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LEARNING FOR JOBS. OECD REVIEWS OF VOCATIONAL EDUCATION AND TRAINING.

UNITED STATES: SOUTH CAROLINA

This report is only available in PDF and is also available to download from the website: www.oecd.org/edu/learningforjobs.

Mr. Simon Field, Education and Training Policy Division
Email: Simon.Field@oecd.org, tel: +33 (0) 1 45 24 18 71

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Learning for Jobs
OECD Reviews of Vocational Education and Training

United States: South Carolina

Małgorzata Kuczera

January 2011

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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Summary: Strengths, Challenges and Recommendations

This review of career and technology education (CATE) in South Carolina is part of "Learning for Jobs", the OECD policy study of vocational education and training, a program of analytical work and individual country reviews designed to help countries make their CATE systems more responsive to labour market needs. The review of South Carolina assesses the main challenges faced by the CATE system and presents an interconnected package of four policy recommendations. Each recommendation is described in terms of the challenge, the recommendation itself, supporting arguments, and issues of implementation.

Strengths

The South Carolina CATE system has many strengths:

- CATE programs are provided within high schools and career and technology centers, and enjoy relatively high status.
- Strong general skills are embedded in CATE and all high school students are expected to be college ready upon high school completion.
- South Carolina has launched an ambitious set of reforms in CATE and other parts of the education system initiated by the 'Education and Economic Development Act'. The Act aims to improve skills in South Carolina's workforce.
- Career and counseling guidance is exemplary in many respects. It encompasses all education levels, involves various stakeholders and agencies, and has a clear objective of improving career information and career awareness in students.
- There are numerous pathways leading to a CATE teacher profession that help to attract the best people to the field.
- Employers are actively involved in CATE.
- South Carolina has a strong technical college system.

Challenges

Some challenges remain. Many of them are related to a wider context that bears on CATE and on skills development in the state – in particular high levels of poverty and school standards in the US as a whole which are relatively weak for an advanced country. More specifically, the challenges for South Carolina include:

- The resources of any school depend to a large extent on the resources available to the locality (school district) and are collected through local taxes. This arrangement contributes to an unequal distribution of resources across districts

and schools. The state compensates for the differences in local wealth by allocating more resources to poor districts. But this allocation may be undermined by the current recession and severe budgetary cuts.

- Very few high school students receive extensive work experience during their high school studies. While a high school model with extensive work experience provided to most students is not necessarily a desirable route to follow for South Carolina, some students could benefit from more diversified options for work experience.
- Too many students leave high school without sufficient basic skills for either the labour market or postsecondary education. As a result, many students in technical colleges need remedial courses to catch up and develop skills that should have been developed in high school.
- Many adults also lack basic literacy and numeracy skills. Division of responsibilities for adult education and training across different agencies may lead to duplication of efforts and overlap of services. The current recession will potentially reduce the provision and availability of adult education and training.

Recommendations

1. Monitor the impact of budgetary cuts on CATE provision in poorer districts and schools, take remedial action if necessary and ensure that funds are invested efficiently through careful evaluation of initiatives. Ensure that teacher allocation policies support this objective.
2. Provide high school students who wish to enter the job market directly with more substantial work experience while in school. Make targeted efforts to ensure that students from disadvantaged backgrounds have such access. Take action to increase the level of co-operation across school district boundaries in the provision workplace learning opportunities.
3. Sustain the effort to improve literacy and numeracy and preparedness for college in high school CATE students, in particular among disadvantaged students. Strengthen co-operation between academic teachers and CATE teachers to this end.
4. Maintain efforts to ensure that all adults without basic skills have an opportunity to develop their knowledge and skills. While recognising the priority attached to basic schooling, give particular attention to the needs of young adults. Enhance co-ordination between different agencies dealing with adult education.

Chapter 1

Introduction

This chapter describes the OECD policy study of CATE, the review of South Carolina, summarises the main features of the South Carolina CATE system and sets out an assessment of its strengths and challenges.

1.1 The OECD policy review of South Carolina

This is one of a series of reviews of career and technology education (CATE)/vocational education and training (VET) in OECD countries (see Box 1.1).

Box 1.1 Learning for Jobs: the OECD review

The review aims to bridge the gap between learning and jobs, by exploring how to make CATE/VET for young people respond better to labour market requirements. It therefore looks at initial CATE/VET in schools, colleges, workplaces and other institutions, offering policy messages for all OECD countries, alongside concrete advice on policy reform in reviewed countries. A program of analytical work drew on evidence from all OECD countries, including a questionnaire on CATE/VET systems, literature reviews of previous OECD studies and the academic literature on topics such as costs and benefits, career guidance and CATE/VET during the economic crisis. The results of both the analytical work and the country reviews fed into this comparative report, of which an initial version was published on the OECD website in October 2009.

Skills Beyond School, a new policy review examining postsecondary vocational education and training was launched by the OECD at the end of 2010.

See *www.oecd.org/edu/learningforjobs.*

Country policy reviews were carried out in Australia, Austria, Belgium (Flanders), the Czech Republic, Germany, Hungary, Ireland, Korea, Mexico, Norway, Sweden, Switzerland, the United Kingdom (England and Wales), and the United States (South Carolina and Texas) between the end of 2007 and 2010. Special studies were also conducted in Chile and the People's Republic of China. Canada, Denmark, Finland and the Netherlands have also contributed financially to the work.

The review follows the standard methodology established for the OECD policy review of vocational education and training. An OECD Secretariat team visited South Carolina on 6-12 January 2010 for an initial preparatory visit to assemble information on the characteristics of CATE in South Carolina and to identify the main policy challenges. Then the South Carolina authorities were invited to complete a detailed questionnaire. Equipped with the responses and other background information, two members of the Secretariat returned for a week of policy visits on 16-19 March 2010 to conduct further interviews in various parts of South Carolina (see Annex for the program of the visits) in order to develop policy recommendations. This review presents their recommendations, with supporting analysis and data. (An earlier draft of this report was submitted to the South Carolina authorities for verification of factual information in order to ensure that the description of the South Carolina CATE system presented in this document is correct).

The review is not comprehensive, but it examines policy issues in the context of the whole CATE system. The review deals with a deliberately limited set of issues, on which it could draw on international experience or could otherwise usefully add value to the domestic policy debate.

1.2 The structure of the report

This first chapter places the South Carolina review of CATE in the context of the OECD policy study of CATE, presents the structure of the report, describes the main

features of South Carolina CATE system, and examines its strengths and challenges. The second chapter proposes policy recommendations.

