

# Does vocational training help young people find a (good) job?

## Systems combining structured learning on the job with classroom training can ease youth unemployment

Keywords: youth unemployment, vocational education and training, dual vocational training, apprenticeships

### ELEVATOR PITCH

Youth unemployment has increased in many industrialized countries following the recent global recession. However, this reflects not only the cyclical shock, but also the crucial role of institutions in structuring the transition from school to work. Vocational training, in particular in a dual form combining vocational schooling and structured learning on-the-job, is often considered to be one of the most important policy solutions in combating youth unemployment. The evidence available supports this perception, but the institutional requirements of a successful training system also have to be taken into account from a policy perspective.

### KEY FINDINGS

#### Pros

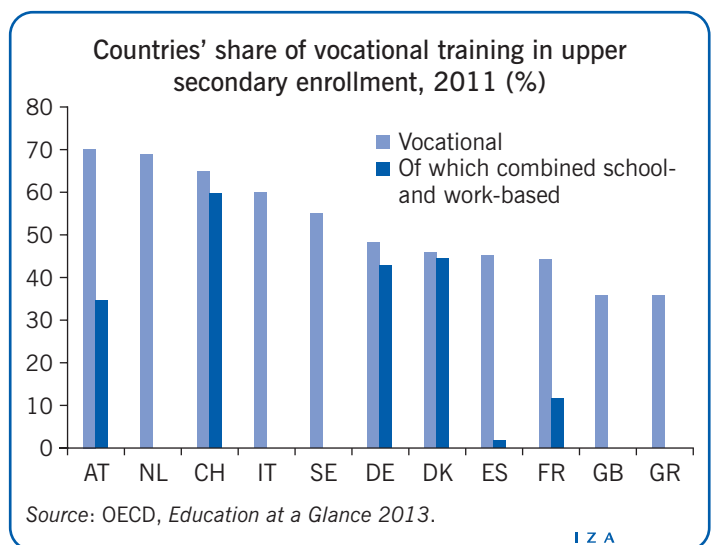
- ➕ Vocational education and training at the secondary level can ease the transition from school to work while supplying employers with trained workers.
- ➕ Dual vocational training, which combines structured learning on-the-job with classroom training, leads to certified skills that are relevant to employers and portable in the labor market.
- ➕ Countries with strong vocational training programs are in a better position to avoid rising youth unemployment, even in difficult times.

#### Cons

- ➖ A successful dual vocational training system is not easy to implement on a large scale because it requires complex institutional and cultural foundations.
- ➖ To be sustainable and have a major impact, dual vocational training needs to be actively supported by a sufficient number of employers, trade unions, and policymakers, which takes time to develop.
- ➖ Vocational training is not a panacea or a quick fix to bring down high youth unemployment.

### AUTHOR'S MAIN MESSAGE

If tailored to the needs of employers and the labor market, dual vocational education and structured on-the-job learning programs can smooth entry into the labor market for young people compared with an academic high school education alone. Establishing a dual vocational training model is a demanding task, however, and cannot be seen as a quick fix for high youth unemployment. Structural reforms to revive the economy and reduce entry barriers to employment are also needed. Since most countries already have some form of vocational training program they could start with existing elements to bring vocational education and training closer to employer and labor market needs.

