

## ALTERNATIVE PATHWAYS TO HIGH SCHOOL GRADUATION: AN INTERNATIONAL COMPARISON

Stephen Lamb

### Highlights:

- ▶ In an effort to increase the number of high school graduates, many countries have developed Career and Technical Education (CTE) programs to address the learning needs of students who traditionally have not pursued higher education.
- ▶ Nations offering separate CTE programs or qualifications combining school and workplace learning have the highest high school graduation rates.
- ▶ Countries with high levels of CTE graduates also tend to have above average levels of mathematics achievement on international tests.
- ▶ Compared to dropouts, graduates with work-based CTE qualifications, such as apprenticeships, gain economic benefits such as stable employment, reduced risk of unemployment, and higher earnings.
- ▶ Evidence suggests that apprenticeships are an important avenue of transition from school to full-time work.

Historically, the United States led the world in providing mass access to a high school education. However, graduation rates in the U.S. have become stable, whereas in other countries the rates have continued to climb, with some systems now achieving almost universal high school graduation rates. The provision of alternative pathways appears to contribute to these results.

How have other countries created alternative pathways to prepare high school students for college and careers? And how effectively do these pathways reduce dropout rates and deliver real benefits for those who participate?

### ▶ Academic Pathways

Every country provides academic preparatory programs in high school, though there is considerable variation in subject offerings and the requirements for graduation.

In some systems, neither the number of subjects nor the disciplines to be studied for accreditation are prescribed. In England and Scotland, for example, students may gain an upper secondary qualification in a single subject of their own choosing. In other systems, subject requirements in academic programs are much more prescribed. In Austria, for example, students undertaking the matriculation certificate (*Reifeprüfung*) must study three compulsory subjects—mathematics, German, and a foreign language—and additional subjects from a range of specialist and interdisciplinary electives. Graduation from academic programs is sometimes based on success in competitive national examinations, as in France and the Netherlands. Other nations, such as Sweden and Spain, use school-based assessment, though even in these systems there is sensitivity and pressure to the issue of ‘academic standards’.

Graduation is often tied to successful completion of a minimum number of subjects or credits. In many systems the requirement is to achieve minimum grade-levels in at least five subjects, including a set number of compulsory subjects covering key learning areas (such as mathematics and native language). An overall score, the equivalent of a grade-point average derived from a minimum number of subjects, is sometimes used as a threshold or standard for graduation.

Read the full report at: [lmri.ucsb.edu/dropouts](http://lmri.ucsb.edu/dropouts)

Despite the differences in graduation requirements, the goal of high school academic programs in all countries is the same: preparing students for university.

### ► **Alternative Pathways**

The challenge for all nations is how to effectively deal with the learning needs and achievement standards of those students who traditionally have not pursued higher education.

Many countries have developed alternative courses and qualifications to increase the number of high school graduates. The alternatives mainly involve vocational education or Career and Technical Education (CTE). There are several different models that vary, based on whether CTE and academic streams run in parallel or in integrated programs, the breadth and depth of occupational qualifications, the timing and nature of the choices that young people have to make between different pathways and post-school destinations, and assessment and graduation requirements.

One group of countries includes work-oriented CTE options as part of their high school diploma. They do this by offering a menu of CTE subjects or unit options from which students choose, along with general and academic subjects, as in the United States and Canada.

A second group of countries provides stand-alone vocational qualifications where there is little attempt at integration with academic or general programs. Instead the alternative pathways

have much stronger connection to employment and enterprises, and are mainly provided in separate institutions. Often students participate in schools and courses in the lower secondary years that already orient them towards CTE programs in the upper secondary years. Examples are the dual system of Germany and the vocational and apprenticeship programs offered in the Netherlands.

A third group of countries provides separate occupationally-structured CTE programs at the upper secondary level, but which retain links with general education and provide avenues to higher education. In Sweden, for example, about 50 percent of students enter one of 14 national CTE programs when they start high school, with remaining students taking one of two general courses. All programs include a common set of core subjects taken for about one-third of the time, with the remaining time in program-specific subjects and choices. The national programs are frameworks within which the pupils can choose various specializations designed around specific occupations and industries. All national programs qualify students for further study, including higher education.

### ► **Impact of Alternative Pathways**

The different approaches are related, on the surface at least, to differences in rates of graduation. The nations that offer separate CTE programs or qualifications combining school and workplace learning, such as Germany, Aus-

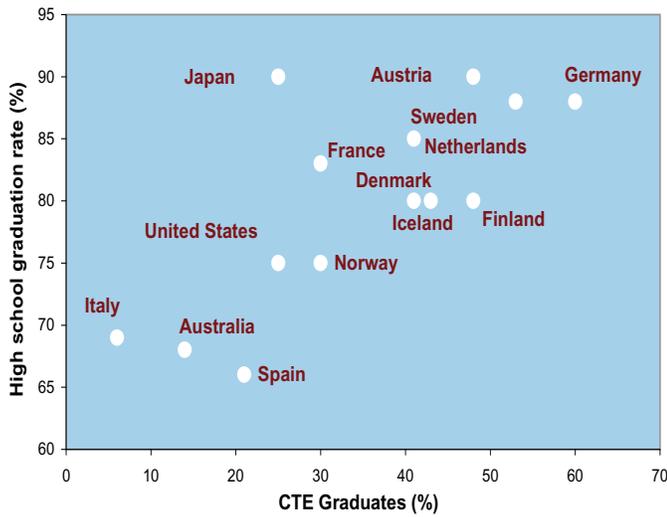
tria, and the Netherlands, have the highest rates of high school graduation (Figure 1). Sweden, which offers occupationally structured CTE programs that also qualify students for university, also has a high graduation rate.