Each policy recommendation is set out as:

- *The challenge* – the problem that gives rise to the recommendation.
- *The recommendation – the text of the recommendation.*
- *The supporting arguments – the evidence that supports the recommendation.*
- *Implementation – a discussion* of how the recommendation might be implemented.

1.3 A snapshot of the system

Career and technology education typically takes place at high school level, in postsecondary and tertiary institutions including technical colleges, and in adult education and training.

CATE is provided within a comprehensive high school framework, there are no separate pathways for CATE and academically oriented students. In 2008-2009 83% of high school students participated in at least one CATE course and nearly 8% of CATE participants took 3 Carnegie or more units of credit in a state-recognised CATE program.

All high school students are required to take 17 core academic courses, including 4 units in mathematics, 4 in English and 3 in science. In addition to the core units students choose from a wide range of elective subjects (*e.g.* in CATE, arts, more advanced academic subjects) according to their interests and career plans, for a total of 24 units. CATE elective subjects are grouped in sixteen career clusters based upon the national career clusters. To provide a wide range of career options school districts are required to ensure that each high school within the district offers programs in at least three clusters.

CATE courses are provided either on the high school site or in one of 39 career centers. Typically career centers serve students from different high schools in one district, but 11 career centers cater to students from more than one district. Various forms of work-based learning in companies are available to students: job shadowing, service learning, cooperative education, work-based mentoring, internships and youth apprenticeships.

- Youth Apprenticeship is a structured program lasting three to four years for students who are at least 16 years old. Apprenticeships provide work-based employer training that connects to secondary schools. Students may earn work-based course credits provided state course requirements are met. A formal written agreement that is signed by the student, parents, employer and school define the rights and duties of all parties. (*http://personalpathways.sc.gov/lowersavannah/Students/lsrealworldwrkexp.htm*)
- An internship provides a one-on-one relationship for hands-on learning and generally last several months with the student working, paid or unpaid, under the supervision of an employer (mentor). (*http://personalpathways.sc.gov/lowersavannah/Students/lsrealworldwrkexp.htm*)
- Co-operative education is a structured program that combines related classroom instruction in CATE education programs with supervised, paid work experience

through written arrangements between the school and employers. Work periods and school attendance may be on alternate half days, full days or other periods of time. Students may earn work-based course credit provided state course requirements are met. (*http://personalpathways.sc.gov/lowersavannah/Students/lsrealworldwrkexp.htm*)

- Service Learning connects students with community organisations or service projects in the areas of education, environment, human needs or public safety. Service Learning promotes both personal and intellectual growth in students, helps them develop civic responsibility, and provides an opportunity for career exploration. (*http://personalpathways.sc.gov/lowersavannah/Students/lsrealworldwrkexp.htm*)
- Shadowing is a one-time educational work-based learning experience, lasting four to eight hours, which introduces a student to a particular job or career by pairing the student with an employee (mentor) of a business, industry or an agency. The student will follow or "shadow" the employee as normal work activities are performed, will observe, ask questions, and gain firsthand knowledge of the requirements of a career field and of the workplace. (*http://personalpathways.sc.gov/lowersavannah/Students/lsrealworldwrkexp.htm*)

Youth Apprenticeships, as just discussed above, cater to high school students. By contrast, Registered Apprenticeship is for relatively skilled people; often at least a high school diploma is required. Registered Apprenticeship started in 2007 with 777 individuals participating. By the end of 2009 participation had more than doubled to the level of 2 001 participants. Apprenticeship is provided in six industry clusters such as advanced manufacturing and technologies, energy, construction, transportation and logistics, health care and tourism (*apprenticeshipcarolina.com*). It is available to those who are 16 years or older and may last from one to six years. The average duration for all industry is about 3.5 years. Apprentices must have the status of employees. During training apprentices receive a training salary that increases over time, and is negotiated in individual companies in relation to the average salary of a skilled worker. Apprenticeship training aims to equip apprentices with broad occupation skills as well as employer specific skills. Training includes both on-the-job training provided by the employer and an off-the-job component. There are different types of off-the-job training provision, often it takes place in technical colleges or is provided by instructors from technical colleges. Typically an employer bears the cost of on-the-job and off-the-job training but the state may fund off-the-job training in technical colleges when apprenticeship is a way of recruiting new employees. The program has to meet federally approved standards for job duties, related to classroom instruction, wages and safety and health conditions and also includes a formal written agreement defining specific workplace competencies. It is governed by the federal Department of Labour.

At postsecondary level CATE students can enroll in one of 1 000 programs provided by technical colleges grouped into the following clusters: agriculture, business, computer technology, engineering technology, health science, industrial technology and public service (Rex *et al*., 2008). In 2008, 40% of all undergraduates were enrolled in technical college (full time equivalent student enrollment). Technical colleges provide two year programs leading to an associate degree and certificate programs of one year duration or less and continuing education and training (not rewarded with credits).

Adult and continuing education is under the responsibility of different agencies including the South Carolina Department of Education and the US Department of Labour.

While programs delivered by the Department of Education focus more on education, programs under the responsibility of the US Department of Labour focus on workforce training and making people job ready.

1.4 CATE in the US in comparison with vocational education in other OECD countries

The approach of the United States to high school CATE has some distinctive features. Looking at other OECD countries, there are three main models of high school CATE. One is the 'dual system' with youth apprenticeships alternating schooling with workplace training, found, for example in the Germanophone countries in Europe, but also elsewhere. In this model academic high schools, leading to university, are a separate track. The second model is that of a vocational high school (again a separate track from academic high schools) where young people receive vocational preparation alongside other education and may or may not also have the opportunity to enter postsecondary education. This model is very widespread in Europe, but is also the dominant model in, for example, China, Mexico and South Korea. The third model involves comprehensive high schools with relatively little vocational preparation at high school (upper secondary) level, and is found, for example, in the United Kingdom (although youth apprenticeships have been expanding). Each of these models has strengths and weaknesses and needs adaptation to both the labour market and other institutions of individual countries. One very typical dilemma, arising in many countries, is that more 'vocational' models with the emphasis on very specific and practical skills may be more effective at supporting an immediate entry into the labour market, but sometimes less effective at supporting further career development including further education.

The US approach is, in effect, a distinctive fourth model in that it includes CATE modules within a comprehensive high school program. Its great merit is that it allows elements of vocational preparation, including workplace experience, and the benefits flowing from that experience, without the disadvantages of early vocational tracking, and early career choice. In principle it should allow all young people to explore career options and gain useful workplace experience without stigmatising those involved as unsuited to academic study, and sustaining an emphasis on core academic skills including numeracy and literacy that will indeed support further education and career development. In practice of course it does not always work out like this (and some of the challenges in practice are considered below) but in principle the model is strong.

