

The Role of Youth Skills Development in the Transition to Work: A Global Review

Arvil V. Adams

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1818 H Street, NW

Washington, DC 20433

Telephone: 202-473-1000

Internet: www.worldbank.org

E-mail: childrenandyouth@worldbank.org

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Table of Contents

Page	v	Acknowledgements
	vii	Foreword
	1	Executive Summary
	2	Apprenticeship and Work Experience
	3	Upgrading of Skills
	4	Does TVE Payoff?
	5	Introduction
	7	The Life Cycle Perspective
	9	Preparing for Entry to the Workforce
	10	Trends in TVE Development
	11	Deferring Vocational Specialization
	11	Improving Articulation with Further Education
	12	Blending General and Vocational Curricula
	13	Strengthening the Connection of School and Work
	14	Apprenticeship and Work Experience
	17	Impact of TVE on the Transition to Work
	21	Upgrading Workforce Skills
	23	The Role of Enterprises in Training
	26	Reaching the Unemployed
	28	Serving Disadvantaged Youths
	33	Extracting Lessons
	33	Does TVE payoff?
	34	When to introduce vocational content
	34	How much vocational content?
	34	The value of apprenticeship and work experience
	35	Recognizing what enterprises will do and <u>not</u> do
	35	Improving skills development for unemployed youth
	35	Reaching at-risk youths
	37	Appendix A
	41	References
	47	Overview of Global Literature on Skills Development in the Transition to Work

Page Boxes

- 13 1. The Republic of Korea Opens New Pathways for Graduates of Secondary TVET to Dispel its Second-Class Image
- 23 2. National Training Authorities
- 27 3. Singapore and Malaysia Provide Incentives to Increase Training by Smaller Firms
- 31 4. Key Factors Leading to Successful Second Chance Education and Training for At-Risk Youths

Figures

- 7 1. Four Elements Influencing Workforce Development

Tables

- 11 1. Percent of Secondary Students Enrolled in Technical and Vocational Programs by Region: 2002/2003
- 25 2. Enterprise Training: Estimates of Productivity Impacts From Investment Climate Surveys

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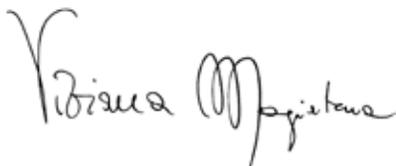
Foreword

The 2007 *World Development Report* contends that it has never been a better time to invest in young people living in developing countries. Today's youth are tomorrow's workers, entrepreneurs, parents, active citizens and leaders. Demographic patterns with falling fertility promise to boost growth by raising the share of the population working and increasing household savings. A window of opportunity exists for rich and poor nations to tap the potential of youth before the aging of societies closes it.

Decisions about the education and work of youth will determine in large measure whether this opportunity is realized. The international community took steps in 1990 at Jomtien, Thailand to open access to basic education for all. The success of this initiative globally, has begun to raise demand for post-basic education, and with this, skills for entering the workforce. Yet, youth, 15 to 24 years of age, continue to struggle in the transition from school to work as reflected in unemployment rates nearly 2 to 3 times those of adults 25 and over.

This report examines the role played by skills development in schools and the workplace and its impact on the transition of youth to work in advanced and developing countries. Skills for work, prior to the industrial revolution, were largely provided in the workplace, but over the past century have been offered as well in school settings at secondary and tertiary levels through technical and vocational education programs. Beyond this, opportunities for skills are available in non-formal training programs offered by a diverse range of public and private institutions, including employers.

This report offers advice to policy makers and development partners on the employment and earnings outcomes associated with different pathways to skills. It highlights what many countries are doing to bridge more effectively schooling and work for youth. New models of technical and vocational education and apprenticeship are reviewed along with programs to provide second chances for youths who may have lacked opportunities to acquire education and training or who initially made bad choices in preparing themselves for the world of work. Choosing effective ways to equip youth with skills is important to investing in youth people and realizing their potential.



Viviana Mangiaterra
*Adviser, Children and Youth
Human Development Network
The World Bank*



Robert Holzmann
*Sector Director, Social Protection
Human Development Network
The World Bank*

Executive Summary

The World Bank's World Development Report of 2007, *Development and the Next Generation*, examines the choices made by youth 15–24 years of age in education, work, health, family formation, and citizenship and how these choices shape the future well-being of individuals and nations. As part of the background preparation for this study of youth transitions, this paper was prepared examining the role played by skills development in the transition from school to work. The paper explores outcomes associated with choices of general and vocational curricula in school settings, apprenticeship and other strategies for linking schooling and work, and for meeting the second-chance needs of youth who fail to acquire early education as a foundation for workplace skills. Findings from rigorous program evaluations, mostly in advanced countries and some in developing countries, are emphasized along with effective strategies for equipping youth with skills to make the transition to work.

The movement from school to work is seen from a lifecycle perspective with skills development examined as it takes place in schools, in early work experience, and later as entry-level skills are upgraded. The choices for skills development and the modalities for delivery vary as the transition progresses. Workforce development is influenced by (i) education, (ii) apprenticeship and early work experience, (iii) labor market programs—including non-formal training programs, that facilitate the operation of labor markets and address the needs of those encountering problems therein—and (iv) labor market policies that influence the investment climate and jobs creation for youth. Beyond this, there are other forces in the home, the community, and economy that shape the transition to work. The focus of the paper is on skills development that builds on early schooling foundations and that offers second chance opportunities for those who fail initially to develop these foundations.

Preparing for Entry to the Workforce

Historically, training for productive employment has been a private matter. Individuals acquired skills through apprenticeship or on-the-job training and financed their training through reduced wages during the learning period. Employers were actively involved in the training. The industrial revolution of the 19th century changed the structure of employment. A hierarchically organized work force, in which entry-level jobs required relatively few skills but a high level of industrial discipline, replaced the single craftsman who personally carried out all the tasks associated with a product. In the early part of the 20th century education reformers introduced vocational preparation to the curriculum of secondary education, and the vocational school was born. This pattern soon spread to Europe. From these origins it was a short step to the common wisdom of the 1950s and 1960s that governments in developing countries needed to expand their investment in vocational skills.

Secondary education accommodated vocational preparation in different ways. Typically, lower-secondary education offered general vocational skills and awareness and appreciation of the world of work, while upper-secondary technical and vocational education included courses preparing youth for entry level,

semi-skilled employment, covering a wide range of occupations. The former was often described as pre-vocational education. Those taking a technical and vocational curriculum could expect to enter the workplace on completion of their secondary education with few likely to progress to post-secondary education. In fact, in many cases, pathways did not exist for progression to post-secondary education from a secondary vocational education, leaving students at a “dead-end” for further education. This schooling contrasted with what was called general secondary education providing broad knowledge and basic skills in mathematics, sciences, and communications. Students pursuing this academic path were generally expected to continue to post-secondary education.

Demand for secondary and post-secondary education is growing in developing countries as a consequence of successes in providing basic education for all. In turn, this is raising the issue of how much vocational content should be provided in the curriculum. Evidence from advanced and developing countries shows distinctive trends in the combination of general schooling and vocational content. While there is pressure from some educators to start vocational preparation as early as junior secondary education, the pattern globally is to defer specialization until senior secondary education, with advanced countries pushing vocational content even later to post-secondary education. Numerous countries have also taken steps to improve the articulation of secondary vocational education with higher education, thus changing the “dead-end” image of vocational education. The trend in advanced countries has been to move toward blending instruction, so that vocational students receive more academic content to broaden their occupational focus and general students are given more opportunity to apply academic principles to practical problems. Added to this, steps are being taken in many countries to strengthen the connection of school and work by including work experience in the school curricula.

Apprenticeship and Work Experience

Attention to apprenticeship and structured work experience as means to promote the school to work transition has grown over the past several decades to join the continued emphasis on school-based vocational programs for entry-level skills. Evidence favors these programs, but with qualifications. Employment growth is a key ingredient to demand for apprentices and interns. Employers are unlikely to take on board large numbers of youths for training when conditions for sustained employment are not present. The strongest evidence favoring formal apprenticeships is their positive impact on employment, but largely for young men. The impact on earnings is more problematic, again especially for young women. Traditional apprenticeships have proven cost-effective for delivering skills in an informal economy, but face problems of quality and transfer of new technologies in modern economies. Steps can be taken to improve traditional apprenticeships. The challenge remains to expand apprenticeship and work experience beyond the traditional craft and technical trades. Efforts to do so in the U.K. and Australia have shown some success.

Beyond apprenticeship, work-based learning as part of the school curriculum has expanded in a number of OECD countries. In Sweden, vocational studies involve unpaid internships in structured work placements occupying 15 percent of the student’s time. Recruiting employers to offer internships has proven challenging. In Australia, school-industry programs have been introduced to provide students with structured learning in a workplace during the senior year of secondary school. This learning is assessed and accredited as part of their schoolwork. Participation in the program was initially disappointing with only 12 percent of eligible students participating, but the outcomes have been promising. Evaluations point to enhanced student motivation, confidence, and satisfaction, along with improved personal and practical skills and time-management. National youth service programs in a number of countries offer community

service and work experience for secondary and tertiary students, but also other youth target groups. Few national youth service programs have been rigorously evaluated against these objectives, but anecdotal evidence is favorable, particularly where national service is voluntary.

Upgrading of Skills

The movement from schooling into the workforce for youths brings with it a new set of actors and challenges for skills development and sustained employment. Rather than focusing on the provision of entry-level skills to obtain employment, attention turns to other objectives: (i) upgrading workforce skills for the employed, (ii) meeting the skill needs of the unemployed, (iii) empowering others with skills for occupational change, and (iv), responding to the skill needs of the disadvantaged with “second-chance” options for developing qualifications. The needs of older workers facing the forces of change are merged with those of young workers. Employers, who are already engaged in apprenticeship and structured work experience for youths, play a large role in the provision and financing of training to meet these objectives. They are joined by public and private formal education institutions and technical ministries (labor, industry, agriculture, etc.) and for-profit and not-for-profit trainers that diversify programs and modes of skills delivery to meet these diverse needs. Together, these sources add a second “T” to TVE to yield technical and vocational education and training, TVET.

Training provision and financing by employers is frequently overlooked in favor of public investments in TVET. Employers, however, are an active source of provision and financing in the second “T” in TVET. The evidence shows that this training culminates in higher productivity for the enterprise, and higher wages for workers. It is self-regulating and self-financing. Contrary to expectations, employers are found to invest in general skills alongside skills specific to the enterprise. When considering this as a source of skills for youth, however, it needs to be recognized that not all enterprises train, nor will all workers in the enterprises that do train have access to the training. Enterprise training is selective, with workers in small and medium-sized enterprises and those with lower levels of formal education having less access to the training. On grounds of equity, if not efficiency, these conditions of employment provide a rationale for public interventions, to broaden the access and investment in education and skills for those left behind by enterprise-based training. These interventions may include public provision, but also public financing of private providers, including training by enterprises.

High levels of youth unemployment are unlikely to be reduced by the second “T,” unless the problem of unemployment for youth is structural in nature, meaning that youth possess the wrong skills for jobs that exist. Where the unemployment problem is a lack of job creation, high labor costs, or unrealistic wage expectations on the part of youth, TVET is less likely to be successful unless coupled with other reforms. Understanding the core causes of youth unemployment is an essential first step before costly investments in TVET are made. Perhaps due to the lack of this understanding, much of the training offered to the unemployed is said not to have lived up to its expectations when subjected to careful evaluation. This image has plagued youth training programs in countries like the U.S., so much so that it has led to cut backs of public funding. This image, however, is incorrectly formed as the evidence of this review suggests that where jobs do exist and training is linked to this employment, investment in TVET can yield positive benefits. The type of training offered is important to the outcome. Training programs with employer sponsorship and offered in enterprises tend to perform better, out-performing classroom training for the unemployed.

Efforts to help at-risk youth enter employment with TVET have proven more difficult. Early school leavers are especially at-risk in the transition. A key priority is to help these youth to stay in school, or if

they have left, to return to school. For helping youth stay in school, steps can be taken to provide services offsetting possible learning deficiencies, increase the benefits from and interest of parents and youth in schooling, and reduce household income constraints. Second-chance programs for education and training can play an important role helping early school leavers enter employment. Non-formal education programs providing equivalency certificates for missed schooling, can open opportunities for further education and to training on the job. Programs like the Job Corps in the U.S. and the Joven Programs of numerous Latin American countries have shown that training is often not sufficient by itself to help out-of-school youth make the transition. Other social services and support are needed alongside training to pay dividends. Competition in their delivery and the involvement of employers are important conditions for the success of these programs. These second-chance programs, while costly, can pay excellent dividends and reduce the social cost of first-chance failures. With their cost, targeting is important. Their cost emphasizes the importance of promoting first-chance options for assuring that youth have a solid educational foundation before entry to work.

Does TVE Payoff?

Does technical and vocational education (TVE) in a school setting payoff in facilitating the transition to work? The answer from rigorous evaluations controlling for selection bias is that it can, under the right conditions. Building strong links between schools and employers is important to realizing this payoff. TVE alone, however, is unlikely to solve the social problems of restructuring gender-biased patterns of employment or meeting all the needs of disadvantaged youth. Strategies that push vocational content earlier in the curriculum and vocationalize the curriculum with “lite” offerings of TVE amidst general education do not show evidence of connecting youth with jobs or improving their earnings prospects. However, they may lead to higher educational attainment that has to be valued for its own benefits apart from those of immediate employment. Good quality TVE that is closely linked with strong employment growth and aligned with the skills in demand in labor markets can payoff for youth. The payoff is more assured for obtaining employment than for higher pay, but pursuit of advanced vocational skills can lead to both. Building TVE on a strong foundation of general education by pushing vocational content later in the secondary and post-secondary curriculum shows evidence of higher benefits in relation to the costs. Ending labor market discrimination will be important to assuring equal benefits to young men and women.

