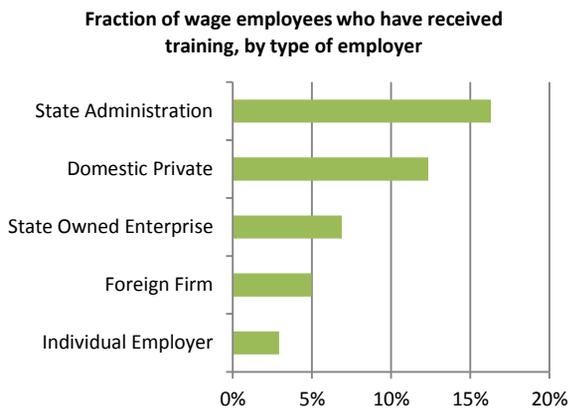
**High shares of firms that provide on-the-job training do not mean that large shares of workers benefit from training.** Training incidence appears considerably more limited when workers are asked about the training they received. Only less than one in ten wage employees reported to have been in any training lasting for at least 5 days in the last 12 months (Figure 74, top left). The data are not fully comparable because the questions are different (the question in the employer survey was not limited to a minimum of five days in the last twelve months). But this is in line with the picture in many countries where a firm may report training, but not all workers in those firms participate from training. Even among wage workers who received training, the initially better educated and those in more advanced occupations were more likely to have been trained, confirming the training bias found in the employer survey data and evidence worldwide. Curiously, wage employees in state administration, domestic private firms and even state-owned enterprises (SOE) were more likely to receive training than workers in foreign owned firms.

**As a fast-growing economy, Vietnam should not be concerned about the existence of skills gaps and occupational skill shortages, but about the ability of the skills development system to overcome them.**

Skills shortages and gaps are indicators of a dynamic economy which creates new, more skill-intensive jobs. The real concern is whether the education and training system is equally dynamic in adjusting quickly to supply graduates with the technical skills to keep up with the constant and accelerating evolution in the demand for technical skills. One indicator of responsiveness to expanding demand is the strong expansion in enrolments and in the supply of universities, colleges and vocational training institutes. But gross enrolments in tertiary education remain lower than those in neighboring countries, suggesting that supply can and will need to expand further. Moreover, another indicator is whether the rising numbers of graduates and job applicants bring the skills that employers demand. The evidence provided in this report suggests that they often do not.

**Figure 74: Few wage workers actually participate in training and mostly the better educated**



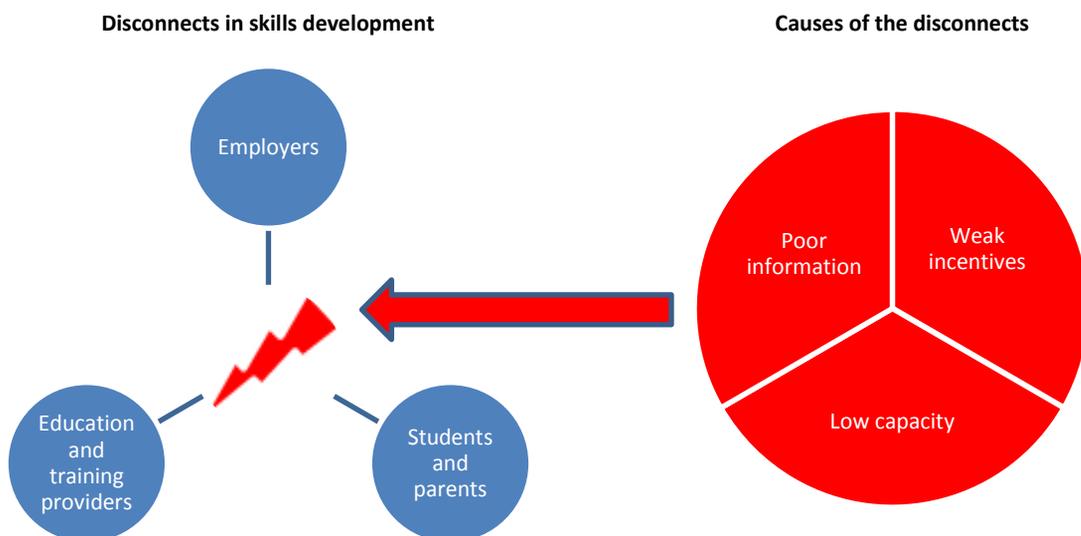


Source: World Bank staff estimations using the STEP Household Survey data. Individuals are asked if they have done any training lasting at least 5 days in the last 12 months. Estimates are based on individuals who have worked for at least 46 weeks in the last year in their main job.

### Step 3: Building job-relevant technical skills through a more connected system

Vietnam’s skill development system today is not as responsive as it needs to be and is suffering from “disconnects” between employers, students and universities and vocational schools. An unresponsive, under-performing skills development system is a disconnected system in which actors make choices and act in isolation, and do not sufficiently interact with each other (Figure 75). Schools and universities may offer programs and produce graduates with skills that do not fully reflect the needs of the labor market. Students and parents may not be demanding the types of programs or teaching methods and content that would give them the skills that they or their children need to succeed in the labor market. Like many countries around the world, Vietnam suffers from such system disconnects.

Figure 75: Skills development is not working as a system of connected actors



Source: Authors’ illustration, adapted from World Bank (2012c)

**Disconnects result from imperfect and asymmetric information among actors and their inadequate capacity and weak incentives to make good use of information.** Information, incentive and capacity deficits make the system less dynamic in responding to the evolving technical skill needs in the economy. They reflect what economists call “market failures”.<sup>xxv</sup> The government plays an important role in helping

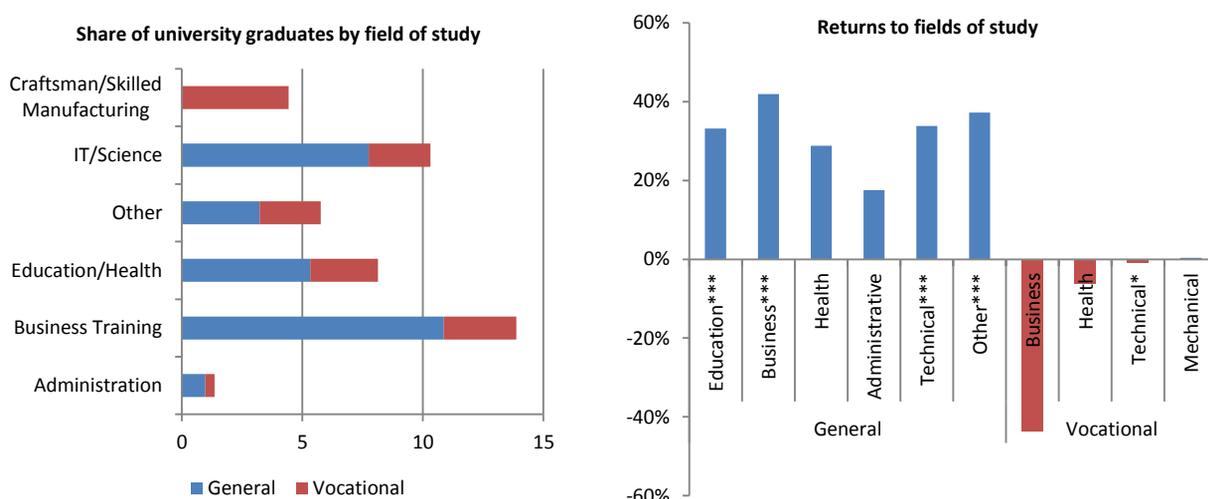
to overcome these market failures. But rather than planning and managing the education and training system centrally and top-down as in the past, the government should help to overcome the disconnects through empowering students, universities and schools and firms to make good decisions – by facilitating the flow of information, providing the right incentives to schools and universities to be responsive to information and through carefully investing in raising their capacity. Interventions on these three drivers of system responsiveness are mutually reinforcing and should be conducted in parallel.