1.5 Appreciation of the South Carolina approach

South Carolina CATE as part of comprehensive high school

Many OECD countries (such as Austria, Switzerland, Germany, Belgium Flanders) track vocational and academically oriented students to separate institutions, typically according to performance and academic ability. In a few countries such as Sweden and Norway selection is not imposed by schools, but students select themselves according to their interests, academic performance and career plans. Since academic performance is related to student socio-economic background, students selected to vocational pathways are typically those with lower socio-economic status (OECD, 2008a). Consequently, vocational schools are more likely to cater to students with disadvantaged backgrounds,

students who presumably are more demanding in terms of teaching and behavioral needs. In some countries the quality of education tends to be poorer in vocational tracks than in academic pathways (Kis, 2010a; Kuczera 2010). In South Carolina, as opposed to many OECD countries, CATE is provided within the comprehensive high school and not linked to the socio-economic status of the school population (measured by the percentage of students eligible for free lunches); schools with low poverty rates are as likely to provide CATE as high poverty schools.

High schools aim to develop strong basic skills alongside CATE

Strong basic skills embedded in CATE are a great asset of the South Carolina system. All high school students, regardless of whether they opt for CATE or not, are expected to meet core requirements in academic subjects and have the capacity to continue their education at postsecondary level. In practice some students struggle with general skills and leave high school without being college ready.

Impetus for reform

The scale and depth of initiatives undertaken recently in the frame of South Carolina CATE are impressive. In 2005 South Carolina adopted the 'Education and Economic Development Act' (EEDA) to better respond to the changing demand for skills. The EEDA creates a legislative framework that binds all school districts, high schools, career centers and technical colleges and therefore provides a coherent policy development line for the entire state. The Act launched a series of ambitious initiatives that span all schooling from kindergarten to postsecondary education and entry into the labour market. Its objective is to prepare all students for postsecondary education and for satisfying professions. Many of the reforms affect CATE, *e.g.* the role of career planning in education is increased, business participation in education is strongly encouraged and academic and career elements are blended into career clusters and majors. However, the results of the reform will depend not only on the situation in CATE and in education but also on the wider context in which education operates. Large inequalities in wealth distribution in the US[1], the relatively high poverty rate in South Carolina[2], and then the recent recession are just some of the contextual obstacles to the realisation of the EEDA objectives.

High quality career guidance

Career guidance and counseling in the form proposed by the EEDA has many strengths. It encompasses all education levels, involves different stakeholders, and has a clear objective of improving career information and increasing career awareness in students. These contrast with the situation in many other OECD countries where career education and guidance is not clearly distinguished from school counseling and where career guidance is often fragmented between different bodies and levels of education.

1. The US (along Mexico, Turkey and Portugal) is among the OECD countries with the highest level of income inequality as measured by Gini coefficient (OECD, 2008b).

2. Many students in public schools come from low income families, nearly half of students population is eligible for subsidised meals, compared to 43% in the US on average.

Individual Graduation Plans (IGP) are a key element of career guidance. They are designed to prepare students for seamless transition to employment, further training or postsecondary education. At the end of middle school (8th grade) students select a study cluster and develop an IGP. During their 9th and 10th grades students refine their preferences and choose relevant courses. The initiative recognises the role of parents in student decision-making and requires their active involvement in development of the individual graduation plan. The IGP is also used to build a rich longitudinal data base. Information on each student is collected from middle school through high school and college up to the labour market. Among other things this information will allow the labour market outcomes of CATE to be evaluated.

The importance attached to career issues is reflected in the requirements for professionals dealing with career guidance in schools. The position of career specialist is clearly separated from that of school counselor; guidance personnel in school are expected to include both types of specialists. Career specialists are also required to complete training relevant to career development (South Carolina Department of Education and Tenenbaum, 2006). To improve the availability of career guidance, the EEDA aims to diminish the student-to-guidance personnel ratio to three hundred to one. All these are admirable features of the South Carolina career guidance system. In comparison, in many other countries there is neither a specific profession nor a qualification for career specialists. Usually career advice is blended into a broad counseling role and provided by school counselors, who often lack the time and skills to tackle career issues. Research evidence shows that the preparation of those providing career advice has a bearing on student choices (OECD 2010a).

Career guidance draws on the services of different agencies. While the main responsibility for career guidance and counseling remains within the South Carolina Department of Education, school districts are encouraged to collaborate with the South Carolina Employment Commission, which provides a link between employers and young people seeking employment.

South Carolina career guidance and counseling is supported by exhaustive career and education information available for free on a public website. The College and Career Planning System offers detailed online information to students, parents and educators on a wide range of topics. The "career planning" section includes an overview of nearly 1 000 occupations, describing the occupation, important interests, skills and abilities, education requirements and income. Students can obtain information on programs after high school, ranging from three months training to doctoral programs. They can also learn about preparing for different programs and financing their studies (Personal Pathways to Success, career planning web site).

Investment in CATE teachers

In many countries pathways leading to the CATE teacher profession are not flexible and requirements cumbersome, which deters good candidates from entering the profession because of the time required and the cost. South Carolina addressed this issue by creating a number of pathways leading to the CATE teacher profession.

In areas where approved teaching programs exist (such as business education and industrial technology) individuals without the relevant teaching qualification can be certified through the state's Program for Alternative Certifications of Educators (PACE).

In programs for which no approved teacher education programs exist (such as welding, cosmetology and culinary arts), individuals with relevant work experience can enter the teaching profession through the state's CATE work-based certification program. Candidates must show that they have the required competences either by obtaining an appropriate industry certification or by passing the state-approved competence examination in the chosen area.

Prospective CATE teachers coming from industry often have little experience with teaching. To provide them with pedagogical skills and help them to make a successful transition from industry to school, an obligatory training program (DIRECT) was designed especially to meet their needs. The DIRECT program provides both classroom and hands-on instruction in methods of teaching, classroom and laboratory management, curriculum and assessment. Courses are provided over nine days during the summer and on Saturdays during Years 1 and 2 of the program (18 days of training) (Rex *et al*., 2008).