Introduction

Unemployment rates among youth 15 to 24 years of age are among the most frequently cited indicators of the difficulty the young face in making a transition from schooling to full-time employment and becoming productive citizens and providers for their families.¹ The ILO (2004) reports that youth unemployment has risen rapidly over the past decade to reach 88 million worldwide, representing 47 percent of the 186 million persons out of work worldwide in 2003. The rates are typically higher the younger the job seeker, reflecting the difficulties the young face in making the transition to work. This pattern is common in both advanced and developing countries with the rates of unemployment gradually declining and stabilizing as young adulthood is reached around 25 years of age.

In countries where economic growth is weak and overall unemployment is high, youth unemployment tends to be relatively higher, especially among young women, as youth are among the first to be affected by slow growth and job creation. In the developing countries where the relative size of the youth population continues to increase, it adds to the pressure to create jobs once these youth are old enough to enter the labor force. Youth make up a substantially higher proportion of the labor force in developing countries than in industrialized economies.² However, evidence shows that even in developed countries that have passed through the demographic transition, youth today—though fewer in relative numbers—are facing a more difficult transition than their peers a decade and two earlier.³

Patterns of entry to work in developing countries have been changing with the advent of the Education for All initiative launched by the international community in 1990 at Jomtien, Thailand as more youth are enrolled and remain later in school.⁴ Labor force participation rates for young persons have decreased worldwide by almost 4 percentage points over the last decade.⁵ Full-time entry into the labor force is delayed by this pattern, but also youth are increasingly combining schooling with part-time work. Among children of the poor, work often begins earlier out of necessity for meeting household income needs. When this happens, timely enrollment in school is threatened. Although high youth unemployment rates signal the difficulty of the search for work and matching of youth and employer interests, most eventually complete the transition to employment as young adults, though the transition may be difficult and the outcomes for many less than satisfactory.

Policymakers in countries of all income levels are drawn to the problems of youths because of their concern for the political, social, and economic pressures created during their transition to adulthood. Unemployed youths face higher risks of engaging in illicit activities, and thus failing to acquire skills and experience during this critical stage of their development leading to concerns about longer-term employ-

1. ILO 2004; Lloyd 2005; OECD 2000.

2. ILO 2004.

3. Blanchflower and Freeman 1999:15, OECD 2000.

4. Lloyd 2005:287.

5. ILO 2004.

ment prospects for these youths.⁶ Transition patterns differ across regions of the world.⁷ Youth enter the labor force at different ages in different countries, and their experience also varies by gender. The sheer scale of the problem in terms of youths' share of the population makes the transition a serious concern to national policy makers with regard for political and social stability, and economic development.

This concern leads in the first stage to an emphasis on policies and programs that influence the youth's access to schooling, and in the next stage on the schools' ability to prepare them for the transition to work. The focus is on the schools' influence on the transition. Similarly, it brings attention to labor market policies and programs that have an impact on the youth's access to jobs and their further preparation for the world of work. Providing youths with skills for employment in school, and for seeking work after leaving school is viewed by policymakers as essential to a successful transition. For the youth who miss early education opportunities or make bad choices in acquiring education, second chance options for obtaining this education are potentially important to the transition.

In advanced countries, the secondary education schooling curriculum has had some vocational content for nearly a century, stimulated by the industrial revolution, and today, it is growing in importance at the tertiary level as well.⁸ For developing countries, the World Bank first began supporting investments in Technical and Vocational Education (TVE) in 1963.⁹ The assumption was, that through learning vocational skills at school the students could more easily find work on leaving school, and become more productive and trainable once in the labor force.¹⁰ Other investments, made outside the formal education system in non-formal training, provided by technical ministries, for-profit and not-for-profit institutions and enterprises, added a second "T" to create Technical and Vocational Education and Training (TVET).

A substantial literature has emerged around these investments in skills development evaluating their impact on the youth transition and labor market outcomes. This paper sets out to review the literature in advanced and developing countries and assess the impact of TVET on the transition to work. The focus is on efficiency criteria (pay and employment) in evaluating the transition. The review assesses whether the benefits of pay and employment exceed the cost of TVET provision. Where these criteria are not met, however, conditions may still favor investment in TVET on the basis of equity criteria. Programs for the disadvantaged, for example, may yield positive benefits, but less than their social cost. The distributional effects may justify investment. For an illustration of this, involving youth employment programs in the U.S., see Grub and Ryan (1999).

The literature is viewed in a life cycle framework that moves sequentially from initial schooling for entering the workforce to skills development that occurs later after one has entered the workforce. Attention is centered initially on formal schooling and curriculum choices and their impact on the transition to work. The review continues by looking at skills development in the workplace, the diversity of provision, the role of employers, and outcomes of efforts to overcome education failures and bad choices for skills development through second chance options.

6. Cunha, *et.al.* 2005.

7. Lloyd 2005:265.

8. Middleton, Ziderman, and Adams 1993; Johanson and Adams 2004; Lauglo and Maclean 2005.

9. Psacharopolous 1987.

10. Lauglo and Maclean 2005.

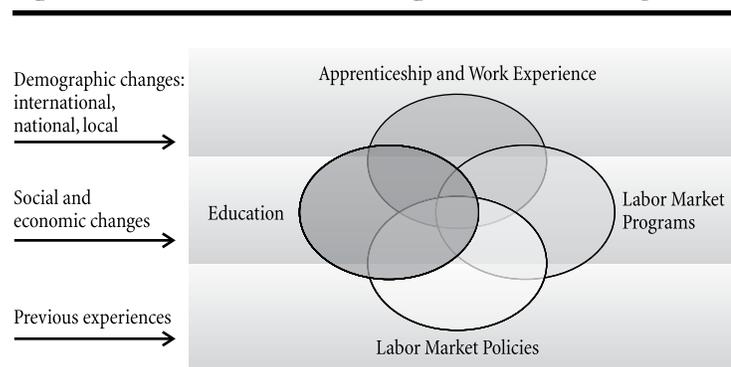
The Life Cycle Perspective

Figure 1, moving left to right, captures the flow of youth from early schooling to work and the policy and institutional forces that influence this passage. Early schooling is shaped within this framework by demographic, social, and economic forces influencing the availability and quality of the schooling offered. As an example, rapid population expansion against a background of slow economic growth can limit education opportunities and reduce their quality. The ability to take advantage of educational opportunities is in turn a function of a student's preparation and motivation for schooling as influenced by experiences in the home and community. Poor nutrition, health care, and lack of opportunities for childhood development, all potential consequences of poverty, can all diminish the learning outcomes from education and thus the readiness for entry to the world of work.

At the point of leaving school, new forces emerge to shape the transition. Figure 1 illustrates the passage from education into the labor market where outcomes are subject to early work experience, labor policies, and labor market programs that enhance labor supply and demand. The nature of early work experiences, particularly in building skills and creating pathways for career advancement, influences the transition. Apprenticeships have long been an instrument to provide these early experiences, to learn on the job and open employment opportunities. Models of formal apprenticeship, which are typical in advanced countries and function under the direction of employers and labor organizations, are joined in many developing countries by traditional apprenticeships which typically have an out-of-school youth working with master craftsmen in the informal economy.¹¹ Newer models that integrate early work experience in the school curriculum are emerging in advanced countries of the OECD, as are efforts to extend apprenticeships beyond traditional skilled and craft occupations.¹²

Labor market policies establish national norms of behavior for employers and workers. These policies extend, for example, to the setting of wage and non-wage benefits, hiring and firing provisions, health and safety measures, anti-discrimination provisions, and rules for labor organization and collective bargaining. These policies are a part of the investment climate that shape countries' incentives for investment and job

Figure 1. Four Elements Influencing Workforce Development



11. Johanson and Adams 2004.

12. Ryan 2001a.

creation.¹³ Policies intended to protect workers by setting minimum wages, providing job security, and promising high levels of non-wage benefits may protect some workers, but frequently at the expense of others whose productivity is not sufficiently high enough to pay for these benefits, including youth. Policies intended to benefit workers at large may have the opposite effect on the youth. Recognizing this, youth-friendly policies may be adopted providing sub-minimum wages encouraging employment and training, fixed-term contracts for lowering the cost of employment, and market-conscious non-wage benefits.

Labor market programs facilitate the operation of labor markets and address the needs of those encountering problems therein. Two types of programs exist: active and passive. The active programs, on the supply side, offer job counseling and search assistance, targeted remedial education, and non-formal training, and on the demand side, job creation with public works, targeted wage subsidies, and support for self-employment. The passive programs provide income protection for job losers. The combination and level of benefits of the programs vary among countries.¹⁴ Among active programs, remedial education and non-formal training offer second-chance options for young would-be workers who are unsuccessful in obtaining requisite skills for the workplace in formal schooling. At the same time, labor market programs help those who were successful in building this foundation obtain further training and skills to advance their employment. Labor market programs and youth-friendly labor policies join early work experience and formal education and training to shape the transition of youth to work.

Within this framework, the paper focuses on the trends and outcomes of education and training as first chance options for smoothing the transition to work. Moving along the lifecycle, the paper then examines efforts to blend school and early work experience to ease the transition to work, along with initiatives for skills development as part of labor market programs. The paper examines initiatives that build on early schooling foundations, as well as initiatives that provide second chance opportunities for those who initially fail to develop these foundations. The focus is on skills development for work, leaving aside skills development for what might be other social objectives.¹⁵ While youth-friendly labor policies and programs to facilitate labor market intermediation and create employment are part of this framework, these initiatives are not included in this review.¹⁶

13. For reviews of labor policies and their impact on employment see: World Development Report 2005b: pp. 136–156; Addison and Teixeira 2001; Nickell and Layard 1999.

14. See Betcherman, Olivas, and Dar 2004.

15. Social objectives include overcoming gender bias in employment, motivating low achievers, solving youth unemployment, overcoming labor market problems of the disadvantaged, and reducing demand for costly higher education. See Middleton, Ziderman, Adams 1993.

16. For reviews of labor market programs see: Betcherman, Oliva, and Dar 2004; Betcherman, Dar, Luinstra, Ogawa 2000; Martin and Grub 2001; Ryan 2001a; Bowers, Sonnet, Bardone 1999; Dar and Tzannatos 1999.

Preparing for Entry to the Workforce

Historically, training for productive employment has been a private matter. Individuals acquired skills through apprenticeship or on-the-job training and financed their training through reduced wages during the learning period.¹⁷ Employers were actively involved in the training. The industrial revolution of the 19th century changed the structure of employment. A hierarchically organized work force, in which entry-level jobs required relatively few skills but a high level of industrial discipline, replaced the single craftsman who personally carried out all the tasks associated with a product. In the early part of the 20th century education reformers introduced vocational preparation to the curriculum of secondary education, and the vocational school was born. This pattern soon spread to Europe. From these origins it was a short step to the common wisdom of the 1950s and 1960s that governments in developing countries needed to expand their investment in vocational skills.

Secondary education accommodated vocational preparation in different ways. Typically, lower-secondary education offered general vocational skills and awareness and appreciation of the world of work, while upper-secondary technical and vocational education included courses preparing youth for entry level, semi-skilled employment, covering a wide range of occupations. The former was often described as pre-vocational education. Those taking a technical and vocational curriculum could expect to enter the workplace on completion of their secondary education with few likely to progress to post-secondary education. In fact, in many cases, pathways did not exist for progression to post-secondary education from a secondary vocational education, leaving students at a “dead-end” for further education. This schooling contrasted with what was called general secondary education providing broad knowledge and basic skills in mathematics, sciences, and communications. Students pursuing this academic path were generally expected to continue to post-secondary education.

Following this development, the early efforts to combine vocational and general curricula led to what Lauglo and Maclean (2005) call the vocationalization of secondary education. Sometimes referred to as “diversified secondary education,” this was expected to improve the relevance of a general secondary education for employment by including a small number of vocational courses in the curriculum. Students could continue to post-secondary education, but also have some basic understanding of an occupational skill to improve their chances for employment, if this pathway were chosen. A distinctive feature of vocationalized secondary education was that vocational subject matter took only a minor portion of total curriculum time, typically one-tenth to one-fifth.¹⁸ Diversified secondary education differed from technical and vocational secondary schools where a student’s schedule was dominated by practical skills learning and related theory. The total hours in a vocational school typically exceeded that in a general secondary school as more time was needed for practical exercises.

17. Middleton, Ziderman, Adams 1993:37.

18. Lauglo and Maclean 2005:4.

As the skills content of jobs increased with the adoption of modern technologies, and as the number of students completing a secondary education in advanced countries grew, more vocational content was introduced at post-secondary levels. In the United States, the two-year community college came to symbolize this pattern in the 1960s providing higher levels of skills to workers. For many developing countries this shift is yet to happen as completion rates of primary education remain low along with access to secondary education. Another difference was the lower level of urbanization and industrialization and the demand generated for vocational graduates. The model of employment for these graduates was the so-called “modern-sector” marked by large public and private enterprises using modern production methods. This type of employment often represents less than a quarter of total employment in developing economies where employment is mainly in small-holder agriculture and urban informal sector comprised of small enterprises and the self-employed, that mostly operate outside prevailing industrial and labor regulations.

Vocational schooling preparing youth for entry-level employment has been part of the education culture. Unlike the historical development of skills in enterprises through apprenticeships and on-the-job training, vocational schooling followed the education model with the use of credentialed instructors, time-based delivery, and academic degrees issued on satisfactory completion of an approved curriculum. Enterprises, however, tend to be less interested in the academic credentials of the instructor and more interested in the level of practical knowledge and competence brought to the instructional task. Competency and mastery of the trade are more important than the time spent in instruction. The quicker the goal is achieved, the better it is both to the enterprise and the worker from a cost perspective. Recognition of the worker as a journeyman or craftsman does not come with an academic degree. These differences have come to distinguish the two cultures of skills development identified as education and training.