## Better information

**Information is the oxygen of responsive skills development systems.** Education and training providers cannot make good choices on the programs to develop and offer without good information about employers’ skill needs, conditions in the labor market and returns to certain fields of study. Students and parents need the same information to make good decisions about which school or university and which study program to choose. Furthermore, (prospective) students also need information on the quality of education programs and employment success of graduates. It appears, however, that in Vietnam today information gaps are limiting many students’ ability to make good choices and education and training providers’ ability to offer attractive programs and training content.

**In urban areas prospective students appear to have good information on the most attractive and rewarding fields of study.** Figure 76 presents the share of graduates by field of study (left panel) and wage returns by field of study for both general and vocational tertiary education. Most university graduates in urban Vietnam have degrees in business, information technology (IT) or science and education and health. General tertiary degrees in education, business and technical fields of study as well as vocational degrees in health carry the highest returns. This provides some evidence that (prospective) students in urban areas make rational choices based on information on returns across different fields of study. They graduate in those fields with the highest returns.

**Figure 76: Many graduates majored in those fields of study which have the highest returns**



**Source:** World Bank staff estimates using STEP HH survey. The returns to education are estimated using a mincerian wage regression framework and include controls for demographic characteristics and experience. The sample is restricted to wage workers who have completed upper secondary or above, and the returns estimated capture the return to continuing to higher education only having completed a general upper-secondary education, by the field of study chosen. The subjects studied are separated into general and vocational training, to allow for a comparison between vocational and general higher education. “Technical” includes information technology and engineering. “Mechanical” training includes auto or home appliance repair, building and construction trade and manufacturing. “Other” includes those who have a general or no specified field, agriculture, social and behavioral studies including media, tourism, arts and humanities, personal care services, public order and safety and “other”. (\*\*\*) (\*\* and \*) denote statistical significant at a 1%, 5% and 10% level respectively. N=882.

**However, prospective students in rural areas tend to have more limited information when making education and job choices than students in urban areas.** Evidence from a participatory monitoring of urban poverty in Hanoi, Hai Phong and Ho Chi Minh City in 2012 covering recent school graduates from rural and urban areas shows variations in the information sources and influences used to make education and career choices (Oxfam and Action Aid Vietnam, 2012. See Table 7 and Box 5.1). Urban students reported relying on many more and different information sources when making choices, including their own research using newspapers and the internet, guidance from schools and a guide to higher education from MOET. In contrast, rural students reported fewer information sources and suggested that they had limited objective information on the employment prospects of studying certain majors or at particular schools. Rural students relied most heavily on the higher education manual provided by the MOET, and did not report having had any education or careers guidance from their schools. A highly educated labor market participant from a rural area suggested that the lack of information put students from rural areas in a disadvantaged position: “In this place [Ho Chi Minh City], parents reviewed different colleges several years before their children take the entrance exam. However, in rural areas, our parents are busy all the time and often tell us to choose any college that we like. They cannot give us any career advice even if they want to do so. Our personal experiences show us that we have more disadvantages than our urban peers.”

**Table 7: Ranking information sources used to make study decisions among students at urban and rural areas**

Rank	Urban students	Rural students
1	Newspapers, internet	The book "what a student should know" of the MOET
2	Guidance from the youth unions, schools	Relatives with strong academic background who are working at the urban areas
3	The book "what a student should know" of the MOET	Internet
4	Parents	Flyers of some universities and junior colleges
5	Relatives with strong academic background who are working at the urban areas	
6	Direct consultation from universities	
7	Flyers of some universities and junior colleges	
8	Student career fairs	
9	Programs like "being our student for one day" of some universities	

Source: Oxfam and Action Aid Vietnam, 2012. Discussion with four youth groups in two blocks in Ward 6 (HCMC)

**The urban-rural information gap suggests the need to enhance connectivity of prospective students in rural areas.** In addition to facing more limited access to good information, prospective students in rural areas are also more vulnerable to misinformation by tertiary education and training institutions and struggle to make a call on the quality of programs and institutions on offer (see Box 5.1). Enhancing information and improving choice will require interventions along the following lines: First, prospective students in rural areas need an expanded information base, most prominently through better internet connectivity but also from better labor market information. Evidence from the 2012 Young Lives School Survey shows that schools in rural and remote areas are significantly less well connected to the internet and are less likely to make use of computers than urban schools (Rolleston, James, Pasquier-Doumer and Tran, 2013). It should be the other way around: improved internet connectivity can help overcome the information gap resulting from remoteness. Second, prospective students in rural areas need support in making good use of expanded information, including through more tailored and

individualized career advice in schools and schools' outreach to businesses to help students obtain a 'real life' perspective.

#### **Box 5.1: Prospective students in rural areas: limited objective career guidance information**

Youth groups in Hanoi, Hai Phong and Ho Chi Minh City who participated in a qualitative study indicated that colleges used to main approaches to provide information to students at school:

- *Direct consultation:* In collaboration with Ho Chi Minh youth unions/board of rectors, universities and colleges visited upper secondary schools to deliver presentation about their schools and provide advice to students. This approach was more prevalent in urban areas, although it also occurred in some schools in rural areas.
- *Flyer distribution:* Universities and colleges collaborated with school staff to send flyers to classrooms, or to send the relevant information through commune people's committees. This approach was applied in both urban and rural areas.

Among the students that graduated from university or college, some suggested that, if they had had more information about the labor market when making their choices, they would have chosen other schools:

*"They sent flyers to us every year. All of us had their flyers. We did not know anything about their training quality, but they presented all nice things, such as good training quality, employment opportunities guaranteed. After a few years I learned that it would be stupid to trust their consultation."*

(Skilled youth group, Kim Chung, Hanoi)

The information gaps among rural and poorer students appeared to be even greater. Rural students report that the limited information base on which they were making their choices resulted in some students not continuing to higher education and others choosing the wrong path.