Collaboration with employers

A good level of employer involvement and support underpins the CATE system. The EEDA is a result of collaborative work by business leaders, educators and legislators and has the full support of the South Carolina Chamber of Commerce *(http://southcarolinasccoc.weblinkconnect.com/CWT/EXTERNAL/WCPAGES/Workforce/wfd_overview.aspx*). The EEDA explicitly encourages stronger collaboration with employers and their active involvement in education.

Representatives of business, industry and labour are involved in high school CATE through advisory councils and committees, which can be formed at all levels: state, district, school. Advisory bodies are required at the district and school level. The advisory councils and committees provide a link between education, business and industry in the locality. They review and recommend approval of the local career and technology plans and advise on current and future employment and training needs. More specifically, they can assist with the creation of work-based opportunities for students, assist with in-service training for CATE staff and make recommendations concerning equipment (Rex *et al.*, 2009).

Employers also participate actively in the administration of postsecondary CATE. Each college has an academic advisory committee including employers for each of the CATE program areas. Business and industry representatives also serve as members of the local area commission for each college.

Strong technical college sector flexibly meeting employers needs

At postsecondary level the 16 technical colleges play an important role in South Carolina workforce development strategy and in meeting local employer needs. Business representatives are actively involved in evaluating the quality of education and training programs and in defining program content, especially in shorter certificate programs. Certificate programs are specifically designed to meet the labour market needs of each college's service area. Technical college programs are evaluated relative to their responsiveness to local labour market needs. A new program or course cannot be opened unless there are opportunities for employment in the specific field of proposed study (Rex *et al*., 2008). The programs that are run already are assessed according to their placement rate. In associate degrees at least half of the graduates must be placed on a job related to their education or continuing their education on a full-time basis. The

evaluation of the certificate programs is based on education-related job placements (State Board for Technical and Comprehensive Education, 2009). The proportion of South Carolina graduates who take and pass licensing examinations leading to vocational and technical professions is above the US average. Miller and Ewell (2005) explain this by a strong historic commitment to technical colleges in South Carolina.

1.6 Strengths and challenges

In summary, the strengths of the South Carolina CATE system include:

- CATE programs are provided within high schools and career and technology centers, and enjoy relatively high status.
- Strong general skills are embedded in CATE and all high school students are expected to be college ready upon high school completion.
- South Carolina has launched an ambitious set of reforms in CATE and other parts of the education system initiated by the 'Education and Economic Development Act'. The Act aims to improve skills in South Carolina workforce.
- Career and counseling guidance is exemplary in many respects. It encompasses all education levels, involves various stakeholders and agencies, and has a clear objective of improving career information and career awareness in students.
- There are numerous pathways leading to a CATE teacher profession that help to attract the best people to the field.
- Employers are actively involved in CATE.
- South Carolina has a strong technical college system.

Some challenges remain. Many of them are related to a wider context that bears on CATE and on skills development in the state – in particular high levels of poverty and school standards in the US as a whole which are relatively weak for an advanced country. More specifically, the challenges for South Carolina include:

- The resources of any school depend to a large extent on the resources available to the locality (school district) and are collected through local taxes. This arrangement contributes to an unequal distribution of resources across districts and schools. The state compensates for the differences in local wealth by allocating more resources to poor districts. But this allocation may be undermined by the current recession and severe budgetary cuts.
- Very few high school students receive extensive work experience during their high school studies. While a high school model with extensive work experience provided to most students is not necessarily a desirable route to follow for South Carolina, some students could benefit from more diversified options for work experience.
- Too many students leave high school without sufficient basic skills for either the labour market or postsecondary education. As a result, many students in technical colleges need remedial courses to catch up and develop skills that should have been developed in high school.

- Many adults also lack basic literacy and numeracy skills. Division of responsibilities for adult education and training across different agencies may lead to duplication of efforts and overlap of services. The current recession will potentially reduce the provision and availability of adult education and training.

Chapter 2

Policy Recommendations

South Carolina has launched a range of initiatives to improve its CATE system. The scale and depth of the reforms are impressive. Despite this remarkable reform effort, some challenges in CATE remain. Many of these challenges are related to a wider context that bears on CATE and on skills development in the state. For this reason, the discussion in this review refers to this broader context drawing out its implications for CATE.

To address the challenges the CATE system is confronting, a set of four interconnected recommendations is proposed. First, the state and school districts budgets are shrinking and poor districts and schools are the most affected. To minimise the impact of the budgetary cuts on CATE provision, funds need to be invested efficiently through careful evaluation of initiatives and allocation of good quality teachers to needy schools. Second, young people who enter the job market upon completion of high school need better preparation in terms of job relevant skills. To this end, an option with more substantial work experience should be provided in high school. Closer co-operation between districts should increase availability of good workplace learning opportunities. Third, too many students leave high school without sufficient basic skills that are necessary on the labour market and in postsecondary education. South Carolina has launched many initiatives to address this issue. These efforts should be maintained. Closer co-operation between CATE teachers and academic teachers will potentially improve provision of basic skills to CATE students. Fourth, many adults also struggle with basic skills and provision of services for adult learners is endangered by the limited public resources. In this context, better co-operation between the agencies responsible for services to adults may improve provision without augmenting costs.

2.1 Financial and human resources

For those enrolled in CATE courses, broader funding arrangements are very important as they impact both on CATE programs directly and on more general courses. For the most part this chapter looks at high school funding in general, drawing out its implication for CATE provision.