These cultures carry different status. The education culture with its emphasis on credentials, time-based delivery, and academic degrees tends to be favored over the training culture with its focus on competency, efficiency in delivery, and skill certification. Preparation of youth for work can be accomplished by using a master craftsman who may lack academic degrees, but who nevertheless has acquired advanced knowledge of his or her trade and has the ability to convey this knowledge to the young worker through practical exercises, and to certify the level of skills acquired. However, the lack of recognition accorded these skills by formal education and the ability to use the knowledge for entry to further formal education often leads young persons and parents to favor the education track. Where TVE does not lead to further education it, too, may be accorded a second-class status like the training culture.

Trends in TVE Development

UNESCO’s Global Education Digest 2005 indicates that secondary education is expanding rapidly worldwide with enrollments climbing from 321 million in 1990 to 492 million in 2002/2003. As more young people complete basic education, demand for post-basic education will doubtless grow as well, along with questions about the vocational content of this education. Patterns of TVE enrollment vary widely as shown in Table 1. TVE plays a larger role in Europe and Oceania (comprised of the Pacific islands, including Australia and New Zealand), reflecting different regional approaches to preparing youths for the transition to work. The distribution of TVE enrollments tends to be bimodal with one cluster of countries enrolling 25 percent or more of secondary students in TVE, while another set of countries tends to enroll 15 percent or less of the students. See Annex A for specifics. Belgium and the U.K. are typical examples of European countries with high levels of TVE secondary enrollments, 59 percent and 54 percent, respectively, whereas countries like South Africa, Canada, China, India, Japan, Malaysia, New Zealand, Thailand, and Russia

all fall below the 15 percent enrollment figure. No figures are available for the U.S., but its TVE enrollments are likely to mirror those of Canada and fall into the lower cluster.

Deferring Vocational Specialization

Annex A reveals another pattern that cuts across regions and countries. This is the clustering of TVE enrollment in upper secondary education. While there is pressure from some educators to start vocational preparation as early as junior secondary education, the pattern globally is to defer specialization until senior secondary education. Pre-vocational education, as it is described at the lower secondary level, does not attract the percentage later enrolled at the upper secondary level. Notable exceptions to this pattern are Mexico and Mozambique each with higher percentages enrolled in lower secondary vocational than in upper secondary vocational. Countries that have low secondary TVE enrollment shares tend to have higher shares of TVE enrollment at the tertiary level.

Capturing TVE-related enrollments at the tertiary level is difficult as statistical agencies have only begun to develop measurement instruments.¹⁹ UNESCO's Institute for Statistics (UIS) is the lead UN agency for education statistics. Focusing primarily on public provision, UIS distinguishes tertiary education by (i) programs that lead students to further levels of education and are normally general education and (ii) programs that lead to the labor market and out of formal education. Conservative estimates of tertiary education that is labor market-oriented hover around 25 percent.²⁰ At the top end of the range are countries like Belgium (51.4 percent), Kenya (49.9 percent), Malaysia (47.3 percent), Mauritius (55 percent), and Slovenia (48.8 percent). At the low end are countries such as Finland (5.6 percent), Germany (15.2 percent), Italy (2.4 percent), Mexico (2.9 percent), the Netherlands (1.5 percent), and South Africa (14.3 percent).

Improving Articulation with Further Education

Numerous countries have taken steps to improve the articulation of secondary vocational education with higher education, thus changing the “dead-end” image of vocational education. This image has led to vocational education at the secondary level being viewed by students and parents alike as “second-class” education resulting in low enrollments and high dropout rates. Many countries in Latin America have introduced articulation reforms, as have those in other regions. In Tunisia, for example, top vocational students can continue to university studies. South Korea has also taken steps to improve the articulation of secondary vocational education with further education. See Box 1. South Africa has upgraded previously terminal TVE to qualify for higher education. In Europe, Denmark has gradually opened up higher education to

Table 1. Percent of Secondary Students Enrolled in Technical and Vocational Programs by Region: 2002/2003

Region	Percent of Secondary Students Enrolled in Technical and Vocational Programs
Africa	11
North America	6
South America	7
Asia	7
Europe	25
Oceania	35

Source: UNESCO Global Education Digest 2005, Table 5:74–82

19. Ellis 2005.

20. Ibid. pp. 22–34.

technical education graduates. In the U.S., two-year community colleges with high vocational content are by design a stepping stone for many students to the labor market or for continuation to a baccalaureate degree. On the other side, however, Eritrea has proposed detaching TVE from general secondary education to prevent it from becoming the usual “detour” to higher education. In a few countries, pathways have been opened from apprenticeship to further education. Countries like Austria and Switzerland have recognized completion of apprenticeship for entry to tertiary education. The U.K. offers this option for selected apprenticeship programs.²¹

To ensure an ability to enter future education after completion of a vocational curriculum, some OECD countries have developed double-qualifying pathways that provide qualifications for work and later education. Steps have been taken to increase permeability between different programs that allow young people to keep their options open for as long as possible. Austria and Norway have developed double-qualifying pathways, and in both countries, overall participation rates in technical and vocational education have been rising. Permeability between different programs has been promoted by broadening the entry points to vocational education and training providing opportunities to cross from one program to another with minimal loss of time and also by the broadening of curricula to cover a wider range of related occupational tasks before a specific occupation is chosen. This approach is most typically found in the Nordic countries and in apprenticeship countries, especially in Germany.²² Canada, Japan and the U.S. have developed integrated pathways providing academic courses of study that satisfy entrance requirements for four-year colleges and prepare students for employment through new forms of work-based learning linked to the school curriculum.

Blending General and Vocational Curricula

Much is made of the dichotomy of general and vocationally-oriented education, but as suggested by Bishop and Mane (2005), the two can complement rather than substitute for each other. The trend in advanced countries is to move toward blending instruction, so that vocational students receive more academic content to broaden their occupational focus and general students are given more opportunity to apply academic principles to practical problems.²³ Botswana, for example, has re-oriented its pre-vocational content toward research, investigation, creative thinking, and problem solving.²⁴ Wilson (2005:84) asserts that one of the effects of globalization has been the increasing convergence between academic and vocational education. This is reflected in policy, practice and curriculum development. As part of initiatives to broaden choices for students and reach the widest possible range of young people, reforms have been introduced to enhance integration between vocational and general or “academic” education.²⁵ Bowers, Sonnet, and Bardone (1999:27) describe reforms at upper secondary and tertiary levels to meet this objective in a number of OECD countries.

Shifting vocational content to later stages of schooling is a different form of blending that allows more time for general content as a foundation for later occupational specialization. The shifting of vocational content to later stages of schooling helps avoid early tracking of students into vocational programs before an informed career choice can be made. Tech-Prep programs in the U.S. are an example of how this prin-

21. Ryan, Gospel, and Lewis 2005.

22. Bowers, Sonnet, Baredonne 1999: 27.

23. Ryan 2001a:74.

24. Weeks 2005:138.

25. Ryan 2001a:74; Bowers, Sonnet, Bardone 1999:26–27; Wilson 2005:82–83; U.S. Department of Education 2004:5.

Box 1. The Republic of Korea Opens New Pathways for Graduates of Secondary TVET to Dispel its Second-Class Image

The Republic of Korea began to expand its investment in TVET just as labor shortages started to pinch the economy in the early 1980s. To make the “big push” into export-oriented manufacturing, construction and service-oriented sectors, the country needed a new stream of skilled workers.

At the same time, policy-makers were alarmed by a growing appetite for higher education. They feared people would become “over-educated”, expecting white collar jobs in an economy thirsting for new sources of skilled labor. By expanding TVET, the government hoped to satisfy the need for skilled labor while reducing pressure on universities to enroll more students.

Today, about 40 per cent of secondary students are enrolled in TVET. Government has attempted to dispel the second-class image of this education by opening new pathways to higher education. TVET students are now getting a healthy dose of academic subjects so that they can apply to university. In some schools, academic and vocational students share as much as 75 per cent of a common curriculum. The government is channeling public and private investment into new post-secondary training institutes to kill the myth that TVET is an academic ‘dead-end’.

Source: *Education Today Newsletter* April–June 2005, UNESCO.

ciple can be applied to help students make the connection between school and employment. Programs in broad occupational fields like the health professions, automotive technology, computer systems networking, etc. are offered with the sequence of general technology studies beginning as early as the ninth school year and progressing through two years of tertiary education or an apprenticeship program of at least two years following secondary instruction, culminating in an associate degree or certificate. The progression is from general to specific technologies allowing for more flexibility and informed choices of career pathways along the way. Using longitudinal data from the U.S. and controlling for selection and within-family spillovers, Cellini (2006) finds that Tech-Prep programs increase educational attainment by helping students complete high school and encouraging enrolment in two-year colleges.

Strengthening the Connection of School and Work

The building of greater complementarity between general and vocationally-oriented education occurs through reforms that combine schooling with apprenticeship and work experience. Career Academies in the U.S. are an example of this type of combined initiative. Organized as small learning communities in secondary schools, the Career Academies combine academic and technical curricula around a career theme and establish partnerships with local employers to provide work-based learning opportunities. There are estimated to be more than 2,500 Career Academies across the U.S. Careful evaluations using random assignment suggest that they reduce dropout rates and improve school engagement among students least likely to do well in a regular school environment. They are found to improve the labor market prospects of young men, but not necessarily those of young women.²⁶

Ryan (2001a:74) identifies other country initiatives bringing education and the world of work closer together. Japan has begun to introduce more diverse models of secondary education to appeal to a wider

26. Kemple 2004.

range of students. Its integrated senior high schools give students more flexibility to take electives based on vocational interests. France offers apprenticeship-based routes to public vocational qualifications as an alternative to school-based ones. The Netherlands is adding more educational content to apprenticeships and Sweden is introducing mandatory work experience in upper secondary education. These initiatives combining school and work more closely join the long-standing examples of Germany and Japan illustrated below. New initiatives, also described below, are being introduced to extend the apprenticeship concept to a wider range of occupations providing skills in growth sectors and to population groups that normally do not participate in formal apprenticeships. National youth service programs found in a number of countries offer another means for connecting school and work experience.

Apprenticeship and Work Experience

School leavers often struggle to find employment. Steps to build bridges between school and work are part of the solution to this problem. Two of the most successful countries in addressing the problem, Germany and Japan, use quite different approaches, but both share the common feature of tightly linking schools and employers. In Germany, the “dual system” model combines part-time schooling with work and apprenticeship. Employers and worker organizations play a key role in making the model work. In Japan, the model is full-time schooling followed by full-time employment in enterprises closely connected with the school. Schools act as a screening mechanism for the employers. The schools provide academic skills, while formal training is provided by employers. The screening process increases the incentive for high school students to perform well in school and gives employers confidence in their potential workers. This arrangement works well for those who remain in school, but does not meet the needs of those requiring “second-chances.”

Both models benefit from their particular cultural setting and therefore may not transfer easily to other countries, but they each demonstrate the possibility of building bridges between school and work that makes the transition easier for youth. Germany has attempted to transfer its model to a long list of developing countries in Asia, Africa, and Latin America, but without a clear record of success. Transferring the dual system with part-time schooling and formal apprenticeship has proven challenging in developing countries due to (i) the small shares of employment in the modern wage sector of these countries, (ii) the slow growth of wage employment and jobs for new apprentices, and (iii) weak institutions for implementation of apprenticeships.²⁷ The Mubarak-Kohl initiative in Egypt, launched in 1995, to introduce the dual system, illustrates the challenges. The ILO reports the resistance of the public education system and the absence of private sector umbrella organizations to manage joint training courses. The initiative is criticized as “...relatively expensive, highly gender unbalanced, staffed by teachers rather than practitioners, and producing graduates who often pursue university studies rather than fill skilled labor jobs.”²⁸

The expansion of self-employment and the growth of micro-enterprises in the informal sector have accounted for an increasing share of employment in many developing countries over the past quarter of a century. In the countries where this applies, the growth of wage employment in the modern sector has been slower. In this context, traditional apprenticeships have been widely used to facilitate the transition of youth to work. Traditional apprenticeships, representing individual contracts for training between the youth or parent and a master craftsman, often outnumber public training places. In Ghana, 80 to 90 percent of all basic skills training comes from traditional apprenticeships, compared with 5 to 10 percent from public

27. Johanson and Adams 2004.

28. van Eekelen, de Luca, and Ismail 2001.

training institutions and 10 to 15 percent from non-government sources.²⁹ In West Africa, it is not unusual to find more apprentices than wage employees in informal sector firms.³⁰

Formal and traditional apprenticeships are concentrated in craft and technical occupations, in industry and construction. Steps were taken in the 1990s to expand apprenticeship and work experience to a wider number of youths in non-traditional occupations. Programs providing financial incentives to employers and students were introduced to encourage the linking of classrooms and work. The Modern Apprenticeship program in the U.K, launched in 1994, expanded apprenticeship beyond traditional craft and technical occupations. New apprenticeships were offered in business administration, retailing, catering, personal care, and information technology. These new areas now account for half of the participants in the 15 largest training programs under the Modern Apprenticeship Program. Women constitute nearly half of apprentices.³¹ The Learnership Program of South Africa, adopted in 1997, opens theory and practical experience in all fields of learning. New Apprenticeships in Australia in 1998 combined practical work with structured training leading to a nationally recognized qualification in more than 500 occupations.