*"Our secondary school teachers gave no career advice for us. We did not know what to do after graduating from this school."*

(Migrant worker, Kim Chung - Hanoi)

*"In recent years, if you ask secondary school students [from rural areas] which field they chose to study, the common answer will be 'business management' and 'accounting'. They follow social trends without considering the professional outlook of disciplines when there are too many people entering same field of study. Things are different here in the cities: some study economics, foreign trade; some students, who have average performance, choose mechanical engineering, electricity, etc. There are highly-marketable jobs in urban areas, meaning that their employment opportunities are more guaranteed."*

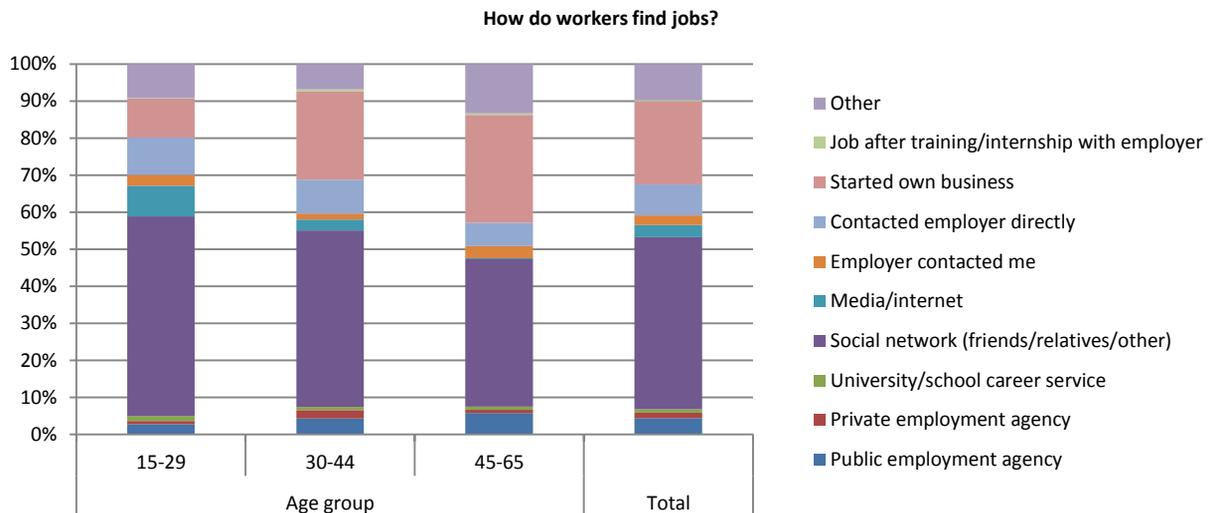
(Skilled youth group, block 25, HCMC)

Source: Oxfam and Action Aid Vietnam (2012)

**The labor market information system is weak overall, leaving both prospective students and education and training providers short of information to base their choices on.** Vietnam now has a quarterly, nationally representative labor force survey which provides up to date information on national employment trends. As important as this is, actors are short of disaggregated and localized information on employment developments by sectors and type of work. Big cities have more developed labor market information systems with real-time vacancy data. Private employment agencies there, who often using online tools, provide a more detailed picture of employment patterns. But such information is often lacking in rural areas. Likewise, STEP evidence shows that most graduates look for, and find, jobs

through informal contacts, and not through formal channels like employment agencies or the internet (see Figure 77). This comes to the detriment of those with more limited social networks, for example those in rural areas. Expanding job vacancy information for job search through public and private labor agencies can help improve the matching of skills and inform career choice.

**Figure 77: Workers rely a lot on their social network when looking for jobs**



Source: World Bank staff estimates using STEP HH survey. N=2385

**External accreditation of institutions can help to ensure quality in a fast expanding system and improve the information base for prospective students and employers.** However, Vietnam’s higher education and vocational training system still lacks a functioning mechanism to assess and effectively communicate information on quality of institutions. Since 2009, higher education institutions are required to disclose information relating to the quality of education facilities, teaching and management staff, income and expenditures. More than 150 universities and colleges have introduced internal quality assurance systems. But this is not necessarily against an agreed quality standard. While the Government established a National Accreditation Body in 2008 charged with reinforcing the quality assurance system at the central level by specifying and ensuring minimum quality standards, this has not yet led to the creation of a functioning system of external quality assurance and accreditation. For example, a decision as to whether there will be one or several accreditation agencies and how to secure their independence and funding has yet to be made. The current discussion centers on whether to accredit institutions or programs, which would be extremely costly given the current lack of qualified evaluators.

**Better information on graduates’ job placements through tracer studies can help future students to choose the best colleges, universities and programs and provide an incentive to universities to focus on quality.** They can also provide useful information to hiring firms on the quality and relevance of education programs and providers. Such studies collect information on employment patterns of graduates after a certain period, usually six months. While some universities in Vietnam conduct such studies to demonstrate their graduates’ labor market success (see for example in Figure 72), the use of tracer studies is not systematic.

**Improving information starts with strengthening coordination and partnerships between firms and universities and vocational schools.** Employers reported in the STEP survey that their interaction with education and training providers is limited and concentrated on recruitment (Table 8). Few employers

say that they are advising on curriculum content or on how to test students. Government at central and local levels can improve the flow and availability of information through using its convening power and using incentives to help initiate the establishment of formal and informal partnerships and coordination mechanisms between employers and training providers. While institutional models and set-ups vary across countries, all successful skills development systems around the world have created such coordination mechanisms. They range from the highly formal and institutionalized “dual system” in Germany which was built more than one hundred years ago to less formal and localized systems elsewhere. In Vietnam, partnerships already exist between leading firms and universities, and the challenge is to learn from this experience and help spread them further. However, today central or local government rarely plays the role as facilitator of such initiatives. International experience suggests it could and should.

**Table 8: Employer-education provider linkages are mostly focused on recruitment, and less on curriculum development**

Purposes of employers' contact with education and training institutions	Percent of firms
Recruitment	83
Participation in testing of students	3
Curriculum development	9
Further training of firm's employees	38
Work experience for students (internships and apprenticeships)	45

Source: World Bank staff calculations using STEP Employer Survey

**There is also scope to promote partnerships between training providers and firms for promoting demand-driven training and job placement of disadvantaged youth.** In Latin America, several countries have introduced skills programs for disadvantaged youth who have already left the formal education system. These demand-driven programs, known as *Jóvenes* programs, are regulated by the government but managed by public or non-formal training bodies or non-governmental organizations in partnership with business. They involve a focus on cognitive and behavioral skills such as problem-solving and team work, alongside technical and vocational training content – and include an internship. Evaluations have shown that these programs help improve the chances of job placement as well as quality of jobs that young people obtain (Cunningham et al, 2008).

**Removing the scope for rent seeking and corruption in education also helps with improving information.** Anticorruption surveys show that making unofficial payments in education is widespread (World Bank, 2012e, CECODES, VFF-CRT & UNDP, 2013). Corruption and unofficial payments deepen the disconnects by undermining the quality of information. Paying for grades, for example, compromises the information value of grades. With such payments, grades do not fully reflect a student’s real performance and thus make diplomas less useful for students in their job search and for firms in recruitment.