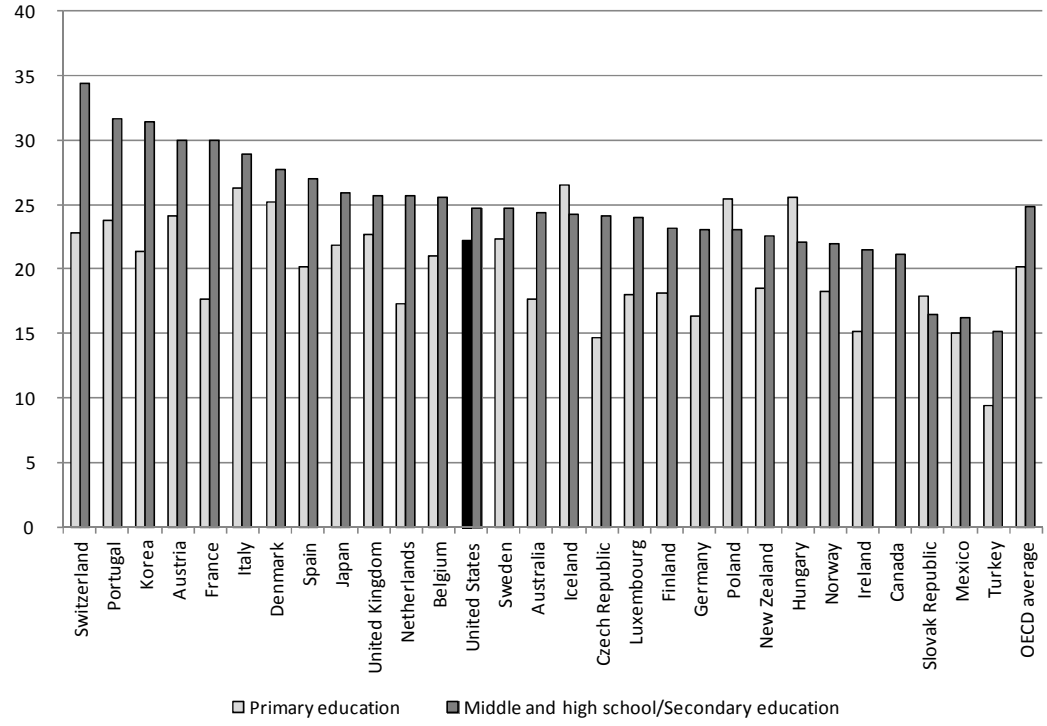
Challenges

High overall US expenditure but unequally distributed

In the US education spending per middle and high school student[3] is around the OECD average in relation to per capita GDP (see Figure 2.1). At primary and secondary level US households contribute 9% of educational expenditure, slightly above the OECD average. The remaining 90% is covered from public sources.

Figure 2.1 Expenditure on educational institutions per student relative to GDP per capita

By level (2006)



Source: OECD (2009a), *Education at a Glance 2009. OECD Indicators*, OECD, Paris.

3. In most OECD countries VET is provided at upper-secondary level (high school).

South Carolina is one of the poorest US states (46th out of 50 states in terms of GDP per capita) (*http://www.bea.gov/newsreleases/regional/gdp_state/gsp_newsrelease.htm*). Given that in the US provision of education depends heavily on state and local budgets, it is not surprising that per student spending (elementary-secondary) in South Carolina at USD 9 864 in 2005-2006 is below the US average of USD 10 615 *(http://nces.ed.gov/programs/digest/d08/tables/dt08_182.asp).* But although the absolute levels of spending are not that high, the state has been giving more relative priority to education than most other US states. South Carolina spent 4.95 % of state GDP on education (pre-primary through secondary) in 2007, the 4th highest in the US after Vermont, New Jersey and Michigan.

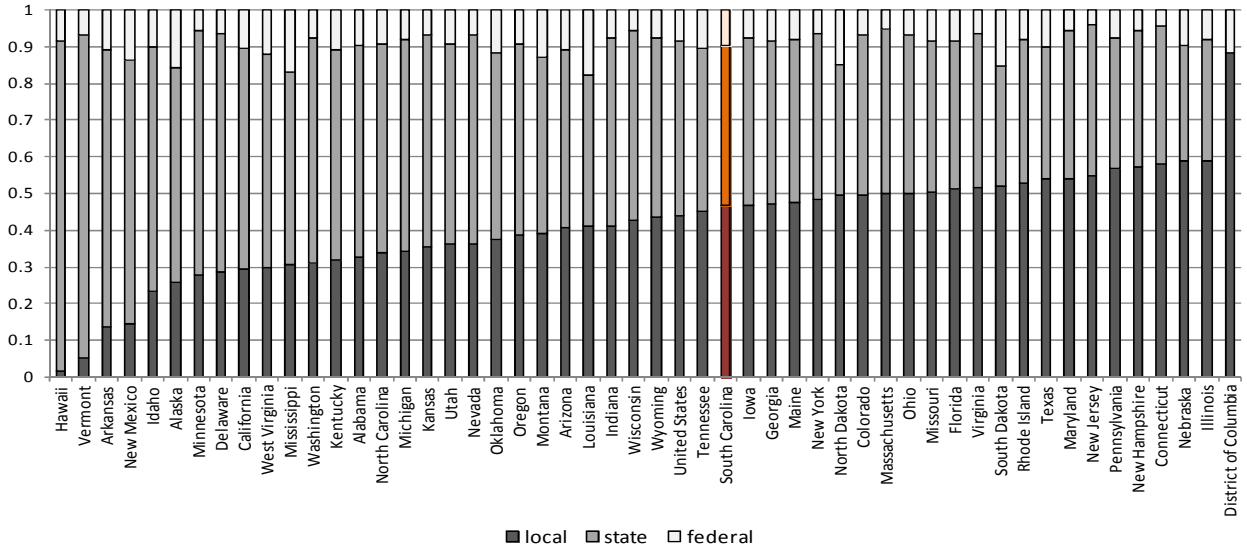
Budgetary cuts and their impact on poor districts

It remains to be seen whether South Carolina will succeed in maintaining the priority it has been attaching to education. Like other states it is undergoing severe budgetary pressures in response to the recession and declining tax revenues. Education and training across all levels will be subject to cuts; base spending on education provision per pupil is set to be reduced to the 1995 level. While some budgetary shortfalls are offset by federal aid through the American Recovery and Reinvestment Act, most of the funds from this source will be spent by the end of the 2011 fiscal year, well before state revenues are likely to recover (Oliff and Johnson, 2010). This will raise serious resource challenges to the education system in South Carolina, CATE included.

Both general education and CATE are very dependent on local resources. In South Carolina local (school district) budgets cover 47% of expenditures on elementary-secondary education, more than in the majority of other states (see Figure 2.2). CATE is disproportionally reliant on local contributions; 82% of CATE course expenses are funded from local sources, 8% from state sources and 10% from federal funds. Around one quarter of the state funds for CATE are allocated to districts to support work-based learning (weighted towards poor districts) and three quarters for equipment (designed to help smaller districts to obtain CATE equipment and facilities).