Efforts to expand pathways between schooling and work through apprenticeship have produced mixed results, but with the strongest impact found for employment. A comparison of the outcomes of formal apprenticeship with those of alternative school-based pathways to qualifications in France, the U.K., and the U.S. finds apprenticeship associated with selective improvements in early labor market experience.³² In France, ex-apprentices spend more of their early working lives in employment, but attain lower pay at the end of five years. Positive employment effects exist in the U.K. and apprenticeship is also associated with higher pay, but only for males. Strong pay effects are also found in the U.S. for young adult males compared with those in full-time tertiary studies. Apprenticeship achieves less for women in terms of entry rates, occupational access, and subsequent labor market outcomes. Evaluation of wage effects for women is distorted by occupation-specific pay effects. In general, when apprenticeship is compared with the alternative of regular employment and participation in labor market programs, it fares much better in producing gains in pay as well as employment.³³

Traditional apprenticeships have not been as carefully evaluated. Much of the evidence for these programs is descriptive based on case studies. The main strengths of traditional apprenticeship is its practical orientation, self-regulation, and self-financing. These apprenticeships also cater to individuals who lack the educational requirements for formal training, service important target groups (rural populations and urban poor), and are generally cost-effective. Their disadvantages have to be weighed against these strengths. Traditional apprenticeship is gender-biased, screens out applicants from the poorest households, perpetuates traditional technologies, and lacks standards and quality assurance.³⁴ In many countries and business environments, traditional apprenticeship has served the informal sector well, but is proving too narrowly focused to cope with the increasing challenges of technological change, skills upgrading, and expanding markets.³⁵ Traditional apprenticeships tend to perpetuate older technologies with master craftsmen failing to keep up with technological change. Steps to improve traditional apprenticeship include improving

29. Atchoarena and Delluc 2001: 225.

30. Haan and Serrier 2002: 50, 57, 133.

31. Ryan 2001b.

32. Ryan 2001a and 1998.

33. Ryan 2001a: 77-78.

34. Johanson and Adams 2004:132.

35. Ziderman 2003: 154.

literacy and basic education content to promote trainability and adaptability of apprentices and master craftsmen, opening access for master craftsmen to acquire new technologies and improve their pedagogical and technical skills, and certifying skills attained as a benchmark for skill quality and portability.³⁶

Beyond apprenticeship, work-based learning as part of the school curriculum has expanded in a number of OECD countries. Bower, Sonnet, Bardone (1999) report that work experience as part of secondary education has been reinforced in countries like Sweden, Norway, and the Netherlands. In Sweden, vocational studies involve unpaid internships in structured work placements occupying 15 percent of the student's time. Recruiting employers to offer internships has proven challenging. In Australia, school-industry programs have been introduced to provide students with structured learning in a workplace during the senior year of secondary school. This learning is assessed and accredited as part of their schoolwork. Participation in the program was initially disappointing with only 12 percent of eligible students participating, but the outcomes have been promising. Evaluations point to enhanced student motivation, confidence, and satisfaction, along with improved personal and practical skills and time-management. Unemployment rates of participants in one selected program were roughly half those of non-university-bound school leavers, and students were subsequently 50 percent more likely to be involved in further education and training through apprenticeship, traineeships, or other forms of study.³⁷

National youth service programs in a number of countries offer community service and work experience for secondary and tertiary students, but also other youth target groups.³⁸ In Nigeria's Youth Service Corp, all university graduates serve one year in a different part of the country from where they grew up. In Costa Rica, university students and their professors work on problem-solving activities in needy communities. They serve for several months in areas such as public health and science, in legal assistance, and heritage programs that aim to preserve the traditional values of the region. In Botswana, high school students who are going on to university, serve for a year, often in remote villages living with local families and working on such areas as health and education. South Africa's National Service Corps plans to take in unemployed young people for a period of training followed by up to one year of public service work. These programs serve a mixture of objectives ranging from promoting social cohesion, alternatives to military conscription, providing public services governments cannot afford to deliver, to enhancing self-confidence, skills, and employability of youth participants. Few national youth service programs have been rigorously evaluated against these objectives, but anecdotal evidence is favorable, particularly where national service is voluntary.

Overall, attention to apprenticeship and structured work experience as means to promote the school to work transition has grown over the past several decades to join the continued emphasis on school-based vocational programs for entry-level skills. Evidence favors these programs, but with qualifications. The sharply different approaches of Germany and Japan to the timing of schooling and work illustrate that different models can perform well under the right conditions. Employment growth is a key ingredient to demand for apprentices and interns. Employers are unlikely to take on board large numbers of youths for training when conditions for sustained employment are not present. In Iran, the *Kardanesh* program in secondary education, combining school and work, has faced difficulties due to the lack of job creation and demand for apprentices.³⁹ The strongest evidence favoring formal apprenticeships is their positive impact on employ-

36. Johanson and Adams 2004:132.

37. Bowers, Sonnet, Bardone 1999: 28.

38. Eberly 1998.

39. World Bank 2005a.

ment, but largely for young men. The impact on earnings is more problematic, again especially for young women. Traditional apprenticeships have proven cost-effective for delivering skills in an informal economy, but face problems of quality and transfer of new technologies in modern economies. Steps can be taken to improve traditional apprenticeships. The challenge remains to expand apprenticeship and work experience beyond the traditional craft and technical trades. Efforts to do so, cited above, have shown some success.⁴⁰

Impact of TVE on the Transition to Work

As noted earlier, expectations were that technical and vocational education offered in secondary schools make it easier for the students to find work on leaving school, and become more productive and trainable once in the labor force, thereby increasing their earning potential. Other expectations were also expressed for TVE. Faced with a need to limit enrollment to costly post-secondary education, secondary schools and TVE were meant to decrease this demand by placing students on a track leading to the labor market and employment instead. Policymakers were also quick to see TVE as a solution for broader social problems of employability of the disadvantaged, gender bias in employment, and youth unemployment, without considering whether these problems had their root causes in a lack of skills or in other social and economic factors.

Middleton, Ziderman, and Adams (1993) found limited evidence to support the effectiveness of TVE in addressing social objectives and concluded that TVE was more effective where it was focused on providing skills closely matched with existing employment opportunities. Evidence in developing countries revealed that TVE can improve employment of the academically disadvantaged when secondary enrollment ratios are high and unemployment is low.⁴¹ Secondary enrollment in most developing countries is low, however, with successes in Education for All initiatives over the past decade only now beginning to shift the attention of governments, bilateral and multilateral development agencies to post-basic education. Employment growth is also important to the success of TVE in reducing demand for post-secondary education. In countries like South Korea, China, and Mozambique, where job growth has been sustained in recent years, demand for TVE has been strong, but in countries where job growth is limited, demand for TVE tends to be weak.⁴²

TVE appears to have a limited impact on changing gender patterns of employment. Women tend to enroll in traditional white-collar trades such as secretarial and clerical studies, beauty care, sewing and fashion design, and handicrafts, while men are overwhelmingly clustered in blue-collar fields of study like motor vehicle mechanics, electricity, carpentry and woodworking, masonry, and other technical and craft fields. Women are reluctant to enroll in TVE courses where employment is traditionally male-dominated, and when they do, they often face difficulties in finding more than self-employment. Cultural factors play an important role in this behavior. To tackle this issue, actions on the demand side of labor markets through anti-discrimination measures are more likely to encourage women to enter into non-traditional fields of study. Exceptions are found in newer occupational categories such as information technology where employment has not had time to form gender-specific patterns. Shocks and labor shortages such as those created in the United States in World War II also can break down traditional employment barriers.

40. Australia Department of Education, Science, and Training 2004: 55ff; Anderson and Metcalf 2003: Smith, Jennings, Solanki 2005.

41. Middleton, Ziderman, Adams 1993:51–67.

42. *Ibid.*, Billetoft and AUSTRAL Consultoria e Projectos 2005, Copenhagen Development Consultants A/S 2005. Exceptions to this pattern exist where TVE provides an alternative way for young people to enter into higher education.

The question is often asked whether choosing a vocational schooling curriculum over one of general education improves the employment and earnings of youths. Ryan (2001a) has reviewed experiences in seven advanced economies and offers findings that are mixed for employment and pay. Such evaluations face the difficulty of controlling for unseen differences in the characteristics of those pursuing the vocational and general curriculum tracks. Random experimental assignment to a particular track as a means for controlling for these differences is rarely possible for reasons of social equity. The tendency to channel low achievers into TVE and the difficulty of controlling for this in assessing the outcomes of general and vocational education with quasi-experimental evaluation methods can bias downward observed outcomes for TVE.⁴³ This review relies heavily on evaluations attempting to control for selection bias and identifies this literature where used.

Sorting out the impacts of vocational and general education also involves other methodological issues. Without the benefit of longitudinal data, studies frequently focus on the short-run outcomes on employment and earnings. They do not test whether these outcomes are altered in the longer run by differences in the two curricula in terms of the adaptability of workers to technological change. Another question, less frequently asked, is whether the failure of TVE programs to achieve their employment objectives is attributable to poor design or poor implementation. Programs that are well designed may not be implemented properly and as a result fail, while programs that are implemented well may fail because they are not designed to fit the problem at hand. Larsson (2003) finds examples of both in Swedish labor market programs. Tzannatos and Dar (1999) note that implementation, staffing, and other institutional issues are often not included in evaluations.

Ryan's focus is on studies that attempted to control for unseen differences in treatment and control groups. In the United States, France, and the United Kingdom, studies using rigorous controls for these differences indicate that the vocational curricula are only selectively associated with higher pay, while the employment effects are much stronger. Some participant groups and some occupations benefit more than others, notably females taking commercial courses and others who find employment in the occupations for which they have been prepared.⁴⁴ At least in the case of France, the wage effects proved to be larger at the post-secondary level. The positive employment effects of a secondary vocational curriculum are considered robust, since the selection bias toward low achievers favors there being no employment effect observed. The weaker wage effects of the vocational curriculum, offset by stronger employment effects, lead to uncertainty around cost-benefit ratios for the two curriculum tracks. Evidence from developing countries points to unfavorable cost-benefit comparisons for secondary vocational education.⁴⁵ The evidence is more favorable for post-secondary education with stronger wage and employment effects.

Other evidence is found supporting the payoff to TVE in helping youth in the transition to work. Bishop and Mane (2005) analyzed longitudinal data from a national follow-up survey of U.S. high school students between 1988 and 1992. Using regression techniques, they found no economic benefit for introductory level vocational courses, but benefits were found for advanced vocational courses. Students taking advanced courses spent more time in employment, got better jobs, and earned more when compared with those who took only "academic" courses or a combination of academic and personal interest courses. The estimated benefit-cost ratios for advanced courses were high.⁴⁶ These results were attributed to the rising demand

43. Friedlander, Greenberg, and Robins 1997; Heckman and Smith 1996.

44. Ryan 2001a:74; Ziderman and Neuman 1999.

45. Psacharopoulos 1987.

46. Ryan 2001a:38.

for higher skill levels, improvement in the quality of courses, and schools having become more proactive in outreach to employers. They were also influenced by the better grasp of general education skills than found among vocational students in many developing countries and the lower unit cost associated with wider access to secondary education and participation in vocational programs, conditions difficult to replicate in many developing countries.

Much of the unfavorable evidence for secondary vocational education in developing countries, apart from the poor quality of the TVE offered, appears to rest with slow jobs growth and weak demand for employment. TVE was introduced in developing countries to promote skills for industrialization and where this has not happened it has been slow to respond to the different skill needs of the informal economy that has grown in its place. Small modern sectors in these countries with high degrees of informality in employment translate to low demand for TVE, but where job growth and labor shortages in the modern sector are found, as recently illustrated by Mozambique, TVE graduates are more easily absorbed into employment. This happens even with evidence confirming the low quality of the TVE offered.⁴⁷ Ziderman and Neuman (1999) show that the payoff in Israel to investment in TVE skills is higher where TVE graduates are placed in jobs that use the TVE skills acquired. This finding illustrates the importance of strong linkages between schools and the workplace so that the curriculum and supply of skills developed are closely aligned with the skills in demand in labor markets. Criticism of TVE in developing countries is often based on the lack of relevance of the TVE skills to the jobs available and the absence of incentives for bringing the supply of skills more closely in line with demand.

In some cases, even when there is evidence of a limited payoff of TVE, the policymakers are still pushing for vocationalization of secondary education on grounds of improving the relevance of the education to work.⁴⁸ Evidence developed by Psacharopoulos and Loxely (1985) for Tanzania and Columbia shows that there is little payoff in terms of employment in these cases, if only a small number of vocational courses is introduced to the general curriculum. Lauglo and Maclean (2005) in a review of vocationalization of secondary education in Kenya, Ghana, and Mozambique support this finding.⁴⁹ These findings strengthen the conclusion that diversified secondary education with a vocational “lite” formula does not offer an advantage where the transition to work is concerned. As an only exception, ICT/computer skills, which are increasingly integrated in general education, are becoming a necessary form of vocationalization in secondary schools with their broad learning and occupational applications.

Reference to the strong general education foundation underlying advanced vocational courses suggests a complementary rather than a substitutionary relationship between the two tracks. In advanced countries, this is achieved by pushing vocational content later in the secondary schooling experience, or as noted earlier, into the first two years of post-secondary education, building on a foundation of general education. This reduces the early tracking of students into vocational education before they are ready for such choices, and instead increases their opportunities for different career choices at a later time. This approach, however, is difficult to introduce in low-income countries where access to secondary and post-secondary education is already limited.

While not improving employment, the attraction of vocational content in the curriculum may lead some youth to remain in school longer than they might have with an academic curriculum. Vocational advocates

47. Household surveys show that TVE graduates find better employment and earn more than graduates of general education. Billetoft and AUSTRAL Consultoria e Projectos 2005; World Bank 2004.