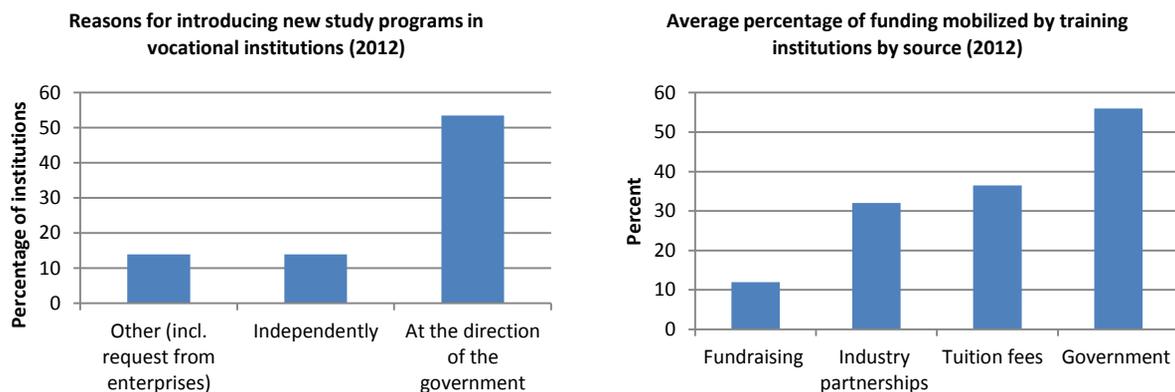
### Adequate incentives

**Even in a world of perfect and symmetrical information, students and parents as well as education and training providers may still not be able to make the right choices if they face weak incentives.** For example, universities that are not sufficiently autonomous in their decision-making and who have to seek permission from central Government on whether to develop a new program, change any curriculum content, or establish a partnership with a university abroad or with local businesses will find it hard to respond to good information. A rigid curriculum that does not give space for vocational schools and universities to adjust their teaching methods and content to the changing and local needs

expressed by employers may undermine their responsiveness. Students' choices may be affected by conditions in the labor market. For example, if employment in the public sector is more attractive than in the private sector, prospective students will make education choices to enhance their chances of finding a public sector job.

**Greater autonomy of decision-making in education and training institutions, coupled with clear accountability for quality, is a critical precondition for enhanced linkages and partnership with industry.** This is why the international trend in higher education and vocational training has been towards ensuring greater autonomy and accountability of institutions at the expense of central government control. In line with this, Vietnam launched a comprehensive reform of the tertiary education sector which includes steps towards greater autonomy and accountability of higher education institutions. The recently adopted Higher Education Law creates legal conditions for greater institutional autonomy for universities and colleges on many important aspects like planning, opening and closing units, new programs, financial management and staffing, while newly instituted university councils provide a tool to enhance accountability. Vocational education and training institutions can choose up to 35 percent of curriculum content locally and can also introduce new study program at their own initiative, though subject to approval by the Ministry of Labor, Invalids and Social Affairs (MOLISA). Vocational schools also have autonomy to decide on matters such as staffing and financing.

**Figure 78: Vocational institutions remain guided by central government directions, including private ones**



Source: CIEM and World Bank (2013). The chart presents evidence from a survey of 49 public and private vocational education and training institutions in Hanoi and Ho Chi Minh City and surrounding provinces

**Despite their expanded de jure autonomy of decision-making on curriculum content and study programs, many vocational institutions decide to follow directions from the government.** According to national legislation, vocational education and training institutions can choose up to 35 percent of curriculum content locally and can also introduce new study program at their own initiative, though subject to MOLISA approval. This autonomy does not translate into different choices in reality. Figure 78 presents evidence from a survey of 49 public and private vocational training institutions in Hanoi and Ho Chi Minh City and surrounding provinces on the reasons for introducing new study programs. A majority reported that they introduced new programs at the direction of the government; much more so than at their own initiative or in response to requests from enterprises. Moreover, their main source of revenue remains government transfers, more so than proceeds from tuition fees and partnerships with enterprises. Only 37 percent of institutes reported formal partnerships with enterprises. It should be noted that this evidence is not nationally representative, but does provide a picture of the realities in vocational education and training institutions in the main areas of economic agglomeration in Vietnam

which can be expected to be at the forefront in terms of their connectedness to industry (CIEM and World Bank, 2013).

**Vietnam's principal challenge in higher education and vocational training now is to translate a legal framework for greater institutional autonomy into de facto autonomy and clear accountability.** Like in vocational education and training, de facto autonomy of many higher education institutions for decision-making in response to labor market needs is still limited, and university councils not fully empowered to hold universities accountable. While the two national universities in Hanoi and HCMC as well as regional universities are largely autonomous in decision-making, both public and private universities and colleges have to follow operational and academic policies set by MOET. But there are pockets of excellence. The steps towards greater autonomy of national and regional institutions have demonstrated the benefits of a system in which MOET cedes greater decision-making to institutions, for example resulting in the establishment of partnerships with universities abroad and with local firms (see Box 5.2).

#### **Box 5.2: The University of Danang and industry partnership to improve graduate employability**

In an effort to expand its engagement with industry and to align its education and research activities with the needs of industry and society, the University of Danang has entered in a partnership with Aston University in the United Kingdom (UK), as part of the establishment of a Vietnam-United Kingdom research and training institute, and the company Rolls Royce. The University of Danang is one of the few universities in Vietnam that was granted a higher degree of autonomy in decision-making several years ago and has been taking advantage of this to build new linkages with partners at home and abroad. Aston University, one of the top 30 universities in the UK, is recognized for its effort to forge close partnerships with business and industry, including with Rolls Royce. The three-way partnership entails two concrete projects.

First, the University of Danang started to engage with local employers to persuade them of the benefits of contributing to program development, providing work experience for both undergraduate and postgraduate students and, most importantly, relevant industrial projects to work on. The project introduced an Industrial Advisory Group and an Alumni Forum, based on advice from Aston University. This has helped bring alumni, employers, research and teaching staff together in the areas of Engineering and International Business. The partnership reflects on the current models and practices in undergraduate and postgraduate education. Outreach events targeted to employers are held regularly to share with them a new vision for university education working in partnership with employers and seeking their support. Employers have been surveyed to establish their needs and expectations, in terms of graduate employees and working with the university. The end product is an agreed model for an undergraduate degree program to integrate work-based learning alongside academic qualifications. A number of research proposals have been developed that benefit both university staff and employers. Second, the University of Danang launched Executive Education programs for and with employers to be delivered under a Centre for Executive Leadership in Danang which aims to enhance the university's business engagement with both teaching and research, and diversify sources of income for the university.

The role of Aston University has been that of an adviser to University of Danang, bringing an established model of long-term partnership with groups of companies as well as capacity building on resource mobilization, alumni relations. Apart from content development, industrial placement and apprenticeship, Roll Royce committed financial support to both projects and helped leverage its relationships with the British Business Group of Vietnam to increase employer participation in these education initiatives.