Figure 2.2 US education expenditure by source

Includes current expenditure and capital outlays on elementary-secondary education, 2006-2007

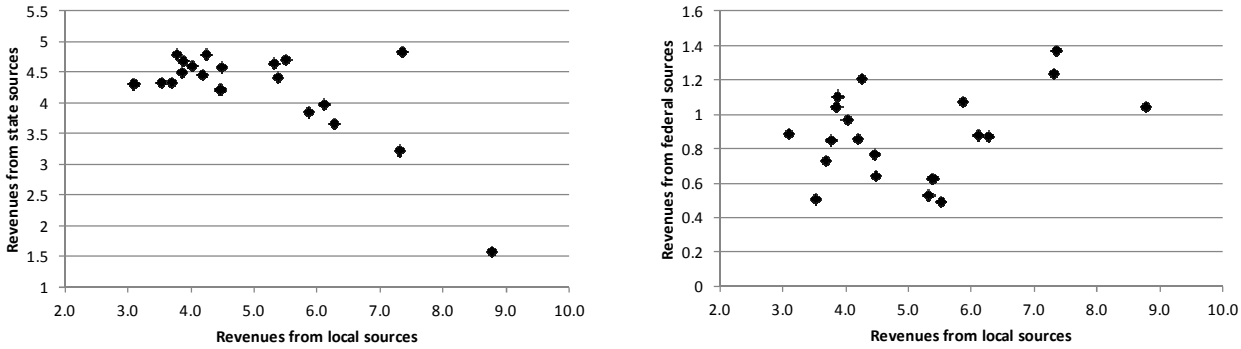


Source: US Census Bureau (2009), *Public Education Finances 2007*, US Census Bureau. *www2.census.gov/govs/school/07f33pub.pdf*

Disparities in local economic circumstances and therefore in educational resources are large. The percentage of the population in poverty within districts ranges from 18% to more than 97% (Miley and Associates, 2003). The state has sought to compensate for these variations and per pupil expenditure inequalities were significantly reduced between 1972 and 2002 (Corcoran and Evans, 2009). While the state allocates more funds to districts with lower local revenues, the effect of federal distribution regimes (for reasons which are not entirely clear) is to reinforce initial inequalities in resource availability (see Figure 2.3) (for more on federal allocations see for example: The Education Trust, 2006; Carey and Roza, 2008).

Figure 2.3 Relationship between local revenues and state and federal transfers in South Carolina

In thousand dollars per pupil; school districts with enrolments of 1 0000 or more (2007)



Source: Author's calculations based on the US Census Bureau (2009), *Public Education Finances 2007*, US Census Bureau, Table 15, *www2.census.gov/govs/school/07f33pub.pdf*

Property taxes have historically been an important source of education funds for school districts. In the past, richer school districts with higher property values and therefore taxes were able to raise more funds for education (elementary-secondary). In 2006 property taxation for school operations was replaced by increased sales taxes while at the same time the state reimbursed school districts the amount of property taxes that would have been collected under the previous arrangement. The effect is to retain the alignment of school district revenues with local property values.

Overlaid on this basic tax arrangement is a mechanism of redistribution. Additional funding is made available to districts in respect of eligible students in poverty in order to equalise distribution of resources across school districts (South Carolina Statehouse web site, Changes to Property Tax H.449). But Ulbrich (2010) argues that despite this redistributive measure overall tax policy reinforces wealth inequity by allocating more revenues per pupil to counties with a stronger tax base. The gap in property values is widening. Between 2005 and 2007 per capita property values increased in all counties except six, with two out of the six counties (Marion and Allendale) already among counties with the lowest property values in the state (South Carolina Association of Counties: *www.sccounties.org/counties/county-statistics.aspx*).

In addition, to compensate for differences in local wealth the state redistributes resources from richer to poorer districts[4]. The state defines the cost of education provision in each district[5] which is then shared between the state and district, with the state contribution depending on district wealth. Consequently, districts with low tax revenues receive more support from the state than richer districts. This is the key equalisation measure in the funding system in South Carolina (Ulbrich and Saltzman, 2009).

The coming squeeze in state funding for K12 education and declining local revenues may increase disparities in the funding available to school districts and schools. Declining state revenues increase the financial pressures on school districts, which are also seeing their budgets squeezed. Poor districts may face particular challenges since they are more dependent on state transfers. Miley and Associates (2003) argue that because of wide economic differences between districts a declining state budget disproportionally hurts poor districts.

Weak co-operation between districts in CATE and more generally

The extent of co-operation between school districts is currently quite limited, as argued by Ulrich (2010). In CATE hardly any students obtain work experience outside their school districts. This may mean that existing opportunities for co-operation between districts are not sufficient or not used effectively. Ulbrich (2010) argues that the funding system is an obstacle since districts with a rich tax base are often unwilling to share their wealth with poorer districts.

Three structures currently serve to foster co-operation across districts in CATE: multidistrict career centers, regional education centers, and special initiatives in some multidistrict counties. School districts offer secondary CATE programs in high schools, middle schools, and career and technology centers that operate within most of the larger

4. This rule was enforced by the Education Finance Act in 1977.

5. Per pupil expenditure is adjusted according to different criteria such as level of education and different forms of disability, for example vocational students in grades 9-12 receive a weight of 1.29.

school districts. In addition, eleven independent, multidistrict career centers provide CATE programs to students from districts that do not have their own career centers (Rex *et al.*, 2008). Multidistrict career centers funded by a few districts, are an excellent example of economies of scale through district co-operation. 12 recently established Regional Education Centers are designed to improve co-ordination between districts and counties, by operation not as service providers but rather as "brokers" of services throughout a region. They can be used as the central point of information for finding out how to access the specific services and to contact the service provider (*www2.scpathways.org/rec_faqs.html*). Finally, several multi-district counties practice some form of resource sharing between school districts within the county (Ulbrich, 2010).

Policy recommendation

Monitor the impact of budgetary cuts on CATE provision in poorer districts and schools, take remedial action if necessary and ensure that funds are invested efficiently through careful evaluation of initiatives. Ensure that teacher allocation policies support this objective.

Supporting arguments

There are three arguments in support of this recommendation. First, lack of appropriate investment in K12 education can be costly in the long run; second, the cost of educational services varies across districts and schools; third, targeted initiatives such as improvement of teacher quality yield better outcomes.