48. Dar, *et.al.* 2005.

49. Lauglo and Maclean 2005.

argue that allowing students to start preparation for their chosen career in upper secondary school provides for greater choice and increases the share of young people who choose to stay in school when they are past the compulsory schooling age.⁵⁰ Bishop and Mane (2005:332–340) summarize evidence of this from OECD countries and report that a 10 percentage point increase in the share of upper secondary students in vocational and pre-vocational programs is associated with a 2.6 percentage point increase in the high school graduation rate and a 1.9 percentage point increase in the proportion of 15–19 year olds in school. They suggest that one of the possible reasons for higher school attendance in Northern Europe than in Canada, the U.S., Spain, and Portugal is the lower share of students in vocational programs in these four countries.

Thus, does TVE payoff in facilitating the transition to work? The answer from numerous evaluations is that it can, under the right conditions. TVE alone, however, is unlikely to solve the social problems of restructuring gender-biased patterns of employment or meeting all the needs of disadvantaged youth. Strategies that push vocational content earlier in the curriculum and vocationalize the curriculum with “lite” offerings of TVE amidst general education do not show evidence of connecting youth with jobs or improving their earnings prospects. However, they may lead to higher educational attainment that has to be valued for its own benefits apart from those of immediate employment. Good quality TVE that is closely linked with strong employment growth and aligned with the skills in demand in labor markets can payoff for youth. The payoff is more assured for obtaining employment than for higher pay, but pursuit of advanced vocational skills can lead to both. Building TVE on a strong foundation of general education by pushing vocational content later in the secondary and post-secondary curriculum shows evidence of higher benefits in relation to costs. Ending labor market discrimination will be important to assuring equal benefits to young men and women.

50. Advisory Committee for the National Assessment of Vocational Education 2003: 2 in Bishop and Mane 2005: 333.

Upgrading Workforce Skills

The movement from schooling into the workforce for youths brings with it a new set of actors and challenges for skills development and sustained employment. Rather than focusing on the provision of entry-level skills to obtain employment, attention turns to other objectives: (i) upgrading workforce skills for the employed, (ii) meeting the skill needs of the unemployed, (iii) empowering others with skills for occupational change, and (iv), responding to the skill needs of the disadvantaged with “second-chance” options for developing qualifications. The needs of older workers facing the forces of change are merged with those of young workers. Employers, who are already engaged in apprenticeship and structured work experience for youths, play a large role in the provision and financing of training to meet these objectives. They are joined by public and private formal education institutions and technical ministries (labor, industry, agriculture, etc.) and for-profit and not-for-profit trainers that diversify programs and modes of skills delivery to meet these diverse needs.

As the mix of actors in training provision changes, so does the manner in which skills are imparted. Lengthy time-based schooling programs leading to academic credentials that articulate with further education give way to short-term, modular, competency-based programs that enable the participant to acquire requisite skills in minimum time and at minimum cost in lost earning from employment. These programs allow flexible entry to and exit from the training on a just-in-time basis and are well suited to a rapidly changing economy and technological environment. The programs allow skills development to continue as the worker ages in a life-long learning framework. The training may be delivered in a workplace on-the-job or outside in a classroom or in combinations of the two by instructors who are hired on the basis of the qualifications they bring to the learning rather than academic degrees. The competencies sought are measured against occupational standards set jointly by employers and skill providers, more often as part of a national qualifications framework that puts different providers on a level playing ground in judging their ability to meet these standards.⁵¹

The above are characteristics of the second “T” in TVET and are generally recognized as different from the TVE offered in secondary and tertiary school settings for pre-employment skills. The mix of institutions involved in the “T” serve a more diverse set of clients and objectives. The “T” is generally identified as non-formal training because it is not connected with an academic degree as is TVE and does not link directly with further education, although such a linkage may be possible within a national qualifications framework. A final point of distinction between education and training may be in their financing. The case for public financing of education is generally considered stronger than that for training as the social benefits of education are said to be greater than those of training, although the argument is surely more complex than this. The case for private financing, for example, rises with the level of education as more benefits are captured by

51. For an illustration of the difficulty faced in setting occupational standards and implementing national qualification frameworks in the U.K. see Ryan, Gospel, and Lewis (2005).

the individual than society, whereas non-formal training, especially when targeted to disadvantaged groups, may yield substantial social benefits providing a rationale for public financing.

A host of public and private institutions outside the training organizations play important roles in TVET. Central statistics agencies, administrative data from labor market programs, monitoring and evaluation bodies, public and private employment services, labor media, and school counselors help provide labor market information to a training market about what kind of jobs and skills are in demand, what employers are willing to pay for the skills, and where these jobs are found. Occupational standard setting bodies provide guidance to training organizations on the skills that need to be taught, helping curriculum bodies design curricula that are relevant to employers' needs. Testing and certification organizations with qualification authorities help assess the success of trainers and trainees in meeting these standards and serve as guides to quality of training and readiness for employment, and promote the portability of skills. Still other organizations may license and accredit the quality of training organizations providing valuable information to trainees and employers. Regulatory bodies exist to provide protection for consumers of training and promote an orderly training market.

Among these institutions, the evolution of national qualification frameworks (NQFs) like those found in the U.K., New Zealand, Australia, and more recently, South Africa is viewed by policymakers as a potentially important institution for improving the articulation of education and training, promoting lifelong learning, achieving equity in employment and educational access, and improving labor mobility and efficiency through accrediting all types of past learning against standards set by employers. Different pathways to a skill, e.g. classroom, apprenticeship, on-the-job, can be assessed against a standard to assess their cost-effectiveness and equivalency. There is growing interest in the NQFs among the developing countries. The potential benefits of NQFs are appealing, but experience has shown the difficulty of their implementation in advanced countries with even more difficulty expected in developing countries.⁵² NQFs and other institutions serving training markets have been assembled in some countries under tri-partite National Training Authorities (NTAs) responsible for policy development and implementation. NTAs have become increasingly popular in developing countries as an instrument of training reform with the encouragement of the World Bank.⁵³ See Box 2.

Through institutions such as NTAs, other stakeholders have become partners with governments in training. While the models may vary, governments hold primary responsibility for policy development and take a lead in promoting the orderly operation of training markets through regulation and institutional development and ensuring equitable access to these markets. Rather than relying solely on public provision, new models of competition have emerged. Employers, worker organizations, and civil society as stakeholders are taking part in policy development and assuming larger roles in provision and financing of training. In Mauritius, the Industrial Vocational Training Board has split the financing and provision of training it formerly offered and adopted a competitive model for procuring training services. In Chile, the *Servicio Nacional de Capacitacion y Empleo* (SENCE), a specialized agency of the Ministry of Labor, maintains no capacity for the provision of training and instead procures training services from public and private providers.⁵⁴

Overall, national training systems are moving away from a narrow focus on inputs for training—more instructors, workshops, and equipment—to a more balanced approach that includes a focus on the out-

52. Young 2005; Johanson and Adams 2004.

53. Johanson and Adams 2004.

54. Ibid. and Cinterfor/ILO 2001.

Box 2: National Training Authorities

National training authorities are organized in different ways, depending on the institutional structure of the country. However, they usually share common functions, i.e. organization and coordination of skills training (sometimes including training delivery), quality control, development of standards and curricula, testing and certification, as well as administering training funds, if national training funds exist.

The National Industrial Apprenticeship Agency in Brazil was established by and governed by enterprises that finance the agency through payroll levies. Its board also includes members who represent workers and the government. The agency is heavily decentralized to regional levels to permit adjustments to local skill needs.

The Board of the Vocational Training Corporation in Jordan is linked to the prime minister's office. Chaired by the minister of labor, it includes representatives of other ministries, employers, and workers. Core financing is provided by government budgetary allocations, with significant cost-sharing from enterprises. Individual training centers have considerable authority over curriculum and enrollments.

The Board of the Technical Education and Skills Development Authority (TESDA) in the Philippines comprises 23 members, seven from different government ministries (labor, education, trade and industry, agriculture, local government, science and technology, higher education), the director of TESDA, six members from trade unions, five employers' representatives, two members representing the education and training sector and two members from the business and investment sector. The Board is chaired by the Secretary of the Department of Labor and Employment.

Source: World Bank (2005), Iran: Improving Quality, Relevance, and Equity in a Sustainable Manner, Box 6; and www.tesda.gov.ph.

comes of this training with attention to skills standards set by employers and competency-based delivery by a mixture of public and private institutions. Performance is measured in terms of skills acquired, job placement, and increased worker productivity and earnings. Increasingly, these systems are also evaluated for their responsiveness to rapidly changing market conditions in a global economy and their role in promoting the transfer of knowledge and adjustment of workers to the introduction of new technologies. New curricula developed in a modular fashion promote flexible entry and exit for training consistent with a lifelong learning model allowing just-in-time skills development for workers. Sound monitoring and evaluation programs are important to guiding reforms, policy development, and market operations.

The Role of Enterprises in Training

Enterprises are part of the “T” in Technical and Vocational Education and Training (TVET) and are actively involved in the provision and financing of skills. However, they are foreseen as focusing narrowly on skills specific to the firm. Economists contend that firms are less likely to invest in skills that are widely usable by other enterprises, for fear of turnover of the trained workers and loss of their investment.

Becker (1964) made the distinction between “general” and “specific” skills and contended that under competitive market conditions and in the absence of constraints impeding trainees' ability to finance the investment through borrowing or acceptance of a training wage, training markets would function efficiently without any need for the public sector to intervene. Trainees would be willing to pay the cost of the training for general skills with the expectation that they would realize the benefits through higher wages in the future, whereas enterprises would be willing to finance the cost of skills specific to their needs. Becker con-

tended that there is no need for the governments to intervene in training markets, except to ensure equity and address market failures attributed to credit and information constraints.

However, Becker's policy conclusions have subsequently been challenged by other economists using models of training under imperfect competition.⁵⁵ Stevens (1994, 1996), using a formal model, found that under imperfect labor market conditions externality problems arise that lead to under-investment in general skills. Acemoglu and Pische (1999) reached similar conclusions with a more restrictive model, asserting that labor market imperfections lead to inefficiencies in training by compressing wages and reducing workers' incentives for investing in training. Compressed wages may arise from minimum wages set above market clearing levels, collectively bargained wages favoring low wage workers, or public sector wage policies intended to reduce inequality. The payment of a wage of less than what a person would receive under competitive conditions, due to wage compression, creates an opportunity and incentive for firms to extract in profits some of a workers' increased productivity from general skills training. This provides an economic rationale for firms to join workers in investing in general skills in contrast to the predictions of Becker's model.

Even with the willingness of enterprises to invest in general as well as specific skills, there may still be under-investment in skills by both workers and enterprises, leading to a rationale for government intervention. Investments in general skills, for example, are found to increase wages paid by current employers less than wages available from other employers, creating an externality that produces an under-investment in these skills unless the externality is captured by the worker.⁵⁶ This may happen where an employment contract established by a trade union combines wage setting and training commitments. Enforcing these contracts, however, may be difficult where some skills are informally transmitted making monitoring of training commitments difficult. The result again would be an under-investment in skills training by the enterprise and worker. Government could intervene to reduce this under-investment by subsidizing the cost of training and making monitoring of training contracts easier by introducing testing and certification.

The introduction of imperfect labor markets in these theoretical illustrations produces a different set of policy conclusions than reached by Becker, including an argument in favor of government interventions to reduce potential under-investments in training. The competitive behavior of labor markets becomes an important issue in defining the role of the State in skills development, and analysis needs to be devoted at the country level to assess the competitiveness of labor markets. Whether youth can expect enterprises to train them, and what role governments should play in encouraging this training, continues to be of interest for policymaking.

Studies in the 1990s have taken advantage of the growing availability of training information in *micro data sets* to study the effects on training of individual and firm-related characteristics.⁵⁷ These studies have produced evidence of the willingness of enterprises to invest in general skills along with other determinants of this investment. Micro data sets capturing training by enterprises distinguish training by where it is acquired: on-the-job within the enterprise, or outside the enterprise in schools and training institutions. The expectation being that the latter is more general than the former. Using survey data from manufacturing enterprises in Africa, Nielsen, Rosholm, and Dabalén, (forthcoming) find that formal training paid by

55 Stevens (1994, 1996); Acemoglu and Pischke 1998 and 1999

56 Bishop 1987; Loewenstein and Spletzer 1998

57 Altonji and Spletzer 1991; Bartel and Sicherman 1998; Haltiwanger, Lane, and Spletzer 1999; Johanson and Adams 2004; Tan and Batra 1995; Velenchik 1997.

enterprises is more likely to occur outside the firm than in-house. Similar findings are available from the World Bank's Investment Climate Surveys covering 37 countries and 18,217 manufacturing firms showing that enterprises are active trainers. Nearly 60 percent of firms in East Asia and the Pacific provide training with the share falling to just under 20 percent in the Middle East and North Africa.⁵⁸ Both sources suggest that firms make extensive use of external sources of training with the likelihood that much of this training has broader application than just for the enterprise alone.

Evidence of the willingness of enterprises to invest in general skills on-the-job is also found in *labor turnover rates*. Ryan (2001a:78) reports that in the case of Germany one half of ex-apprentices in large firms separate within five years of completion. Turnover in early employment among ex-apprentices is no lower than among vocational school graduates, whose initial qualifications are unlikely to have been employer-specific.