**Greater institutional autonomy for universities also means that the role of government needs to change from direct management towards stewardship of the system.** Despite the recent moves towards promoting greater institutional autonomy, the Vietnamese Government still retains a strong say in managing the vocational and higher education systems, for example by centrally setting enrolment quotas in higher education and regulating and approving curriculum content. In contrast, a more connected, responsive skills development system suggests a different role for Government, with a

shifting focus from controlling inputs (such as enrolment quotas, curriculum content and teaching methods), towards to ensuring minimum quality levels (through accreditation and mandating university councils to hold the autonomous university accountable) and incentivizing better outputs (such as qualifications and competencies of graduates).

**Government can use regulative and financing tools to steer the system.** For example, rather than approving the content of a training program to become an electrician, the Government could invite employers and training providers to agree on occupational competency standards which an electrician should possess. Government could then focus on certifying electricians based on their competencies – whether they acquired them on the job, with a private or public training provider or elsewhere. Korea provides an interesting example in which Government, industry and VET providers agreed on a National Competency Standard (NCS) which sets standards that define the knowledge, skills and quality required of works in specific occupational fields to set systematic criteria based on which individuals may be educated and trained (see Table 9). There are increasingly similar examples of partnership between the Government, employers and providers in Vietnam on determining occupational competencies, for example in the tourism sector (see the ‘In depth’ section at the end of this chapter). The Government can use financing tools to incentivize excellence in universities (e.g. by allocating part of its financing based on results) or stimulate firms to partner with training providers and expand on-the-job training (e.g. through tax breaks, see Box 5.3).

**Table 9: Korea - Example of National Competency Standards for traditional construction occupation**

<b>Definition: Traditional Construction is the work of building and/or repairing architecture using methods that have been passed down from generations of Korean architects.</b>	
Level	Performance Standards
7	-
6	-
5	Is capable of planning and implementing construction projects based on extensive knowledge in his or her own and related areas of expertise, and performs the overall supervision and management of the construction project.
4	Is capable of fully comprehending the drawings pertaining to his or her area of expertise, and performs the task of managing the construction project.
3	Creates simple drawings pertaining to his or her area of expertise, identifies and estimates the quantity of needed materials, plans and executes the project.
2	Understands the physical properties of materials used in his or her area of expertise, such as woodwork (architectural, furniture), stonemasonry, tiling, plastering, and decorative painting, and performs tasks requiring medium level skills.
1	Performs basic tasks in his or her own area of expertise such as woodwork (architectural, furniture), stonemasonry, tiling, plastering, and decorative painting and assists traditional construction workers with a higher degree of skills.

Source: Park, 2011.

**Box 5.3: Promoting adult continuous education and training**

As seen earlier in this chapter, not all firms train their workers. Even those who train, do not train all workers. In Vietnam and the world over, larger firms are more likely to train than smaller firms. Likewise, firm training often concentrates on younger and better educated workers – and not those that might need it most to stay productive, such as the less well skilled and older workers whose skills may have depleted. Uneven provision of training has created an opening for government intervention to stimulate the demand for training of firms and workers alike. Apart from incentivizing vocational schools and higher education institutions to develop training programs and partner with firms, governments also use financing tools to stimulate the demand for training by firms and workers.

OECD countries have been using financial tools to incentivize firms to expand training of their workers. Allowing firms to deduct the costs of training from their taxes is one of the most common forms of training incentives for firms. Tax deductions for training costs are relatively simple for governments to administer and for firms to use, as they rely on existing tax systems. Critics of tax deductions point to the fact that they may be attractive also to those firms who would have provided training even without such incentives such as large firms. However, tax incentives could be targeted to certain types of firms, and types of workers who are underrepresented in training. Tax deduction schemes can be a useful tool to give an initial boost to adult education and training, particularly in environments where few firms and individuals currently participate in training.

In Korea, the government partners with large multi-national companies and small and medium-sized enterprises (SME) to form “training consortia” in which training institutes associated with large firms organize training for workers in SMEs, subsidized by the government. This helps address the traditionally lower training participation in SMEs and promotes partnerships between enterprises, including suppliers and sub-contractors, and technological spill-overs.

Alternatively, incentives can be provided to the individual worker. These usually include tax deductions for training costs (for those who pay income tax) or grants and vouchers which individuals can use to obtain training in accredited providers. However, for these to be effective in promoting access to job-relevant training programs, individuals need to have good information on which programs are of high quality and will give them.

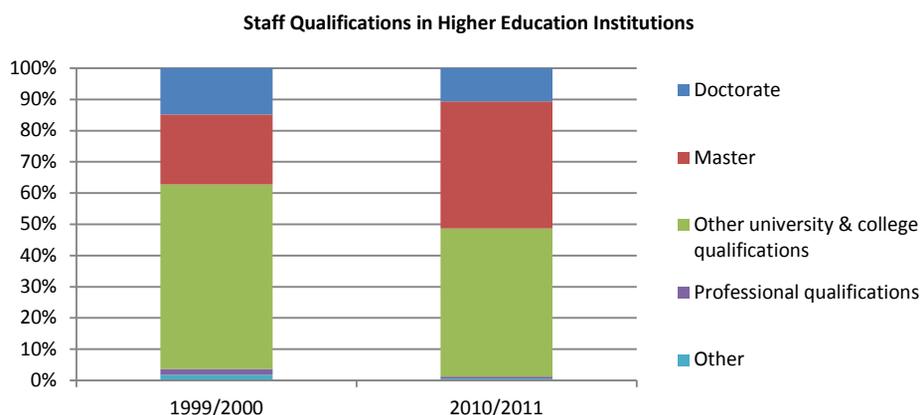
Source: Bodewig and Hirshleifer (2011). OECD (2005)

## Enhanced capacity

**Even in a world of perfect and symmetrical information and appropriate incentives, students and parents as well as providers may still not be able to make the right choices if they face capacity constraints.** On the students’ side, these may be principally related to the capacity to the direct and indirect costs associated with education and training. Among schools and universities, capacity constraints may come in the form of insufficiently trained teaching staff or managers, inadequate curricula or a simple lack of knowledge and experience on how to act on information. Financing capacity constraints can also prevent firms from investing in their workers’ training.

**Education and training providers in Vietnam suffer from human and physical capacity constraints.** Staff capacity in higher education has not caught up with the expansion in the number of students and institutions. Only around 10 percent of lecturers in universities have a doctorate and, while the share increased considerably over time, only another 40 percent hold masters degrees (Figure 79). The student/faculty ratio of 1:30 in Vietnam is high by international standards. Scholarships and programs to retain students in universities and incentivize them to choose academic careers can help raise the overall qualification profile. But capacity is not limited to teaching and research: private vocational training institutions in Hanoi and Ho Chi Minh City and surrounding provinces report that a lack of strong managerial staff is a key constraint to their ability to deliver effective training services (CIEM and World Bank, 2013). This suggests that investments in managerial capacity will enable university and vocational school leaders to take advantage of greater autonomy.