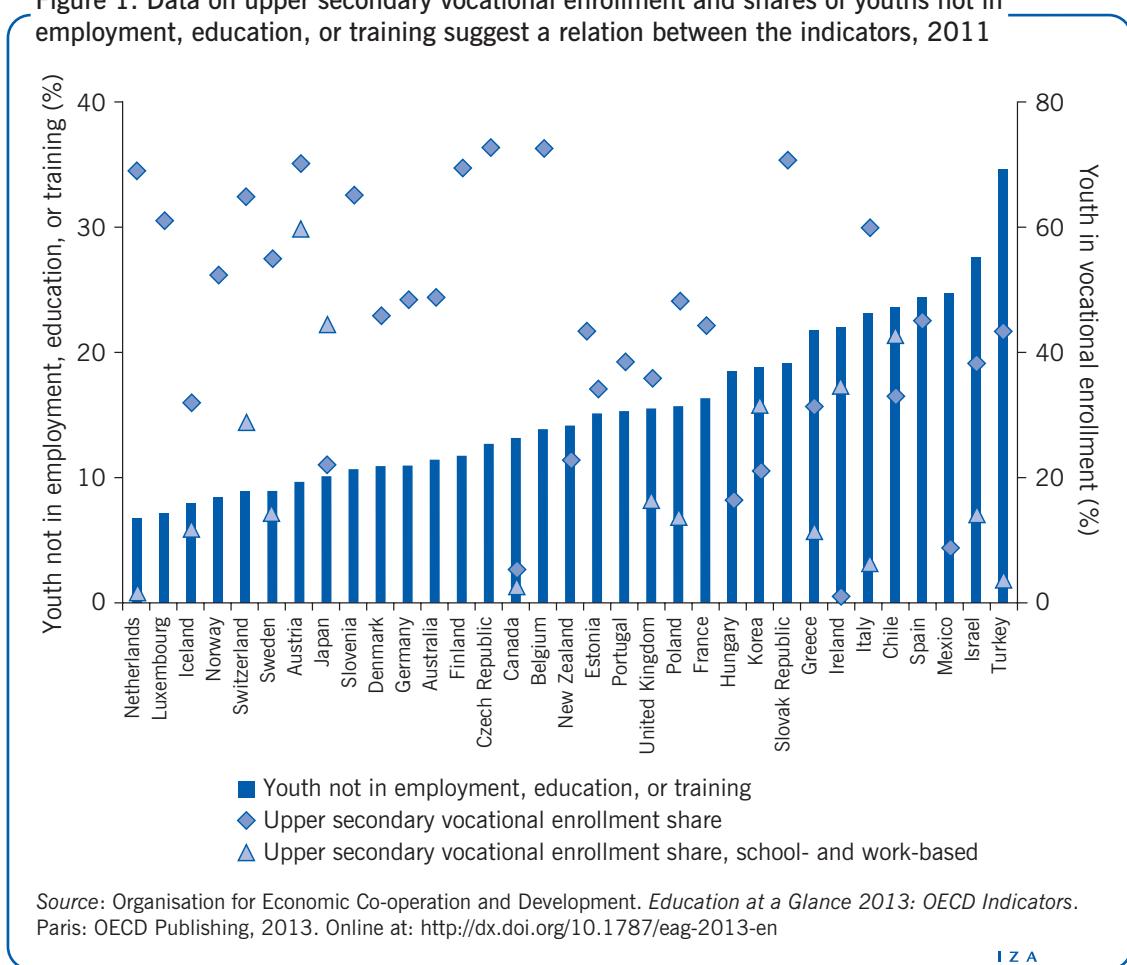


## MOTIVATION

The 2008/2009 financial crisis and its aftermath clearly highlight the interaction of cyclical influences on youth unemployment and long-standing institutional features affecting the transition from school to work. The youth unemployment situation deteriorated the most in countries where young people already had had difficulty transitioning into the labor market even before the crisis. But some countries were able to weather the storm and to keep youth unemployment low. According to data from the Organisation for Economic Co-operation and Development (OECD), youth unemployment rates have risen above 35% in Italy and Portugal and above 50% in Greece and Spain, while remaining below 10% in Austria, Germany, and Switzerland. These last three countries all have dual vocational training systems, which combine vocational schooling and structured learning on the job. The share of youths (aged 15–24) neither in employment nor in school in 2012 ranged from 4% to 7% in the Netherlands, Denmark, and Switzerland to 18% or more in Greece and Italy.

These summary statistics suggest why vocational education and training at the secondary level is frequently perceived as the solution for improving the opportunities of youths to acquire skills that are valuable in the labor market and can help them begin a sustainable employment trajectory. A first glance at data on vocational enrollment shares and on young people not in employment, education, or training (Figure 1) gives at least some hint at a relation between the two indicators. Thus, youth exclusion tends

Figure 1. Data on upper secondary vocational enrollment and shares of youths not in employment, education, or training suggest a relation between the indicators, 2011



Source: Organisation for Economic Co-operation and Development. *Education at a Glance 2013: OECD Indicators*. Paris: OECD Publishing, 2013. Online at: <http://dx.doi.org/10.1787/eag-2013-en>

to be higher where vocational training shares are low. However, a deeper investigation into the details of this relationship is needed.