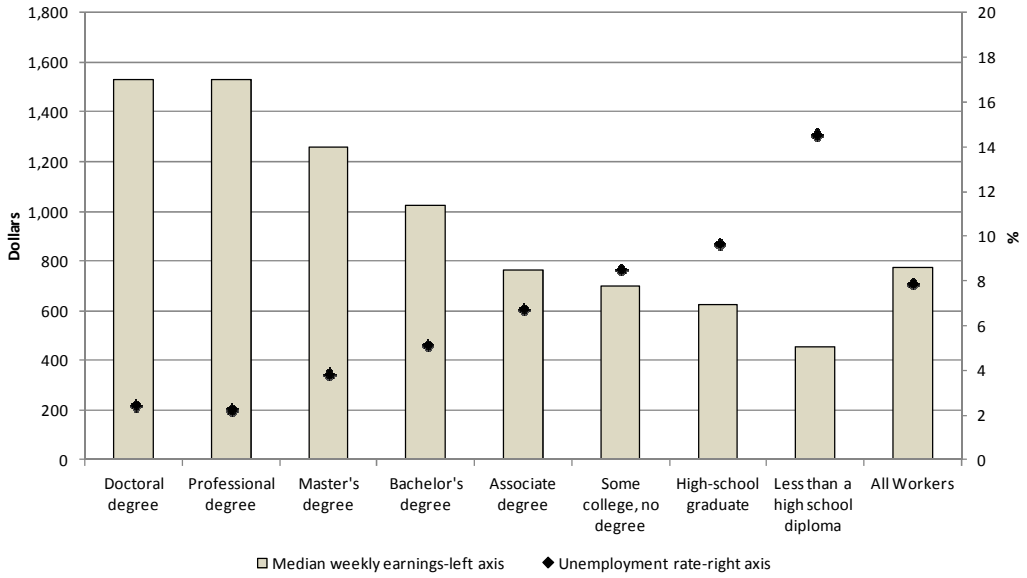
Lack of appropriate investment in K12 education can be costly in the long run

Thirty years ago the United States was a world leader in terms of the level of high school and tertiary attainment. Today that is no longer the case. Many OECD countries have similar or higher levels of attainment and school standards in terms of numeracy and literacy often surpass those of the United States. For South Carolina, the challenge is as great as for any part of the US. If South Carolina is to prosper as a high-skilled high wage economy, a steep improvement in educational outcomes will be essential. This will require wisely targeted educational investment.

Better education and stronger skills are associated with higher wages, better employment (Cheesman Day and Newburger, 2002; Quintini and Manfredi, 2009) and lifelong learning opportunities, as well as with non-economic outcomes such as good health, longevity, successful parenting. By the same token those who fail at school are more at risk of benefit dependency, delinquency and the associate costs to society (see Field, Kuczera and Pont, 2007). The demonstrated benefits of education and conversely the costs attached to a poorly educated society provide a compelling argument for sustained investment in education in South Carolina, including investment in the education of the most disadvantaged groups.

Figure 2.4 Education and labour market performance in the US

Persons aged 25 and over, 2008



Note: Earnings are for full-time wage and salary workers.

Source: Bureau of Labor Statistics, Current Population Survey, *http://www.bls.gov/emp/ep_chart_001.htm*

The cost of educational services varies across districts and schools

The relationship between resources and education outcomes is not mechanical. Research evidence (*e.g.* Corcoran and Evans, 2009) and comparative studies of OECD countries yield mixed evidence on the link between spending and student performance. In South Carolina higher state transfers to poor districts led to an increase in spending per pupil in poor districts (South Carolina Education Statistics, *www.sciway.net/statistics/education.html*)[6]. But South Carolina districts with unsatisfactory and below average performance are often those with the higher per pupil spending (Anderson 2009), possibly because some of the additional funding is designed to compensate for educational disadvantage. It is also possible that some funds are not allocated as efficiently as they could be.

The cost of education varies across districts and schools partly because of local geography and partly because the student mix affects the costs of providing good quality education. More rural school districts have higher transportation costs and more time spent by students in buses (Miley and Associates, 2003; Ulbrich and Slatzman, 2009). Small and sparsely populated districts have higher costs of education provision per pupil; the average difference in cost between the 20 smallest and the 20 largest districts is USD 277 per pupil (Ulbrich, 2010). Similar observations have been made in other US

6. Expenditure per pupil is expressed in operating expenditures. Operating expenditure excludes capital outlays and debt services, which may conceal part of resources available in better-off districts since school districts rely primarily on the property tax to fund debt service for capital expenditure (Ulbrich and Saltzman, 2009).

states (*e.g.* Rubenstein *et al*., 2007). The South Carolina funding model recognises that the cost of education provision depends on student needs and per pupil basic cost of education is weighted towards different student characteristics including hearing, speech and learning disabilities.

An additional dollar contributes to better outcomes only when it is efficiently spent. Efficient spending requires a thorough and careful evaluation of the impact of different practices and initiatives on student performance. Bearing this in mind South Carolina should consider supporting a stronger research and evaluation base so as to promote and invest in those initiatives with the biggest added value.

While investment in teacher quality can yield better outcomes, good teachers need to be placed in the right schools.

Among the many factors that affect student learning and are open to policy influence, the quality of teachers - both CATE teachers themselves, and the general teachers who work with students taking CATE courses - is the most important school factor (see for example Goldhaber, 2008; Hanushek *et al*., 2001b; Hanushek *et al*., 2005a). So one key way in which resources can improve outcomes is through investment in teachers. It is assumed that teacher quality distribution follows the same patterns in CATE and general subjects and for this reason no distinction will be made between general and CATE teachers in this section.

While teaching quality is particularly important in improving the performance of students with disadvantaged backgrounds, such students are often taught by the least effective teachers. This is because districts and schools where students perform poorly, and where students come from socio-economically disadvantaged homes, are less likely to attract more experienced and better qualified teachers (see for example Boyd *et al*., 2009). Teacher experience is a strong predictor of teacher effectiveness in the classroom and teaching quality increases sharply during the first three to five years of teacher careers before diminishing over time, with the initial gains from experience being larger in mathematics (Goldhaber, 2008). But research evidence shows that more experienced and better qualified teachers prefer better-performing schools with more resources. In South Carolina, in line with these findings, districts with many poor students (eligible for free lunches) are less likely to attract and retain teachers who are better qualified and with more extensive teaching experience.

Poor schools also experience more teacher turnover. Often they provide a first teaching position to novice teachers who cannot initially obtain a teaching position in a more popular school. But with time and increasing experience teachers can more easily seek employment in other schools. To prevent teachers from leaving schools have to provide the right incentives. One Texas study suggests that schools with many poor, Hispanic or Black students may need to pay 20% or even 50% more in salary than schools with white and Asian children to prevent teachers from leaving (Hanushek *et al*., 2001b). But the teacher pay scales in poor districts are often less attractive than in affluent districts. Sometimes the salary differences can be quite large; for example in South Carolina the maximum teacher salary in Lexington 5 is more than nine thousand dollars[7] above the maximum salary in Bamberg 1 (*www.sc.edu/career/Pdf/teachersalary.pdf).*

7. Not adjusted for living cost difference.

Some teacher allocation policies exacerbate the problem. Hanushek *et al*., (2005) argue that often the least experienced teachers are matched with the most educationally needy children because districts give higher priority to the preferences of experienced teachers. Similar trends can be observed in other countries. France created 'education priority zones' (*zones d'éducation prioritaire*) in areas of high poverty often overlapping with areas with high concentrations of migrants. Schools located in these zones received additional resources so as to improve learning conditions and practices, and eventually to increase student performance. As a result, class sizes were reduced and teacher salaries increased. But teacher allocation policy, according to which more experienced teachers have priority in the choice of school, remained in place. The increased salary was not sufficient to attract more experienced teachers to the priority zones, and the teachers working in these zones were on average younger and less experienced than teachers in other schools (Paul and Troncin, 2004).