Figure 79: Few staff in higher education institutions have advanced academic degrees



Source: MOET

**Concerns over the quality of local vocational training institutions have resulted in vocational training being held in low esteem.** Few participants in the qualitative research study considered vocational training when making their education choices (Oxfam and Action Aid Vietnam, 2012). Respondents stated that the perceived quality of vocational training was limited, and that they also perceived the employment opportunities emerging from such study as limited. Vocational training among these participants was considered only as a final resort if they were unable to enter any tertiary education institutions.

**Students with vocational training reported difficulty adapting the technical skills learnt at school to real work environments.** Among study participants with vocational training, students raised concerns about the content of the courses and their applicability to their work environments. Students expressed an interest in having greater opportunities to gain technical expertise through hands-on learning rather than through classroom sessions focused on theoretical issues. For example, a student of mechanics in Hanoi suggests that *“classroom sessions dominate the entire training program. It would be lucky if I could use 20 to 30 percent of what I was taught there in real life”*. Multiple graduates reported that they were unable to obtain employment relevant to their field of study. One reported reason is that the quality of the training that they received was limited, with schools placing greater focus on generalized courses and less emphasis on the specialized skills students needed to use in the labor market.

**In Vietnam’s fast changing labor market, outdated machinery for training implies that skills learnt in vocational school may no longer be applicable to work environments.** The need to update the machinery used and techniques taught in some vocational training schools was suggested by both recruitment agents in HCMC and by former students. A graduate from a vocational training school in Hai Phong suggested that he is unable to use the knowledge that he gained during school, since *“outdated machines are still being used for training”*. Recruitment agents in Ho Chi Minh City reported that graduates typically need to be retrained upon entering their positions since some of the machinery used for teaching is outdated (Oxfam and Action Aid Vietnam, 2012).

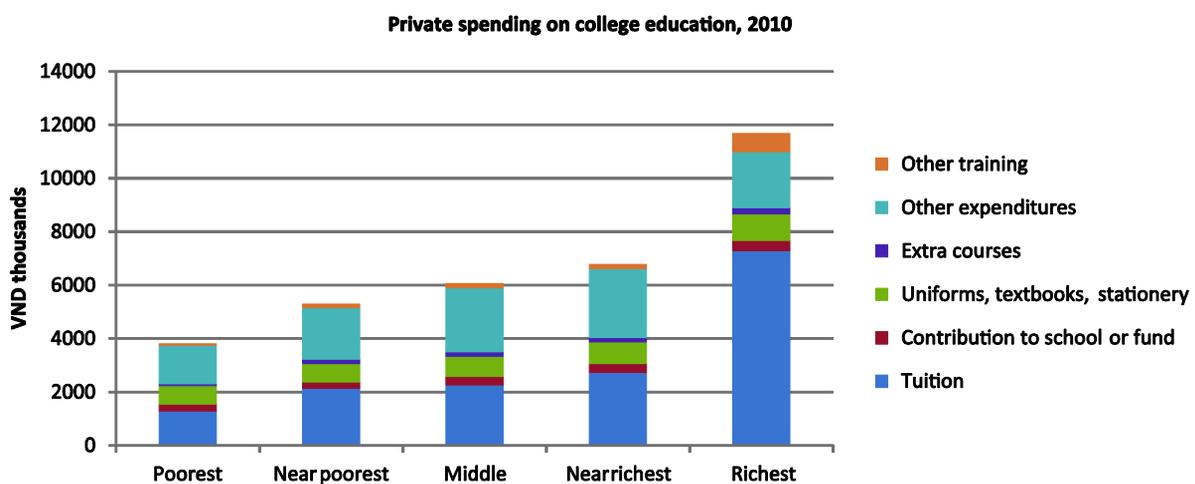
**Enhancing the capacity of higher education institutions and vocational training providers requires investment.** Such investments are the shared responsibility of institutions themselves, business and the Government. It is in businesses’ interest to donate no-longer used equipment to training providers as part of a formal partnership, and many firms already do so. Likewise, forward-looking universities and vocational institutions make their own investments. Lastly, the Government has a role in investing in

human and physical capacities in universities, colleges and training providers. Over the years, the Government has made considerable investments in providers' capacity, including with the use of overseas development assistance. Such financing can be provided in a results-oriented way so as to incentivize providers to ensure high quality and to cater their programs to local business needs.

**Strategic development of the science, technology and innovation system in Vietnam is an important complement to skills development.** A dynamic science, technology and innovation system with is critical to enhance Vietnam's ability to connect to, select, adapt and use global knowledge. Public investment to create attractive conditions for research can help attract and retain researchers, including Vietnamese overseas PhDs, and promote a growing, capable critical mass of international-level professors at higher education institutions. Strengthening the graduate education and advanced training system as well as scholarships and programs to retain students in universities and incentivize them to choose academic careers can help raise the overall qualification profile of teaching and research staff. Improving human capacity is not limited to teaching and research: investments in managerial capacity will enable university and vocational school leaders to take advantage of greater autonomy.

**Access to higher education remains inequitable between richer and poorer Vietnamese and the ability to finance studies is a constraint affecting the less well-off.** Even though enrolments in higher education have been rising across all income groups, a higher education degree in effect remains a privilege for the rich (see Figure 71 above). Children from poorer background tend to drop out earlier and not to proceed to higher education. For those who do enroll in university or in college, the ability to pay remains a critical determinant of choice. As expected, the extent of private spending on college education varies significantly by income group (Figure 80).

Figure 80: Private spending on tertiary education is considerable and much higher among the rich

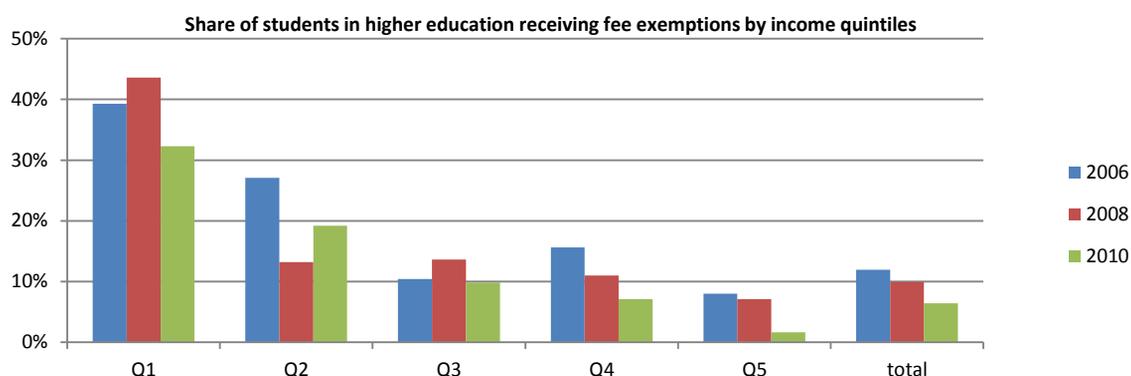


Source: World Bank staff estimates using 2010 VHLSS

**While Vietnam has been relying on cost-recovery through tuition payments to support the expansion of higher education, measures to safeguard the access to higher education by the poor are in place but can be further strengthened.** In order to promote access to higher education for poor students who would not otherwise be able to afford tuition, the Government has set up a large loan scheme (with a total amount above US\$ 1.85 billion towards 870,000 students in universities and more than US\$1,3 billion for 760,000 students in colleges in 2012). More than 60 percent of beneficiaries come from registered poor and near poor households. Moreover, Vietnam also has a policy of fee exemptions

which is pro-poor (Figure 81). As Vietnam seeks to expand access to tertiary education, adequate scholarship and fee waiver mechanisms need to be developed and maintained to overcome limits to financing capacity among the poor.