## DISCUSSION OF PROS AND CONS

The relevance of vocational education and training varies considerably across clusters of countries and depends on complex institutional arrangements [1]. In developed countries, vocational education and training can be classified into three distinct systems: vocational/technical schools, formal apprenticeships, and dual vocational training systems [2].

### School-based vocational training and education

Some countries have a large vocational schooling component as part of their upper secondary education system. This is the case for most southern European countries, including France, Italy, and Spain, and for some eastern European countries. In those countries, the schooling system is divided into a general education track and a vocational education track. While the general education track aims to provide youth with general, often academically-oriented knowledge as the basis for a university education, vocational education and training aims to provide youth with practice-oriented knowledge and skills to prepare them for particular occupations. Most frequently, vocational education and training follows a formal curriculum that combines general with occupational knowledge. Compulsory schooling integrates vocational education and training as an alternative to an academically-oriented schooling track or as part of several post-compulsory education options. Both the academic and the vocational tracks tend to impart general knowledge and skills. Thus, the skills provided by vocational schools are often transferable between employers, although the degree of transferability across occupations can vary [2].

In many countries, the vocational option is frequently seen as a safety net for students with poor academic performance who are at risk of dropping out of school and for students who are less academically inclined. The close link to work tasks and hands-on practical experience is expected to motivate more practically-oriented youths to continue training and remain in school longer. However, because the share of students who enter academic education after vocational schooling is very low, the vocational schooling option is often seen as a dead-end track and a second-choice education.

### Formal apprenticeship schemes

In some countries, vocational education and training is provided through formal apprenticeships, with institutional instruction complementing workplace training. This is mostly the case in Australia, the UK, and the US, but also in France and Italy, at least in some occupational groups. For example, the 2009 vocational schooling reform in the UK, the Apprenticeship, Skills, Children, and Learning Act, aimed at tightening the link between apprenticeships and employers and increasing incentives for employers to expand training activities. In 2010 the UK implemented the Specification of Apprenticeship Standards for England, which sought to harmonize the qualifications of different apprenticeships and increase transparency in training activities. In addition,

grants were made available to employers to support this initiative. In the US, formal apprenticeships still have limited scope and are confined largely to so-called “Registered Apprenticeships” in the construction sector (occupations such as electricians, carpenters, and plumbers). By devoting time to both theoretical instruction and work-based training, the US apprenticeship model aims to provide both general and occupation-specific knowledge. However, training in this apprenticeship system is focused at the firm level and functions without close links to the formal education system.

### Dual vocational training

Only a few countries—Austria, Denmark, Germany, and Switzerland—accommodate a major share of all secondary school graduates in dual vocational and educational training that combines vocational schooling and structured learning on-the-job. These countries’ dual systems have four key institutional elements in common.

- First, they have a high degree of formalization. The training is provided in centrally accredited occupational qualification institutions, where the training content is continuously adapted to meet changing labor market requirements.
- Second, there is strong and long-standing involvement by social partners, including regional trade and occupational committees, through advisory boards that assist in developing and maintaining curricula and monitoring outcomes.
- Third, vocational colleges, financed by the government, provide the school-based part of dual vocational education and training, which covers both general and occupation-specific education.
- And fourth, participating firms must meet certain technical standards to obtain accreditation.

In these vocational education and training systems, offering apprenticeships is optional for companies, but companies that choose to offer them follow standard application procedures to match firms and trainees. The companies cover the training costs within the firm [1].

While dual vocational education and training offers several benefits from a societal and individual perspective, establishing an efficient dual apprenticeship system depends on the willingness of a sufficient share of employers to participate actively in training young people. To ensure the transferability of skills across firms after graduation from apprenticeships, the training also needs to include an adequate amount of general schooling. As trainees could potentially leave a firm after completing training, thereby reaping all of the benefits of their acquired general skills, trainees must bear at least part of the general training costs in order for firms to continue to provide both specific and general training.