Not all enterprises show a willingness to train nor are they willing to offer training to all workers. Studies of manufacturing in Colombia, Indonesia, Malaysia, Mexico, and Taiwan indicate that large firms are more likely to train than smaller ones.⁵⁹ Dar (2005) finds a similar pattern in India. The study of manufacturing firms in Kenya, Zimbabwe, and Zambia shows that firms employing 151 or more workers are twice as likely to invest in external training for their workers as those employing 51 to 150, and more than 10 times as likely when compared with firms of 10 or fewer workers.⁶⁰ The differences are smaller where in-house training is concerned. In addition to size, the presence of foreign investment, a focus on exports, and the use of technology and R&D are characteristics associated with the likelihood of enterprise investments in training. There is also selectivity in who the enterprises train with a strong positive correlation with the education of the worker and whether or not the worker is employed in a skilled occupation.⁶¹ These findings add emphasis to the importance of "first-chances," as they indicate that those who acquire education early are more likely to receive training later.⁶²

Does this training pay dividends to enterprises and workers? When offered by enterprises to upgrade the skills of employees, training is generally associated with positive economic returns. Were there no such returns, it is doubtful that enterprises would continue to train at the rates observed. In a global survey of training in developing countries, Middleton, Ziderman, and Adams (1993) found in-service training for the employed producing more benefits than pre-employment training. Table 2 shows the positive productiv-

Table 2. Enterprise Training: Estimates of Productivity Impacts From Investment Climate Surveys

Country	Productivity Effects of Training (%)
Malaysia (1994)	28.2
India (2000)	27.0
Mexico (1992)	44.4
Guatemala (1999)	49.0
China (2001)	32.0
Nicaragua (2000)	56.4
Morocco (2002)	29.0

Source: Tan and Batra (1995); Batra (2000), Tan, Savchenko and Pei (2003). *In-Service Training and Productivity: Results from Investment Climate Surveys*.

58. Tan (2005).

59. Tan and Batra 1995.

60. Johanson and Adams 2004:116.

61. Ibid. Cunha, et. al. (2005) offer evidence that skill attain at one stage of the life cycle raises skill attainment at later stages of the life cycle. Early investment facilitates the productivity of later investment.

62. Bowers, Sonnet, and Bardone (1999:26).

ity impact of enterprise-based training in a number of developing countries. In Sub-Saharan Africa, Biggs, Shah, and Srivastava (1995:Tables 3.10 and 3.12) found an unambiguously positive impact of enterprise-based training on productivity in manufacturing firms in Ghana, Kenya, and Zimbabwe. A one percentage point increase in the number of workers trained by a firm from a sample average of nine percent was associated with as much as a 60 percent increase in value added. Workers in manufacturing were found to benefit from enterprise-based training in Ghana, Kenya, Zambia, and Zimbabwe, with wages increasing on average 15 to 21 percent in comparison with workers without this training.⁶³

The selective nature of enterprise training may disproportionately benefit youth who, on average, will have higher levels of education than older workers and are therefore more likely to be selected for training by enterprises. In the U.S., those with a university qualification are roughly five times as likely to receive further training compared with workers with no formal qualifications.⁶⁴ The case for public interventions in this segment of the market is therefore weaker as many enterprises appear to be following market signals to finance and provide training. The same evidence, however, indicates that there will workers who will not have access to enterprise-based training. Those youth who work for smaller firms are unlikely to have the same access to enterprise training as those who work for larger firms, and those who have not had access to education are less likely to have access to future training opportunities in enterprises. Malaysia and Singapore have found ways to encourage small enterprises to train. See Box 3. From an equity perspective, if not from an efficiency one, there is a case here for public intervention, to promote greater access to skills without defining what form this intervention should take.

Reaching the Unemployed

The ability of training to help out-of-school unemployed youth find employment is more problematic, especially for those coming from disadvantaged backgrounds. High rates of youth unemployment often come with the assumption that the unemployment is due to a lack of relevant skills, making training a preferred option for public intervention. A host of other factors from lack of jobs growth and demand, the cost of labor tied to labor market policies, to unrealistic wage expectations on the part of the first-time job seeker may lie behind the observed unemployment. As a consequence, training is not always the most cost-effective intervention to facilitate young people's transition to work. It may be a necessary condition, but not a sufficient one. Labor market programs offering a wide array of services from counseling and job search assistance to remedial education and direct job creation may represent more cost-effective interventions. OECD countries spend on average about one percent of GDP on these programs, with an increase in spending during the periods of high unemployment and decrease in better times. Spending varies widely among countries. Job training for the unemployed represents about one-third of these expenditures, but again varies widely, from 11 percent in Japan to over 60 percent in Denmark.⁶⁵

Does training work for the unemployed? The review of job training for the unemployed finds mixed results. Meager and Evans (1997:65) observe that "...it is rapidly becoming conventional wisdom in the policy evaluation literature that labor market training and re-training schemes for the unemployed have not lived up to expectations." This theme is picked up by others. Betcherman, Olivas, and Dar (2004) reviewed 159 studies of labor market programs drawn from advanced, developing, and transitional economies, with 49 of the studies covering experience with job training for the unemployed. Fourteen of the 49 studies came

63. Nielsen, Rosholm, and Dabalén (forthcoming).

64. OECD 1994.

65. Betcherman, Olivas, and Dar 2004: 9–10.

Box 3. Singapore and Malaysia Provide Incentives to Increase Training by Smaller Firms

Singapore established its Skills Development Fund (SDF) in 1979 and Malaysia created the Human Resources Development Fund (HRDF) in 1992. The Funds are financed by a 1 percent levy on wages and grants are given to eligible enterprises to encourage the training of employees. The goal of these Funds, as part of a national development strategy, is to expand the resources available for training and engage employers in developing a more flexible and adaptable workforce. Both Funds included special incentives to encourage smaller firms to train. Smaller firms tend not to have capacity for assessing training needs and designing appropriate programs to meet these needs. Releasing key employees for training often harms production and leads to higher training cost for these firms. The smaller scale of training required adds to this cost discouraging smaller firms from training in comparisons with larger ones.

Singapore offered a training voucher to companies with less than 50 workers. Working like a discount voucher, it allowed firms to pay 30 to 50 percent of training costs upfront while the SDF supported the balance. The voucher helped small enterprises ease cash flow problems when investing in staff training as well as reducing the amount of administrative procedure. The voucher helped SDF reach 65 percent of enterprises with 10 to 49 workers and 14 percent of those with fewer than 10 workers. In Malaysia, large enterprises having excess training capacities are encouraged to offer training places to employees of other enterprises, particularly small and medium-sized enterprises which do not have the expertise and resources to formulate and run their own training programs. Small enterprises sending workers to these programs are eligible for training grants from the HRDF.

SDF grants were also extended to enterprises to engage external consultants to conduct company-wide Training Needs Analyses leading to the submission for financing of a Worker Training Plan to the SDF. Companies with at least 51 percent local ownership could apply for grants covering 70 percent of the consultancy fee subject to a maximum. Although available to all firms, this helped smaller firms access the specialized resources needed to assess training needs and design appropriate training programs. Malaysia's HRDF offered similar support helping companies select the most suitable programs to plan for the skill development of all employees. This support helped employers to formulate annual training plans that led to only one application for a training grant rather than one every time they wanted to train.

The SDF made available a wide range of pre-approved public courses for companies to subscribe to under its *Approved-In-Principle (AIP) System*. This program was effective in attracting small companies that had neither the expertise nor the critical mass to conduct such programs on their own. Malaysia's HRDF offered a similar *Approved Training Program (ATP)*. Employers could select any ATP course and send employees for training without prior approval of the HRD Council and claim for reimbursements, subject to terms and conditions set by the Council for completion of the training program. With many smaller firms employing workers without education, the SDF and HRDF also supported programs providing the equivalency of a primary six level of functional literacy and numeracy and further access to English and mathematics at the secondary education level.

Source: Adapted from Yaushi Hirosato, "Skills Development Fund: A Preliminary Assessment of a Financing Alternative for Enterprise-Based Training in the Context of APEC," (processed).

from developing and transitional economies. Only four of them were taken from developing countries. Most of the studies matched trainees with control groups in evaluating employment outcomes. The results show that these programs often had positive impacts on future employment of participants, with the impact on future earnings being much less favorable. Few of the studies offered cost-benefit analyses to judge if the

positive employment effects were sufficient to offset the cost of the training. Results for the small number of developing countries were generally unfavorable for both employment and earnings impact.⁶⁶

In the cases studied, the type of training offered was important to the outcomes. In many of the industrialized countries, on-the-job training showed positive effects while classroom training tended not to have positive impacts on either employment or earnings. Language training for foreign workers and specialized training leading to formal qualifications had large positive impacts, reducing the probability of remaining unemployed. Training programs that had employer sponsorship, and were offered in enterprises tended to perform better.⁶⁷ Recent evaluations of jobs training for the unemployed in transitional economies have been generally positive. Evaluations in Bulgaria, Poland, and Slovakia found significant positive effects of training on the probability of leaving unemployment for men and women in the short-run, but in the medium to longer-run, only women sustained these effects. Results in the few developing country cases were less favorable. Impacts on employment probabilities and earnings were neutral in Argentina and Columbia, while in Mexico positive employment impacts were found with variations by individual characteristics, regions, and institutions.⁶⁸ Results generally favored women.

Serving Disadvantaged Youths

Efforts to provide disadvantaged youths with training for employment have proven even more difficult. In spite of the efforts made in advanced and developing countries to expand access to education and skills development, numbers of youths still leave school with limited skills. Early school leavers as drop-outs are especially at-risk in the transition to work, with repeated spells of unemployment, long-term unemployment, and intermittent and low-paid work. At-risk youth often come from particular ethnic, social, and regional groups. A key policy priority in these cases is to keep the youth in school or to help those who have left early, to return to school.⁶⁹ The goal is to help these youth take advantage of the “first-chance” opportunity for schooling, particularly since the findings show that the opportunities for future training and favorable labor market outcomes accrue to those who enter the labor market with strong education credentials. The training market tends to work well for these youths with enterprises willing to invest in their skills. Where first chances are missed or simply not available, public policies have focused on providing youth with “second-chances” in the form of labor market programs, including skills training.

Advanced countries in the 1960s and 1970s faced a demographic transition with the aging baby-boom population beginning to enter labor markets. Many labor market programs were introduced to reach at-risk youths. Developing countries with expanding youth populations have since followed this pattern. To keep young people in school, support measures have focused on (i) interventions to help youth overcome learning difficulties, (ii) increasing the benefits and stimulating young people’s interest in school, and (iii) reducing household income barriers to continued schooling. Interventions to help youth overcome learning difficulties have typically included tutoring and extra help with school work, language assistance where needed, and counseling for schooling and employment. Steps to stimulate interest in schooling have involved expansion of access to post-basic education and improvements in its quality to raise expectations

66 Ibid.: 25–26

67 Hui and Smith 2002

68 Betcherman, Olivas, and Dar 2004: 27–28.

69 In the U.S., Canerio and Heckman (2003) find high returns to early human capital interventions and a low return to remedial or compensatory interventions later in the life cycle.

of parents and students for further education.⁷⁰ Adding vocational content to the curriculum as cited above has also been used to stimulate interest in school and improve retention.⁷¹

Reducing household income barriers has proven especially important to continued schooling for poor households. Cash transfers to families of the poor on the condition they keep their children enrolled in school have been successful. In countries like Brazil, Honduras, Jamaica, Mexico, Nicaragua, Bangladesh and Indonesia, these programs have helped keep at-risk youth enrolled in school, but also obtain access to health care and other social services.⁷² As an illustration of this, the *Progres*a program in Mexico has increased transitions to secondary school by nearly 20 percent with educational attainment increasing by two-thirds of a year.⁷³ In Indonesia, scholarships to 6.5 million children during the East Asia crisis as part of a social safety net program helped reduce lower secondary school dropouts by 24 percent. Other supplements to family income from remittances are found to have a significant impact on improving school retention. In El Salvador, the impact of remittances on school enrollments is 10 times greater than the effect of other sources of household income.⁷⁴

For those leaving school early or not entering at all, non-formal education programs provide an alternative means to acquiring basic education and schooling equivalencies. Countries like Sweden and Norway have provided follow-up programs using school counselors, the public employment service, and other community services to bring youth back to school. Placing youth in subsidized jobs with on-the-job training and some school attendance, has been successful in motivating and re-inserting drop outs.⁷⁵ Returning youth to school is often difficult for those who find learning in this environment a challenge. Age and social pressures, particularly for girls who become pregnant, stand in the way of returning to the formal school system. Some labor market programs have recognized this and attempted to change the institutional setting for skills development.

Non-formal education programs can be offered outside the traditional classroom setting for those reluctant to return to the formal education system. The cost of these programs can be kept low by using existing school facilities outside normal school hours and employing contract teachers. As connectivity expands, distance education opens new options for acquiring education credentials. Whether offered as part of comprehensive programs for at-risk youth or as separate interventions, second-chance education provides a low-cost option for out-of-school youth to complete a secondary education with a credential employers look for in hiring, and selecting for training. Widely available General Education Development programs in the U.S. are an example of such interventions, by providing a means to validate learning and acquire secondary education equivalency. Seventy percent obtaining the GED credential use it to continue their education and another 26 percent use it for employment.⁷⁶ Expanding programs like this in developing countries can open doors to employment and further education, helping individuals become self-sustaining.

The Job Corps in the U.S. is probably the best known of programs changing the institutional setting for skills development, and best evaluated. It offers 16 to 24 year olds education and training, as well as a wide range of social services, including health screening, transportation assistance, and job counseling, primarily

70. World Bank 2005c: 26–27.

71. Kemple 2004; Wilson 2005.

72. Bourguignon, Ferreira, Leite 2003; Rawlings and Rubio 2003; Skoufias, Emmanuel 2001; Patrinos 2002.

73. Patrinos 2002:11.

74. Edwards and Ureta 2003.

75. Bowers, Sonnet, Bardone 1999.

76. National Center on Adult Literacy 1998.

in a residential setting.⁷⁷ The non-residential setting provides a change of environment and an opportunity to promote positive behaviors among participants. The program is costly, ranging from \$13,000 to \$15,000 per participant.⁷⁸ Evaluated through random assignment, the program shows positive earnings impacts, but with the effect diminishing after four years. The benefits are insufficient to cover the substantial cost of the program for younger participants, but are favorable for older participants 20 to 24 years of age who are more motivated, disciplined, and likely to complete the program. The lessons of the Job Corps are also evident in Latin America in non-residential programs for youths, such as the Joven Programs. These programs combine training with work experience for youth 16 to 29 years of age. The programs are found in countries like Argentina, Chile, Columbia, Dominican Republic, Honduras, Panama, Paraguay, Peru, and Venezuela.