**Figure 81: Vietnam’s policy of fee exemptions is pro-poor**



Source: World Bank staff estimations using VHLSS (multiple years)

## Summary

**Vietnam’s major challenge in enhancing the technical skills of its current and future workforce is to overcome the disconnects between employers, education providers and students.** These disconnects are driven by information gaps, inadequate incentives and capacity limitations affecting education and training providers, firms and (prospective) students. The Government plays a critical role to help overcome the disconnects and can do so by promoting the flow of information, by setting adequate incentives and by investing in enhanced capacity of education and training providers and students to make good choices in response to better information.

**Better information, incentives and capacity are mutually reinforcing.** Government can use regulatory or financing incentives to promote partnerships between providers and industry and the generation and dissemination of better information on graduates’ employment successes. In turn, better information makes providers more accountable. Ambitious and successful universities and vocational schools want to demonstrate that they have strong linkages with industry, and that their graduates find good jobs and do so quickly. Investments in their managerial and teaching capacity can enable them to do so.

**The role of the Government in skills development in a modern market economy is changing.** A more connected, responsive skills development system suggests a changed role for Government, with a shifting focus from controlling inputs (enrolment quotas, curriculum, teaching methods) to incentivizing better outputs (qualifications and competencies of graduates) and facilitating partnerships between businesses and providers, for example in setting occupational standards. With the transition toward greater autonomy of universities and colleges under way, the role of the Government in skills development is also in transition. However, as demonstrated in this report, that transition is not yet complete.

## **In depth: Developing occupational skills standards in Vietnam's tourism sector**

Vietnam has risen in importance as a relatively new tourism destination in Southeast Asia. International tourist arrivals in Vietnam reached more than 6 million visitors in 2011, representing a 19 percent increase over 2010 according to statistics from the Vietnam National Administration of Tourism. Vietnam's tourism revenue in the first half of 2012 surged by more than 35 percent to VND 62 trillion, or more than US\$ 3 billion, compared to VND 45 trillion in the previous 12 months, according to the Vietnam National Administration of Tourism. The Government's Strategy for Tourism Development in Vietnam 2011-2020 estimates that up to 2.2 million workers will be needed in the tourism sector by 2015 and 3 million by 2020. According to data from the World Travel and Tourism Council, the sector already accounts for 4.3 percent of Vietnam's GDP and 3.7 percent of all jobs.

### ***Workforce challenges in tourism***

However, in order to operate competitively in the international tourism marketplace and to provide internationally recognized standards for tourists, Vietnam needs a workforce with the skills to deliver products and services of appropriate quality. For many years there has been a significant shortfall in well-qualified staff for the tourism industry in Vietnam. Education and training institutions have been unable to produce graduates with the skills and knowledge required to meet the needs and expectations of the tourism sector.

### ***Responding to the need of the market***

In response to this challenge, the Government of Vietnam, with assistance from the European Union, launched a project to design and develop occupational skills standards for the tourism industry. The project aimed to train new staff at entry level in the industry, both through the college education system and in-company, especially for hotels and medium to large tour and travel companies. Thirteen occupational standards were developed through analyzing and establishing the tasks that people performed to fulfill the requirements of a specific job. These Vietnam Tourism Occupational Skills Standards (VTOS) include front office, housekeeping, food and beverage service, western food preparation, Vietnamese food preparation, pastry and bakery, small hotel management, hotel security, travel operations, tour operations and others.

### ***The VTOS standards development process***

From the initial job analysis, the required skills and knowledge required for competent job performance was defined and broken down into tasks and sub tasks. These in turn were divided into a sequence of steps and performance levels, along with an explanation of why the process needed to be carried out in a particular way. The resulting 'standards' provided in-company trainers with a clear and systematic set of standards to enable staff to put into practice internationally accepted operating processes to help them improve the quality of their work performance.

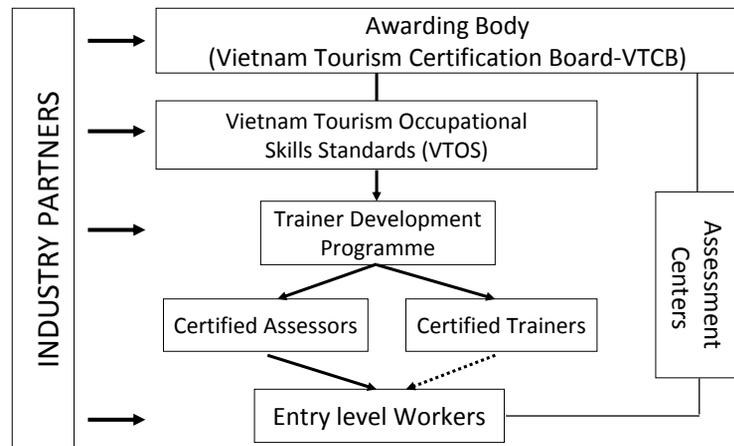
The program team worked closely and consulted with industry members, trade bodies, colleges and government agencies to ensure the needs of the industry were met and that the standards developed were practical and appropriate to entry level staff. Additionally, technical working groups were set up to review and provide feedback into the standards and the development process. The standards were then pilot tested with the target groups to ensure that they were applicable, and were subsequently refined and updated.

## Impact on the industry

The final process before implementation of VTOS was accreditation. The Vietnam Tourism Certification Board (VTCB, part of the Vietnam National Administration of Tourism) was established to provide the assessment guidelines and quality assurance system for the new occupational standards. Over 3,000 trainers were trained in a national

‘Trainer Development Program’ and certified by VTCB; over 140 assessors were trained in work-based assessment techniques with almost 1,100 trainees assessed in their workplaces and the fully equipped assessment centers in the tourism colleges. Alongside the workplace training and assessment activities, fourteen tourism colleges signed up to introduce VTOS Standards into

their curriculum and became partners in this initiative. This development process is one that could be used effectively by other industries, in particular to ensure that industry practices are in line with international standards and to provide skilled employees with recognition of their existing professional competences.



## Future developments

To address future needs of the tourism industry, including the mobility of labor through the ASEAN Mutual Recognition Arrangement for Tourism Professionals by 2015, the VTOS system will be updated and redesigned for wider use in hotels and tour and travel companies as well as in the curriculum of tourism and hospitality colleges. It will also aim to gain acceptance in all the provinces and to develop new standards for community-based tourism businesses in rural and mountainous areas of Vietnam through developing and improving the quality of their services and thus generating more income and creating employment.