In countries like Germany, a collective agreement sets a generally applied remuneration rate for apprentices that is considerably below the wage for a full-time, low-paying job. This model can reconcile economic incentives for the apprentice and the employer. The apprentice benefits from moderate earnings and structured training that will facilitate promotion to a regular and better-paying job after the vocational education and training exams, while the employer receives some productive input from trainees even

in the early phase of vocational training. The dual apprenticeship system is more likely to succeed in countries where firms can credibly commit to provide relevant training in an apprenticeship program that includes apprenticeship regulation and external accreditation, and in which employer associations promote dual training and the government funds general vocational schools.

### Methodological challenges

How do the outcomes of dual vocational education and training systems compare with the outcomes of general education systems or those focusing on other types of vocational training? There is no easy answer, given the variation both across and within countries and studies. Institutional and cultural differences across countries, as well as differences in the amount of information on workers, jobs, and labor market characteristics available in the data sets used for analysis, explain some differences in findings. Several technical problems with the literature are difficult to overcome [2].

Most of the research compares the employment outcomes for vocational education and training graduates with the outcomes for an alternative group. These groups typically include general education students, students in other vocational education and training tracks, school dropouts, or college graduates in the same country, after controlling for all observable characteristics for which data are available. However, unobserved heterogeneity may still exist between categories of young people, given that people who opt for vocational education and training may have different abilities, tastes, and preferences about work than people who choose an alternative education system or no education. A related concern arises from the fact that different occupations require differing mixes of academic and practical skills. If young people self-select into occupations based on their skills, evaluating the effectiveness of the different training and education systems becomes difficult, considering that the employment patterns, payment structures, and union coverage in the occupations themselves may not be comparable.

Because of a lack of exogenous changes in the institutional setting, most of the country studies of vocational education and training programs use descriptive analyses. The studies control for student characteristics to capture the expected outcomes of the alternative forms of schooling, including grades and test scores, family background, and local economic conditions. Additional variables include subjective statements of preferences for vocational education and training or academic studies, self-assessments of ability, information on the vocational orientation of the school as embodied in full-time vocational teachers, and the schooling choices of previous cohorts of students.

Measurement issues must also be taken into account in studies comparing the effectiveness of different types of vocational education and training systems across countries. The covariation of other relevant institutional factors, the absence of a unified framework for defining particular training options, and differences in data coverage and quality frequently bias cross-country studies of the relative effectiveness of dual vocational education and training systems and school-based systems. To avoid this problem, some studies exploit the two systems' coexistence within a country to evaluate their relative effectiveness. However, in most countries one system dominates the other, the reason for which is probably correlated with the labor market structure, thus adding another source of endogeneity.

## The effects of vocational and technical secondary schooling

Reliable empirical evidence assessing the returns to school-based vocational education is limited, due mainly to the lack of appropriate data. In many countries, students negatively select into the vocational schooling track, which leads to systematic underestimation of vocational training effects when the selection is unaccounted for. Most of the evidence indicates that young people completing school-based vocational education and training do as well as (and sometimes better than) if they had remained in purely academic studies. Some studies find that school-based vocational education and training is most effective when there is a strong match between the vocational training area and the occupations graduates later enter. Additionally, vocational training is more effective when it is offered to students of low academic performance and those who work in low-skill jobs.

A number of studies providing evidence on labor market returns to vocational education in the US show positive effects in the short to medium term. They also find that for later cohorts, returns to attending technical schooling have increased over time. One study of differences in the returns to vocational training during the 1970s, 1980s, and 1990s for high school graduates who did not attend college finds a positive trend over time [3]. It remains unclear whether this occurred because of increased quality in education or an increase in demand for these skills. These positive wage and employment effects of having graduated from the vocational track are confirmed by other studies. The studies note that the increasing returns to vocational training in the US are most likely explained by a growing need for these types of skills during the 1980s and 1990s. Accounting for self-selection in track choice, a 2007 study finds that students on the technical or academic track are better off following the path they choose, suggesting that vocational education and training provides a valuable alternative for youth aiming to work in technical occupations [4].