Though other factors need to be considered before drawing causal conclusions, the patterns suggest that systems enrolling more students in CTE alternative pathways have strong high school graduation rates. Furthermore, providing CTE-based pathways need not compromise learning and achievement standards: countries with high levels of CTE graduates also tend to have above average levels of mathematics achievement on international tests (Figure 2).

Alternative CTE pathways can contribute to social and achievement differentiation within nations, however. Family background is strongly linked to who enters academic programs and who enters CTE courses. Also, even after controlling for social and other background differences, achievement levels of CTE students are lower than those of students in academic programs; though in some countries the differences are not significant, and in at least two (Luxembourg and Switzerland) achievement levels are higher for CTE students, suggesting that alternative pathways need not always be a source of low achievement or solely a path for low achievers.

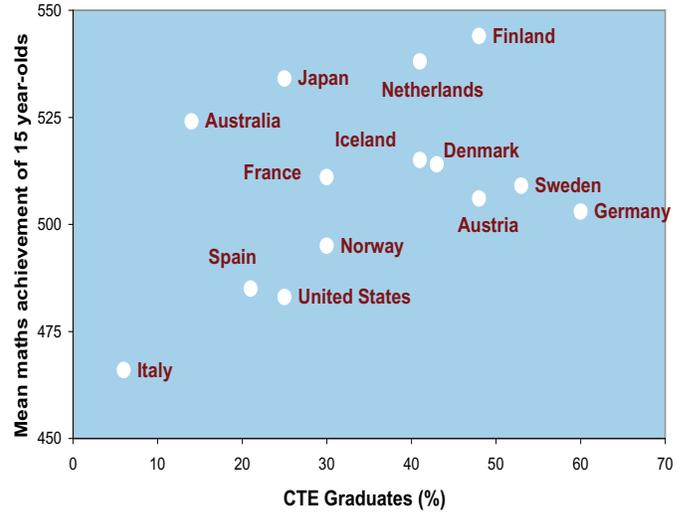
Other benefits of CTE pathways, particularly those involv-

**Figure 1: CTE graduates, by high school graduation rates**



SOURCE: Figures derived from various documents sourced from the National Ministries of Education and the National Statistics Bureaus of Australia, Austria, Denmark, France, Finland, Germany, Iceland, Italy, Japan, Netherlands, Norway, Spain, and Sweden, as well as the U.S. Department of Education, National Center for Educational Statistics

**Figure 2: CTE graduates, by mathematics achievement (PISA, 2003)**



SOURCE: PISA figures from OECD (2004) *Learning for Tomorrow's World*. First results from PISA 2003. OECD: Paris, Table 2.5c, p. 356. For sources of rates of CTE graduates, see Figure 1.

ing apprenticeships and employment-based training, include the contribution to young people’s job-related human capital. Research on outcomes shows that graduates with work-based CTE qualifications, such as apprenticeships, gain economic benefits such as stable employment, reduced risk of unemployment and higher earnings, compared to dropouts. In some nations, such as Australia and the United Kingdom, these CTE pathways are not offered in school, but as post-school opportunities which can work effectively to improve outcomes for dropouts. Such alternatives are important to help re-integrate dropouts into the education system while providing them with occupational skills that can assist in promoting successful transition to work.

► **Challenge**

Over recent decades, most western nations have stepped up

their efforts to raise high school graduation rates while maintaining high standards. How school systems have approached this, and how successful they are, varies. In some systems there is a menu of separate certificates and qualifications, each tied to a different strand of learning, and each representing a different pathway. In other systems there is a single certificate or qualification (such as a high school diploma), but with structured options producing academic, general and vocational tracks that work as pathways to different post-school options.

The success in some other countries has been partly achieved through developments based on the United States model. The Nordic countries—Sweden, Norway, and Finland—have all reformed their secondary school systems using a comprehensive school model. In addition, during the 1990s,

the three nations implemented a number of educational reforms focussing largely on CTE as a means of encouraging students to stay in school. Students who choose a CTE stream can pursue post-secondary studies, including university. This is achieved by having a stronger initial foundation in the early stages to prepare students for further learning.

The challenge in raising graduation rates is to ensure quality and consistency in the standards of learning for all students across all programs. Some nations have been more successful in doing this than others, but providing rigorous and meaningful alternative pathways with career and technical education seems to be the key.

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## *California Dropout Research Project Staff:*

**Russell W. Rumberger**, Director  
**Beverly Bavaro**, Editor/Web Manager  
**Michelle Lee**, Business Officer  
**Susan Rotermund**, Research Assistant

## *Policy Committee:*

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**Gary Orfield**  
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## *Funding:*

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**The Walter S. Johnson Foundation**

## *Contact:*

**University of California**  
**California Dropout Research Project**  
**4722 South Hall, MC3220**  
**Santa Barbara, CA 93106-3220**

*Tel:* 805-893-2683

*Email:* [dropouts@lmri.ucsb.edu](mailto:dropouts@lmri.ucsb.edu)

## *Project Web Site:*

[www.lmri.ucsb.edu/dropouts](http://www.lmri.ucsb.edu/dropouts)

University of California  
California Dropout Research Project  
4722 South Hall, MC 3220  
Santa Barbara, CA 93106-3220

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