VTOS will also include new standards covering environmental and sustainable practices and expand from front line staff through to management levels. In addition it will ensure compatibility with the Ministry of Culture, Sports and Tourism (MCST) occupational standards for tourism and align with the ASEAN Common Competency Standards for Tourism.

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## Endnotes

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<sup>i</sup> For a discussion of market failures in skills development see Almeida, Behrman and Robalino (2012)

<sup>ii</sup> In 1993, 60 percent of rural household income came from agriculture and sideline activities (McCaig et al. 2009). In 2010, approximately 34 percent of rural household income came from these activities (Badiani and Brandt 2013).

<sup>iii</sup> Due to changes in occupational codes over time, it is difficult to examine the change in the share of skilled blue-collar occupations in the manufacturing sector over time.

<sup>iv</sup> The constraints are reported to be greater among workers with higher levels of education, suggesting that skill constraints may be most present among those workers who are do jobs in which more complex tasks are conducted.

<sup>v</sup> It should be noted that these reports of skill obstacles reflect perceived skills shortages by employers. Skills shortages are perceived by employers in many countries with education systems of all standards (World Bank 2012), suggesting that employers concerns about skills may be more pervasive than the education system in any given country. However these reports can be viewed as informative as a reflection of perceived concerns about growth constraints.

<sup>vi</sup> Craftsmen are the single largest occupational group in the sample.

<sup>vii</sup> It should be noted that self-reported constraints reflect a combination of the actual individual skill profile and the job or career path that they are placed in and expect to follow. Therefore higher reports of constraints among more educated workers are likely to reflect the observation that they are in jobs where greater analytical and literacy skills are required. Indeed, 40 percent of workers with higher education report having to do tasks involving at least 30 minutes of thinking at least once a week compared to 18 percent of workers with upper secondary education and only 6 percent of workers with primary education. A similar issue may be raised for workers reporting that their education is useful for their work.

<sup>viii</sup> Cognitive ability is a key measure of human capital and skills. Human capital is the stock of knowledge, skills or characteristics of a worker that contribute to his or her “productivity” (Acemoglu and Autor, *forthcoming*). Although education has been found to raise long-term rates of economic growth, the effect of education on economic growth has been found to be largely driven by the cognitive skills acquired through the education process (Barro 2001; Hanushek and Woessmann 2008, 2012). The evidence suggests that expanding educational enrollment without ensuring improvements in cognitive skills may not result in economic growth (Hanushek and Woessman 2008). This evidence does not imply that social and behavioral skills are unimportant for economic growth since cognitive skills are likely to be closely related to social and behavioral skills. Therefore, the effect of cognitive skills on economic growth may indeed reflect a combination of cognitive and social and behavioral skills.

<sup>ix</sup> A more comprehensive and difficult test was conducted to assess higher level literacy skills in Vietnam and Bolivia. Unfortunately the results of this test are unavailable at the time of the publication of this report.

<sup>x</sup> The test covers foundational reading skills including word meaning, sentence processing and passage comprehension. More information on the measurement of literacy skills can be found in the “in depth” section at the end of the chapter.

<sup>xi</sup> It should be noted that factors other than differences in education quality could also explain a decline in score with age among individuals with similar levels of education, such as differences in the use of their literacy skills, differences in motivation to learn across age cohorts (regardless of the quality of schooling offered), and a decline in mental faculties.

<sup>xii</sup> Although the literacy test is the preferred measure of cognitive skills, the test captured only basic literacy skills therefore we turn to examining self-reported skills to look at more advanced skills. Annex 1 discusses and analyzes the relationship between self-reported and objectively assessed cognitive skills.

<sup>xiv</sup> These characterizations draw heavily on Zhao and Seibert (2006).

<sup>xv</sup> Data on wages paid by international vs. local firms in Vietnam is not available. However, evidence from the VHLSS suggests that there is a substantial wage premium for working in “foreign” firms compared to domestic firms for workers with similar characteristics.

<sup>xvi</sup> It should be noted that the return to emotional stability is not statistically significant at a 10% level among self-employed individuals.

<sup>xvii</sup> Dominant models of personality assume a hierarchical taxonomy similar to that used to model intelligence, but without the prevalence of a single factor equivalent to *g* (Almlund et al. 2011).

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<sup>xviii</sup> These differences continue to be found after accounting for age and education differences within the sample studied.

<sup>xix</sup> Malleability can be defined as rank-order change or rank-order stability, which establishes the extent to which an individual's ordinal ranking of a trait remains stable over time. Although the rank order of scores remains stable after a pivotal moment, IQ scores exhibit absolute changes over time. Therefore, individuals continue to see changes in the absolute levels of their scores although the order of scores within a population exhibits greater stability over time. Malleability can also refer to change over time in absolute levels of a trait over time. IQ scores have been shown to become relatively *rank* stable at age ten or so (Hopkins and Bracht, 1975; Roberts and Del Vecchio, 2000), although *absolute* changes in IQ within a population are of course observed throughout the life cycle.

<sup>xx</sup> This is changing: Vietnam participated in the 2012 Program for International Student Assessment (PISA) managed by the OECD. Results will become available in late 2013.

<sup>xxi</sup> There may be concern that the decline in relative performance of those with the highest test scores captures mean conversion, for both better and worse off students. While mean conversion may well be occurring, it is interesting to note that the decline for worse-off students is substantially greater than for better-off students. The opposite can be said for those students whose rank is rising over time. To check the robustness of the results to these concerns, we examine whether the same results are found when a student performs poorly (or well) on two tests, Mathematics and Vietnamese. If a student falls within the bottom 25% on both these tests, this suggests that something other than measurement error is at work. We find similar results both for ranks and normalized scores when we examine the change in their test scores over time, suggesting that these trends are not a statistical artifact but are likely to reflect underlying processes.

<sup>xxii</sup> A notable exception is access to computer and internet technology in schools which is far more common in more advantaged urban areas and raises a concern regarding a "digital divide". With prospective students in urban areas turning predominantly to online information resources when making educational and career choices, less access to computers and the internet in rural and remote areas in school risks becoming a key constraint to decision-making. See Chapter 5.

<sup>xxiii</sup> While in practice there is wide variation and often not a clear distinction between formal full-day schooling and informal extra classes, full day schooling is expanding fast. According to MOET data, the share of primary school children who received 30 or more instructional periods increased from around 60 percent to 73 percent nationwide between 2007/8 and 2011/12 and from 39 percent to 70 percent in the 35 poorest provinces supported under SEQAP.

<sup>xxiv</sup> School report cards were distributed that compared learning achievement results across different schools in the same village. Many parents in the villages included in the program were illiterate; as a result, the distribution of report cards had to be done through facilitated village meetings to ensure everyone understood the results and to discuss the factors that influenced learning. This program shows that capacity building is possible for parents to understand learning outcomes and to play a role in their children's schooling even in the lowest capacity contexts.

<sup>xxv</sup> For a discussion of market failures in skills development see Almeida, Behrman and Robalino (2012)