The Joven Programs reach out to youth with an intensive training and work experience package in an enterprise, but, like the Job Corps, also provide other support services, e.g. instruction in life skills, transportation, health care, books and materials, and clothes, and in some cases child care to reach the young women. Life skills can be especially important in helping youth make more informed decisions about education, health care, family formation, conflict resolution, and risky behaviors, including violence, which ultimately influence their transition to work. The Joven programs increase the probability of the beneficiaries finding employment upon graduation, especially for women. In Argentina, young women (21 years and older) experienced a 10 percent increase in the probability of employment measured against a control group.⁷⁹ In Chile, recent analyses found that the program increased the probability of employment by 21 percentage points relative to the control group, with strongly significant results for youth 21 and younger and for women.⁸⁰ In Peru, the impact on labor placement was 7.5 percentage points, increasing employment in large and medium size companies, and reducing it in micro-enterprises.⁸¹ Features considered important to the positive outcomes of the program are the competitive procurement of training, links with private employers, and provision of services beyond technical training, including life skills training.

Success comes with a high cost. The cost per participant ranges from US\$700 in Peru to nearly \$2,000 in Argentina. Cost-benefit analyses show that benefits of these programs exceed their costs if the positive effect on earnings lasts at least 7 years with a 5 percent rate of return. Even if the benefits fall short of costs, investment may still be justified for disadvantaged groups on equity grounds. Multi-faceted programs that combine services ranging from remedial education and training to work experience, job-search assistance, support for returning to formal education, life skills training, and various forms of wage subsidies are becoming the preferred approach for disadvantaged youths in advanced countries.⁸² Careful targeting of these programs can be critical to managing their cost. Training for technical skills is increasingly understood as not enough alone. Experience in the U.S. over the past three decades with carefully evaluated training programs for disadvantaged youth shows that these programs alone have done little to raise the long-term job success of disadvantaged youth participants.⁸³ Problems of low quality training are accompanied by poor work attitudes by the youth, affecting the success of these programs. Grubb (1999) highlights five

77. Schochet, McConnell, Burghardt 2003.

78. Ibid. Table 4, xxviii.

79. Aedo and Nunez, 2001.

80. Aedo and Pizarro, 2004.

81. Nopo et. al, 2002 and IADB, 2005.

82. Bowers, Sonnet, Bardone 1999: 32.

83. Lerman 1997.

factors in Box 4 that contribute to the success of education and training programs in facilitating the entry to employment for the disadvantaged youths.

Ryan (2001a:72) finds that jobs training for disadvantaged youths may have worked better in Europe than in the U.S., but concludes that the net employment benefits as a whole are low because in placing youth in employment, these programs displace others who would have taken these jobs. However, this observation applies mainly to a labor surplus economy. High displacement rates lower the net employment benefits of these programs. Many economists, focused mainly on efficiency criteria, contend that youth training programs for the disadvantaged do not produce benefits in proportion to their costs. These benefits should include any reduction in future social costs. Equity criteria may still justify investment in these programs for the disadvantaged when distributional effects are considered. Where success is found, as illustrated in the Job Corps and Joven programs, the benefits accrue selectively to some population groups and not to all. These programs offer a wider array of services than training alone and cost more than first-chance options. The results point to the importance of careful evaluation and targeting of programs, but also to the importance of promoting first-chance options that provide youths with a solid educational foundation before entry to work.

Box 4. Key Factors Leading to Successful Second Chance Education and Training for At-Risk Youths

1. Effective programs for at-risk youths contain an appropriate mix of general (or remedial, or basic) education, occupational skills training, and work-based learning in the best cases integrated with one another.
2. They provide a variety of support services, like counseling and placement services.
3. They maintain strong links to the local labor market and garner employer support for the programs.
4. They provide their clients with pathways of further education opportunities, so that they can continue education and training if they wish.
5. They collect appropriate information about their results and use these to improve the quality of their programs.

Source: Grubb 1999:363.

Extracting Lessons

The teaching of vocational skills is expected to help youth find work upon leaving school, and become more productive and trainable once in the labor force. There is evidence that this happens, but not for all youth or all programs. Using Technical and Vocational Education and Training (TVET) to improve the transition of youth to work requires careful differentiation of programs and their purposes. It further requires awareness of the characteristics of those served and close matching of programs with needs. In assessing the pattern of skills acquisition over the life cycle, this review illustrates the importance of building a solid foundation of general education for later vocational skills development. Data from household and enterprise surveys show this foundation to be closely connected with later investments in vocational skills.⁸⁴ Against this background, a key priority is keeping youth in school or helping those who have left to return. For those missing their “first-chance” opportunities for schooling, opening “second-chance” options in the form of labor market programs, including non-formal education and skills training, can be important to lowering future social costs.

This review makes a distinction between TVE and the second “T” of TVET. The distinction highlights the emphasis of TVE on preparation for first employment after leaving school, while the “T” is more diverse in its objectives: helping the unemployed qualify for employment, facilitating occupational mobility, upgrading workforce skills, and responding with “second chances” to those who missed their first chance in schooling. The provider community for the second “T” is more diverse. Ministries of Education that dominate TVE are in most cases a minority player in the “T” amidst other providers that include technical ministries, for-profit and not-for-profit training institutions, and employers. This poses a more complex set of policy issues for promoting the integration of training markets serving youths and adults. Initiatives to promote greater integration of these markets have focused on stakeholder participation in governance, decentralization of management, and opening of markets to competition among public and private providers, and use of financing incentives to encourage targeted services and improved performance. Qualification frameworks are playing this role in some countries.

Does TVE payoff?

TVE does payoff under the right conditions. Careful evaluations, mostly in advanced countries, controlling for unobserved personal characteristics in TVE enrollments show that vocational curricula compared with general education are only selectively associated with higher pay on entry to work for youths, while employment effects are much stronger. While producing economic benefits for some, the higher unit cost of TVE in comparison with general education can lead to unfavorable cost-benefit comparisons. Evidence shows that TVE is more effective when focused on skills closely matched with existing employment opportunities. Alone, it is less likely to be successful in addressing broader social problems of diverting demand from

84. Cunha 2005.

higher education, resolving the larger problem of youth unemployment, reducing gender bias in employment, or improving the employability of disadvantaged groups. TVE shows higher economic returns where the skills produced are used on the job and job creation is high. Building strong links between schools and employers is important to improving the relevance of TVE to employment.

When to introduce vocational content

Benefit-cost comparisons of TVE as part of general education are more favorable where vocational content is deferred to later in the education cycle. This is a way to reduce the early tracking of students in vocational education before they are ready to make such choices. Pre-vocational courses offered in lower secondary schools show limited benefit in terms of future employment or earnings. Offering vocational content earlier in schooling might however be supported on social grounds where it is shown to lead to higher retention and educational attainment. Higher economic returns are being observed at the post-secondary level for TVE. Globally, TVE enrollments today are clustered in upper secondary education, and in advanced countries vocational content is shifting rapidly to the first two years of tertiary education. This provides opportunities for expanding choices at a later time when students are better equipped with information to make career-related decisions. This approach, however, is difficult to introduce in low-income countries where access to secondary and post-secondary education are limited.

Along with deferring vocational specialization, other trends observed in TVE include efforts to improve its social status and erase its image as a “dead-end” track for education. These efforts include improving articulation with further education, introducing curricula that open dual tracks to employment and further education, and bringing education and the world of work closer together.

How much vocational content?

TVE is unlikely to help youths enter employment where the curriculum contains only a small fraction—typically less than one-fifth—of vocational content. The idea of many educators to package a small amount of vocational subject matter with general education to improve options for employment is largely unproven. Called the “vocationalization” of secondary education, this strategy is not found to work well in advanced or developing countries for facilitating the transition of youth to employment. The introduction of limited vocational competencies comes at a high opportunity cost in time that cannot be spent on general education subjects. More success is achieved with full-time TVE where the goal is to improve chances for employment. A stronger case may be made for vocationalizing the curriculum where the goal is to increase students’ interest in school and raise educational attainment. Where vocational content has broad learning and occupational applications, the way ICT skills do, the impact is largely different. ICT skills are becoming a necessary form of vocationalization in secondary schools, and computer applications are increasingly integrated in general education in the same way typing once was.

The value of apprenticeship and work experience

Not all skills required by youth for employment are going to be provided in institutional classroom settings. Apprenticeships and early work experience form an important bridge between school and work for youths, offering skills in a different setting. In comparison with school-based alternatives, evidence favors the positive impact of apprenticeship on employment for young men, though less so for young women. When compared with labor market programs, the benefits of apprenticeship are found to be even greater.

Recent efforts in Australia, South Africa, and the U.K. to expand the formal apprenticeship model to non-traditional occupations and groups merit careful evaluation.

The formal apprenticeship model of advanced countries is less well suited to developing economies. In developing economies, traditional apprenticeships through contracts between youth and master craftsmen for acquiring skills and practical business experience, show benefits for the apprentices. However, expanding the role of these apprenticeships for youth will require reforms that open their access to new technologies, improve pedagogy and technical skills of the master craftsmen, grant more attention to literacy of the apprentices, and support initiatives to certify the skills attained. National youth service programs, though less well evaluated, provide another path to work experience and skills.

Recognizing what enterprises will do and not do

Training provision and financing by employers is frequently overlooked in favor of public investments in TVET. Employers, however, are an active source of provision and financing in the second “T” in TVET. Evidence shows that this training culminates in higher productivity for the enterprise, and higher wages for workers. It is self-regulating and self-financing. Contrary to expectations, employers are found to invest in general skills alongside skills specific to the enterprise. When considering this as a source of skills for youth, however, it needs to be recognized that not all enterprises train, nor will all workers in the enterprises that do train have access to this training. Enterprise training is selective, with workers in small and medium-sized enterprises and those with lower levels of formal education having less access to the training. On grounds of equity, if not efficiency, these conditions of employment provide a rationale for public interventions, to broaden the access and investment in education and skills for those left behind by enterprise-based training. These interventions may include public provision, but also public financing of private providers, including training by enterprises.

Improving skills development for unemployed youth

High levels of youth unemployment are unlikely to be reduced by the second “T,” unless the problem of unemployment for youth is structural in nature, meaning that youth possess the wrong skills for jobs that exist. Where the unemployment problem is a lack of job creation, high labor costs, or unrealistic wage expectations on the part of youth, TVET is less likely to be successful unless coupled with other reforms. Understanding the core causes of youth unemployment is an essential first step before costly investments in TVET are made. Perhaps due to the lack of this understanding, much of the training offered to the unemployed is said not to have lived up to its expectations when subjected to careful evaluation. This image has plagued youth training programs in countries like the U.S., so much so that it has led to cut backs of public funding. This image, however, is incorrectly formed as the evidence of this review suggests that where jobs do exist and training is linked to this employment, investment in TVET can yield positive benefits. The type of training offered is important to the outcome. Training programs with employer sponsorship and offered in enterprises tend to perform better, out-performing classroom training for the unemployed.

Reaching at-risk youths

Efforts to help at-risk youth enter employment with TVET have proven more difficult. Early school leavers are especially at-risk in the transition. A key priority is to help these youth to stay in school, or return to school. For helping youth stay in school, steps can be taken to provide services offsetting possible learning

deficiencies, increase the benefits from and interest of parents and youth in schooling, and reduce household income constraints. The review has provided examples of all three along with evaluations. Second-chance programs for education and training can play an important role helping early school leavers enter employment. Non-formal education programs, providing equivalency certificates for missed schooling, can open opportunities for further education and to training on the job.

Programs like the Job Corps in the U.S. and the Joven Programs of numerous Latin American countries have shown that training is often not sufficient by itself to help out-of-school youth make the transition. Other social services and support are needed alongside training to pay dividends. Competition in their delivery and the involvement of employers are important conditions for the success of these programs. These second-chance programs, while costly, can pay excellent dividends and reduce the social cost of first-chance failures. With their cost, targeting is important. Their cost emphasizes the importance of promoting first-chance options for assuring youth have a solid educational foundation before entry to work.