Using data on high school qualifications in Israel, a study finds that school-based vocational education and training is beneficial only when there is a good match between the training and the occupation of graduates [5]. In such cases, vocational high school graduates earn an estimated 8–10% more than graduates with purely academic qualifications. However, the study finds no significant earnings differences between vocational high school graduates with unmatched jobs and academic high school graduates.

Some studies offer evidence of differential rates of return to vocational education. A study for the UK using a variety of data sets, accounting for the time taken to acquire different qualifications, and controlling (when possible) for ability bias and measurement error finds that the returns to school-based vocational education vary with the type of qualification obtained [6]. The returns to academic qualifications are higher if graduates subsequently acquire a skilled rather than an unskilled job. The returns to vocational qualifications are significantly higher for low-ability individuals.

Some studies that exploit a reform in the vocational education and training system to compare the effects of school-based vocational training and general academic education do not find any impact of adding another year of general education for students in the vocational training track. For example, a study analyzing reforms in the Netherlands in 1975 that extended by a year the general academic component of the vocational education and training program finds that the change has no effect on wages 20 years

later [7]. In addition, a study for Sweden analyzed a policy change in 1991 that increased the general education content of vocational schooling at the upper secondary level by one year, after which students were eligible to enroll in higher education [8]. Exploiting random differences in time and the regional implementation of a policy pilot, the study does not find any effects on subsequent continuation of study nor any increase in the wages earned up to 16 years after the beginning of upper secondary school. However, the study does find that low-achieving students are significantly more likely to drop out of upper secondary education after the reform.

An Italian study analyzing differences in early labor market outcomes between students in vocational and educational programs and students in general secondary schooling finds that the selection into each track is strongly related to parental background and ability. Using grandparents' school participation as an instrument, this study finds that participating in the vocational track improves early career employment and labor market participation rates, while general schooling raises the probability of participating in university education, both in the short term.

Going beyond that, a French study estimates both short- and long-term effects of the vocational and general schooling tracks [9]. Controlling for non-random selection, the study finds that technical education has a similar effect to that of a general education on the swiftness of entry into the first job. However, five years after entering the labor market, youths with lower levels of vocational schooling earn less than those who graduated from the academic schooling track. The study further finds that social networks are one channel through which participants in the lower- or medium-level vocational schooling track gain faster entry into employment, although this network effect fades over time.

### Evaluating apprenticeship schemes

Rigorous quantitative evidence on the effectiveness of apprenticeship schemes is scarce, even in countries where apprenticeships are widespread. A study of the returns to apprenticeships in the UK prior to the 2004 reform finds that while completing an apprenticeship increases wages 5–7% for men (controlling for other qualifications and personal characteristics), it has no effect for women [10]. The study also finds sectoral differences, with higher returns for men working in manufacturing industries than in the service sector. More recently, the same author compared the effectiveness of government-funded apprenticeships in the UK, which began in 2004, with the effectiveness of other types of vocational qualifications. The study finds that in 2004–2005, individuals who completed apprenticeships at level 3, the highest level, earned 18% more than those with a level 2 apprenticeship, and level 2 graduates earned 16% more than young people with an apprenticeship at level 1, the lowest level. However, as the study acknowledges, these estimates may be biased because employers may be taking only the best applicants since there is excess demand for apprenticeships.

The comparative performance of apprenticeship training and school-based training has also been studied in France [11]. Correcting for the negative selection of youths into apprenticeships, the study finds that apprenticeships do significantly better at integrating youths into their first job. However, this advantage fades over time and is not associated with higher wages. In addition, young people who are in the apprenticeship

system rather than in vocational schooling in France are more likely to successfully complete their final exam and undertake further education.

### **Is the dual vocational training system really better?**

As with apprenticeships, the dual vocational and educational system combining vocational schooling and structured learning on-the-job seems to outperform other types of vocational schooling. In this case, however, the benefits focus on employment opportunities, rather than earnings, and are concentrated at the beginning of an individual's professional life. In addition, recent causal estimates of the returns to dual training find no differences in wage returns relative to the academic track.

An extensive area of research exploits the coexistence of the dual vocational education and training systems and other types of vocational schooling within countries to infer their relative effectiveness and the relevance of firm-specific skills. In the case of Germany, participation in the dual vocational education and training system improves early labor market attachment and shows a faster and more structured integration into the labor market compared with other options within the vocational schooling system [12]. However, this advantage fades over time, as participants in other types of education establish a foothold in the labor market. Furthermore, the rapid initial transition does not hinge on finding employment in the firm that provides the training, suggesting that firm-specific skills do not play a major role in the German apprenticeship system.

When comparing the dual system with purely academic schooling, several studies find that wage returns to apprenticeship training in Germany and Austria range between 15% and 20%. Since dual training lasts three years on average, this implies a return of around 5% a year, which is not far from the returns to other forms of school-based education. However, selection into the dual system raises concerns that wage estimates will be biased given that the wages for apprenticeship-trained workers strongly increase along with the training firm's size. Other studies compare the career path of dual-system apprentices relative to that of unskilled workers who receive only on-the-job training. They find that apprenticeships lead to steeper wage increases initially, while wages for those who receive only on-the-job training (unskilled) grow more slowly but continue to grow for a longer time. Overall, wages are higher following an apprenticeship, with better job placement rates and lower job destruction rates after some years of experience.

### **LIMITATIONS AND GAPS**

The evidence on labor market outcomes of vocational education and training programs has several shortcomings. First, the nature of vocational training schemes poses severe methodological challenges, as discussed above. Thus, it is very difficult to identify the direct contribution of vocational training to individual careers. In particular, it is too early to reliably assess training schemes that have recently changed. Second, and a more substantial concern for policy design, is the issue of the potential side effects of vocational training on the employability and mobility of workers over their lifecycle, in particular in a rapidly changing economic environment. It would be important to determine whether, as some researchers argue, learning certain narrowly defined skills could limit worker mobility and switching to other more rewarding jobs later on in life. This issue needs to be addressed in further empirical research using longitudinal data over a longer period.



## SUMMARY AND POLICY ADVICE

Vocational training elements generate some added value both to the employers that provide training and to the trainees. They facilitate the smooth entry into more stable and better paid jobs at the beginning of a person's working life. A dual vocational education and training model might be preferable to other vocational education and training models in this respect, but it depends on three demanding preconditions.

- First, it requires support from a sufficiently large number of employers and their associations in terms of their willingness to train young people in a systematic and certifiable fashion.
- Second, it requires support from young people, trade unions, and parents in accepting apprenticeships as a phase of lower earnings in exchange for skill acquisition, so that apprenticeships are not seen as a second-best alternative to higher education.
- Third, it requires the provision of vocational schooling (including funding), a regulatory framework by government or employers, and monitoring to ensure the timely adaptation and labor market relevance of the curricula. Hence, the organizational capacities of governments and social partners are crucial.

Since most countries already have some form of vocational training—whether school-based, firm-based, or mixed—they can in principle start with the elements already in place and reform their systems to bring vocational education and training closer to employer and labor market needs. For example, if a number of employers in a region or sector can identify a joint interest in dual vocational education and training as a way to boost the productivity of their workforce, it might be realistic to start with a smaller dual vocational education and training cluster, ideally with government support for the vocational schooling component. Reaching a basic agreement on funding, management, and curricula could be a good starting point in such a case. Despite the benefits, vocational education and training should not be seen as a panacea to combat high youth unemployment. Vocational education and training must be complementary to structural reform policies to revive the economy and reduce such entry barriers to employment as too stringent dismissal protection and minimum wage regulations.

### Acknowledgments

The author thanks two anonymous referees and the IZA World of Labor editors for many helpful suggestions on earlier drafts. This paper is based on a shortened and revised version of [2].

### Competing interests

The IZA World of Labor project is committed to the *IZA Guiding Principles of Research Integrity*. The author declares to have observed these principles.

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