Percent of Secondary Students Enrolled in Technical and Vocational Programs by Country and Level of Secondary Schooling: 2002/2003*

Region and Country	Secondary Enrollment	Total Secondary %	Lower %	Upper %
<i>Africa</i>				
Algeria	3548484	10	7	16
Angola	413,695	19	1	78
Egypt	8,384,065	30	3	64
Ethiopia	1,857,817	4	Na	20
Ghana	1,276,670	1	Na	5
Kenya	1,389,818	2	1	3
Mali	351,471	11	Na	35
Morocco	1,758,057	6	2	13
Mozambique	498,839	5	6	2
Senegal	309,959	1	1	2
South Africa	4,312,135	5	Na	9
Sudan	1,291,023	2	Na	5
Tunisia	1,148,523	2	Na	3
Uganda	687,613	5	1	24
Zambia	351,442	2	Na	4
<i>North America</i>				
Canada	2,622,473	4	Na	7
Cuba	938,047	29	4	61
Dominican Rep.	658,164	5	Na	8
El Salvador	462,501	20	Na	58
Guatemala	608,420	29	Na	89
Mexico	10,188,185	16	18	11
Nicaragua	382,951	5	1	14
United States	23,196,310	na	Na	na
<i>South America</i>				
Argentina	3,976,213	32	Na	81
Brazil	26,789,210	2	Na	5
Chile	1,557,120	25	Na	40
Columbia	3,723,348	8	Na	30
Ecuador	972,777	22	Na	53
Paraguay	519,054	9	Na	20
Uruguay	332,175	9	Na	19
Venezuela	1,866,114	3	Na	11

Percent of Secondary Students Enrolled in Technical and Vocational Programs by Country and Level of Secondary Schooling: 2002/2003* (cont'd)

Region and Country	Secondary Enrollment	Total Secondary %	Lower %	Upper %
<i>Asia</i>				
Armenia	367,525	1	Na	5
Azerbaijan	1,094,387	2	Na	8
Bangladesh	11,024,326	1	Na	3
Cambodia	560,197	3	Na	10
China	95,624,760	12	Na	40
Georgia	450,345	2	Na	9
India	81,239,667	1	1	na
Indonesia	15,872,535	13	Na	35
Iran	10,024,105	8	Na	16
Israel	603,321	21	Na	35
Japan	8,394,050	13	Na	25
Jordan	613,120	6	Na	20
Kazakhstan	2,067,168	4	Na	16
Kirgizstan	739,259	4	Na	14
Lao PDR	353,362	1	Na	4
Lebanon	350,211	13	3	27
Malaysia	2,300,062	6	Na	15
Mongolia	312,774	5	Na	20
Nepal	1,822,063	1	Na	2
Pakistan	5,734,293	1	Na	5
South Korea	3,661,759	16	Na	32
Saudi Arabia	1,995,443	3	3	4
Syria	1,284,357	9	Na	31
Tajikistan	948,341	3	Na	17
Thailand	5,009,844	12	Na	29
Turkey	5,742,070	22	Na	38
Uzbekistan	4,160,903	9	Na	36

Percent of Secondary Students Enrolled in Technical and Vocational Programs by Country and Level of Secondary Schooling: 2002/2003* (cont'd.)

Region and Country	Secondary Enrollment	Total Secondary %	Lower %	Upper %
Europe				
Albania	396,139	5	Na	15
Austria	764,426	35	Na	72
Belgium	1,181,327	59	38	70
Bulgaria	707,251	28	1	55
Croatia	399,845	36	Na	74
Czech Republic	1,000,493	39	Na	79
Denmark	446,863	26	Na	53
Finland	492,757	35	Na	57
France	5,859,127	25	Na	56
Germany	8,446,559	20	Na	62
Hungary	1,029,979	7	Na	13
Italy	4,528,300	15	Na	26
Lithuania	447,952	8	2	26
Netherlands	1,415,170	35	7	69
Norway	385,009	32	Na	59
Portugal	797,065	14	Na	29
Moldova	410,590	6	Na	22
Romania	2,218,124	29	Na	64
Russia	14,485,685	13	Na	40
Slovakia	666,238	32	Na	76
Spain	3,052,662	13	Na	37
Sweden	934,608	30	Na	50
Switzerland	555,505	32	Na	65
Ukraine	4,824,077	7	Na	21
U.K.	9,577,287	54	Na	72
Oceania				
Australia	2,513,670	44	26	63
New Zealand	482,959	12	Na	24

Source: UNESCO Global Education Digest 2005, Table 5:74–82.

*Data for OECD countries may include programs for people beyond the normal school age. i.e. adult education programs, and comparisons with non-OECD countries should be done with caution.

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Overview of Global Literature on Skills Development in the Transition to Work

Stage of the Life Cycle	Issues that apply to the respective stage	Relevant research findings and sources	Countries sources for these findings
(i) Preparation in school for entering the world of work	<ol style="list-style-type: none"> 1. Introducing vocational content to the secondary curriculum 2. Economic payoff to technical and vocational education (TVE) 3. The importance of jobs and demand for skills 4. Social payoff to TVE and improving educational attainment 5. Patterns of TVE curriculum development 	<ol style="list-style-type: none"> 1. A secondary curriculum with less than 20% vocational content does not increase the chances of obtaining employment or higher earnings (Lauglo and Maclean 2005; Psacharopoulos and Loxely 1985) 2. When compared with a general secondary education, a secondary technical and vocational education degree shows strong employment outcomes, but weaker effects on wages. Effects may vary by gender and occupation. Wage effects prove to be larger at the tertiary level. (Ryan 2001) Benefits found for advanced vocational courses, but not for introductory courses. (Bishop and Mane 2005) 3. Demand for TVE is stronger where job growth is sustained. Small modern sectors in low income countries translate into low demand for TVE. (Middleton, et. al. 1993; Billitoff and AUSTRAL 2005); The payoff to TVE is higher when trainees are able to find jobs that use the skills acquired (Ziderman and Neuman 1999) 4. TVE offered in secondary schools has not by itself proven successful in reducing gender bias in employment, lowering youth unemployment, improving employment for disadvantaged youth (Middleton, Ziderman, and Adams 1993); Where a vocational curriculum choice is available secondary graduation and enrolment rates have been found to be higher (Bishop and Mane 2005). 5. In a large majority of developed and developing countries, vocational content in the curriculum is being deferred to senior secondary and tertiary education; increased attention is being given to opening educational pathways horizontally and vertically for secondary TVE students; more blending of general and vocational curricula is occurring; more initiatives are being taken to bring work and practical experience into school curricula (UNESCO Global Education Digest 2005; Ellis 2005; Ryan, Gospel, and Lewis 2005; Bowers, Sonnet, Baredonne 1999; Ryan 2001; Weeks 2005; Wilson 2005; Kemple 2004) 	<ol style="list-style-type: none"> 1. Kenya, Ghana, Mozambique, Tanzania, Columbia 2. U.S., France, U.K. 3. Israel, U.S., diverse low income countries 4. South Korea, China, Mozambique, U.S. Canada, Spain, Portugal, other OECD countries 5. UNESCO data for all countries; specific examples for Tunisia, South Korea, Denmark, Austria, Switzerland, U.K, Germany, Japan, U.S., Botswana, France, Sweden

Overview of Global Literature on Skills Development in the Transition to Work (cont'd.)

Stage of the Life Cycle	Issues that apply to the respective stage	Relevant research findings and sources	Countries sources for these findings
(ii) Bridging school and work	<ol style="list-style-type: none"> 1. Models that link school and work 2. Formal apprenticeships 3. Traditional apprenticeships 4. New forms of apprenticeship 5. School-based programs 	<ol style="list-style-type: none"> 1. Widely different models of part-time school and part-time work in Germany and full-time school followed by full-time work in Japan are found to provide an effective bridge between school and work in their own cultural contexts, but may face difficulty transferring outside this context (Ryan 2001; Johanson and Adams 2004; van Eekelen, de Luca, and Ismail 2001) 2. Formal apprenticeships are associated with positive employment outcomes and selectively associated with higher pay when compared with school-based pathways to qualifications. Apprenticeships achieve less for women than men for entry rates, occupational access, and subsequent labor market outcomes. When compared with non-formal training in labor market programs, formal apprenticeships fare well in producing gains in pay as well as employment (Ryan 2001 and 1998) 3. Representing contracts between an apprentice and a master craftsman, usually in low income countries, these programs have not been as rigorously evaluated, but are found to be self-regulating, self-financing, cost-effective, catering to individuals who lack adequate education for formal training, and able to reach the rural and urban poor. Weaknesses include: not able to reach poorest of the poor, gender-biased against women, perpetuate traditional technologies, lack standards and quality assurance (Haan and Sierrere 2002; Atchoarena and Delluc 2001; Ziderman 2003; Johanson and Adams 2004) 4. Formal apprenticeships have been expanded beyond traditional craft and technical occupations into a wide variety of sales, technical, and professional, and service occupations. Such programs have not been rigorously evaluated, but show evidence of expanding the number of women in apprenticeships (Haan and Serriere 2002; Ryan 2001) 5. Work experience as part of secondary education has been introduced in a number of OECD countries making this experience part of the curriculum. Evaluations show difficulty in attracting sufficient employer participation, but results in Australia point to enhanced student motivation, confidence, and satisfaction, along with improve personal and practical skills and time management. Unemployment rates in one program compared with non-university bound school leavers were cut in half and students were 50% more likely to be involved in further education and training (Bower, Sonnet Bardone 1999) 	<ol style="list-style-type: none"> 1. Germany, Japan, Egypt, other low income countries 2. France, U.K. U.S., Germany 3. Ghana, Senegal, Benin, Niger, Cameroon 4. Australia, South Africa, U.K. 5. Sweden, Norway, the Netherlands, Australia

Overview of Global Literature on Skills Development in the Transition to Work (contd.)

Stage of the Life Cycle	Issues that apply to the respective stage	Relevant research findings and sources	Countries sources for these findings
	6. National youth service programs	6. Widely available in developing countries and some developed countries. These programs can promote social cohesion, provide alternatives to military conscription, and deliver public services governments cannot afford to deliver. The programs are expected to enhance self-confidence for targeted youth and promote skills and employability. Few programs have been rigorously evaluated, but anecdotal evidence is favorable, particularly where national service is voluntary (Eberly 1998)	6. Nigeria, Costa Rico, Botswana, South Africa
(iii) Upgrading skills in the workplace	1. In-service training by enterprises	1. Micro-data show enterprises are active providers and financiers of training. Nearly 60% of firms in East Asia and the Pacific provide training with the share falling to just under 20% in the Middle East and North Africa. Contrary to expectations firms will invest in general as well as specific skills. Not all enterprises train and those that do will be selective in who they train favoring those with more education. Those enterprises that train will tend to be larger in size, users of technology, exporters, and have foreign investment. (Acemoglu and Pischke 1998 and 1999; Altonji and Spletzer 1991; Bartel and Sicherman 1998; Haltiwanger, Lane, and Spletzer 1999; Tan and Batra 1995; Velenchik 1997; Nielsen, Rosholm, and Dabalén forthcoming; World Bank Investment Climate Assessment surveys in over 70 countries) Enterprise-based training pays dividends in higher productivity for the enterprise and higher wages for workers (Middleton, Ziderman, and Adams 1993; Biggs, Shah, and Srivastava 1995; Nielsen, Rosholm, and Dabalén; Tan and Batra 1995; Batra 2000; Tan, Savchenko and Pei 2003)	1. Malaysia, India, Mexico, Guatemala, China, Nicaragua, Morocco, Taiwan, Columbia, Indonesia, Kenya, Zimbabwe, Zambia, plus others

Overview of Global Literature on Skills Development in the Transition to Work (cont'd.)

Stage of the Life Cycle	Issues that apply to the respective stage	Relevant research findings and sources	Countries sources for these findings
	<p>2. Helping the unemployed</p> <p>3. Providing the disadvantaged with second chances</p>	<p>2. Training can reduce unemployment where there is a structural mismatch of skills and jobs. However, it does not reduce unemployment where the cause is a lack of jobs and demand for labor or where wage expectations of first-time job seekers are higher than wages offered. Perhaps because not all unemployment is due to structural mismatches of jobs and skills, a large body of findings indicate that training and retraining schemes do not live up to their expectations for solving the unemployment problem. Rigorous evidence on this issue from developing countries is limited, but generally unfavorable for the impact of training on labor market outcomes for the unemployed. Training does tend to work better for unemployment when sponsored by an employer and offered in an enterprise instead of a classroom. The results for women also tend to be better than those for men (Betcherman, Olivas, and Dar 2004; Meager and Evans 1997; Hui and Smith, 2002)</p> <p>3. Evidence shows higher economic returns to early human capital interventions, e.g. schooling, health care, nutrition than to remedial or compensatory interventions later in the life cycle (Canerio and Heckman 2003); Successful interventions to keep youth enrolled in school include: interventions helping youth overcome learning difficulties, increasing the benefits of schooling and stimulating interest in school, and reducing household income barriers to continued schooling (World Bank 2005c; Kemple 2004, Wilson 2005); Cash transfers, scholarships, remittances have shown success in increasing educational attainment (Bourguignon, Ferreira, Leite 2003; Rawlings and Rubio 2003; Skoufias 2001; Patrinos 2002; Edwards and Ureta 2003); Low cost non-formal education and education equivalency programs can improve opportunities for further education where youth have left the formal education system (Bowers, Sonnet, Bardone 1999; National Center on Adult Literacy 1998) Multi-faceted programs offering a range of social services including basic education, vocational training, life skills, health care, and counseling under rigorous evaluation have shown positive benefit-cost ratios in providing a second chance to economically disadvantaged youth helping them get back on track with learning and employment, but at very high cost per individual (Schochet, McConnell, Burghardt 2003; Aedo and Nunez 2001; Aedo and Pizarro 2004; Nopo, et. al. 2002; IADB 2005; Bowers, Sonnet, Bardone 1999; Lerman 1997)</p>	<p>2. Bulgaria, Poland, Slovakia, Argentina, Columbia, Mexico, and most OECD countries</p> <p>3. U.S., Brazil, Honduras, Jamaica, Mexico, Nicaragua, Bangladesh, Indonesia, El Salvador, Sweden, Norway, Argentina, Chile, Columbia, Dominican Republic, Panama, Paraguay, Peru, Venezuela</p>

Policymakers worldwide are concerned with helping youth acquire the skills and competencies needed for entering the world of work and becoming productive citizens and providers for their families. Countries and households adopt and combine different approaches to acquiring skills ranging from formal school settings, outside schools in non-formal training programs, and in the workplace itself. This paper reviews literature from advanced and developing countries on the role played by skills in the transition to work and the economic outcomes in earnings and employment associated with the different approaches. Using results from rigorous program evaluations that control for selection bias, the paper highlights effective strategies for equipping youth with skills to make the transition to work, and for those who miss early education, it identifies programs that can offer youth a second chance to make this transition.



The World Bank Children and Youth Unit
Human Development Network
1818 H Street, NW
Washington, DC 20433 USA

childrenandyouth@worldbank.org