Implementation

More transparency in within-district spending may improve resource allocation

Although inequalities between states and between districts have been decreasing in the US, some research studies suggest that resource allocation mechanisms *within* districts may sometimes entrench rather than alleviate inequities (Rubenstein *et al*, 2007; Miles and Roza, 2006). Typically school districts allocate resources to schools largely (and understandably) according to expenditure in previous years. That expenditure depends heavily on the cost of existing teachers. As argued earlier, more disadvantaged schools often attract less experienced and therefore cheaper teachers than more advantaged schools. In the Charleston school district, for example a teacher with a bachelors degree and no experience earns nearly USD 6 000 less than a teacher with no experience but with a Masters degree and over USD 9 000 less than a person with a Ph.D. degree and similar experience (*www.teacher-world.com/teacher-salary/south-carolina.html*).

The extent of within district inequality in South Carolina is unclear since little is known on funds allocation from districts to schools. Some information on school level funding, such as per pupil spending and teacher average salary, is available through report cards. Analysis of the report cards in a few districts (with more than three high schools) shows that usually within a district poor schools receive more money as measured by per pupil spending. However policy is highly variable, so that sometimes teachers in high poverty schools earn more than teachers in well-off schools, while elsewhere the opposite is true. One way of tackling this potential problem is to increase transparency in school-level expenditure. In South Carolina school districts are free to decide how best to allocate the available resources to schools[8]. But few have chosen to report publicly on how and how much they allocate to each school. Better information on spending patterns will allow apparent anomalies in resource allocation to be explored. When districts allocate money to schools, they might take account not only of historic expenditure patterns in different schools, but also some more objective measure of needs. Such an approach would put some pressure on districts to better reflect individual school needs in funding arrangements.

8. Some state and federal appropriations are earmarked and should be spent on specific purpose.

Stronger collaboration can potentially diminish the costs of some services and improve access to good quality CATE across the state

Collaboration includes arrangements in which a district (school) provides goods and services for itself and for other districts (schools). It also includes arrangements in which other entities, such as regional education centers offer services to schools and districts.

More than half of South Carolina's 85 school districts have only one high school. As argued above, the cost of education provision in small, sparsely populated areas is higher than in bigger districts with a high population density. Small and rural districts, often with high poverty rates, may also struggle to provide good quality CATE in a wide range of programs. They may not be able to get the most recent training equipment and find employers providing work experience to their students, among other things because of low business concentration in these areas.

Collaboration in CATE provision has two potential advantages. It diminishes the cost because of economies of scale, since some services are concentrated in one or few bodies instead of being provided by every school or district. Collaboration between districts may also improve access to good quality CATE in the state since CATE students could take advantage of resources available in other districts (see discussion of workplace training below). A study evaluating the shared services practices among school districts in New Jersey shows that school districts perceive cost saving as the main benefit of this arrangement. Some districts also indicated that shared services improve the quality of services, reduce workload and eliminate redundancy (Institute on Education Law and Policy Rutgers, 2007).

2.2 Better use of work experience

Challenge

Some students entering the labour market directly from high school may not be adequately prepared

A widely accepted objective of the US education system is to provide everybody with the opportunity of postsecondary education (Hoffman 2009). US high school education is therefore comprehensive and aims to make all young people 'college-ready'. The great strength of this approach is that high school students pursuing CATE programs have the option of moving up to postsecondary institutions[9]. The effect is that CATE in the US and South Carolina enjoys higher status than many vocational programs in those countries where such programs are clearly separated from more selective academic tracks[10].

9. In reality, in some schools students can be streamed within the comprehensive system depending on whether they are college oriented or not. It intends to increase the chances of students with good performance to get a place in highly demanded tertiary institutions.

10. Despite the dichotomy between vocational and academic pathways, more and more vocational students seek to continue their education at higher levels. To meet these demands some countries have been developing a tertiary vocational sector – usually shorter and more practically oriented programs.

While the comprehensive approach is an asset of the US and South Carolina system, it may also have some risks. Rooted as it is in a (commendable) ideal of 'college for all', it may not be designed for those who do not pursue postsecondary qualifications immediately after leaving school. South Carolina is aware of this challenge and the EEDA emphasises the role of high school CATE in preparing young people for careers.

The student population who would benefit from better job preparation includes a number who drop out from high school, and others who do not wish to continue in postsecondary education after high school completion. Sometimes such students have fewer opportunities of what we might call 'substantial work experience' while in high school. Substantial work experience has a sufficient duration, content and quality to allow the development of job relevant and occupation-specific skills that can be immediately applied on the labour market, and ideally lead to a qualification recognised on the labour market.

The graduation rate in the US is below the OECD average (OECD, 2009a, Table A1.2a and A2.1) and the South Carolina graduation rate is in turn below the US average, with more than 40% of students not completing their high school 'on time' (Laird, *et. al*., 2008; NCES, 2010). But some of these students are simply repeating a grade; some drop out during the course of studies and then acquire high school qualifications later on, mainly through the GED certificate[11], and finally some drop out without completing their studies later on. In comparison with other countries, in both the US and South Carolina there are relatively few young adults (25-34 year-olds) without a high school diploma, 13% in the US and 15% in South Carolina compared to 21% in the OECD countries on average (US Census Bureau, American Community Survey, Data Set: 2006-2008 American Community Survey 3-Year Estimates).

At postsecondary level, a pattern of dropout and return to education

In line with a pattern common in the US, many young adults in South Carolina drop in and out of education and work. Two thirds of those who graduate from high school enroll immediately in postsecondary institutions but many do not complete their studies, so a lower proportion of 25-34 year olds end up with a full tertiary qualification. In South Carolina 24% of 25-34 year-olds have a bachelors or graduate degree, 9% an associate degree and as many as 21% some college credits but no degree (US Census Bureau, American Community Survey, Data Set: 2006-2008 American Community Survey 3-Year Estimates).

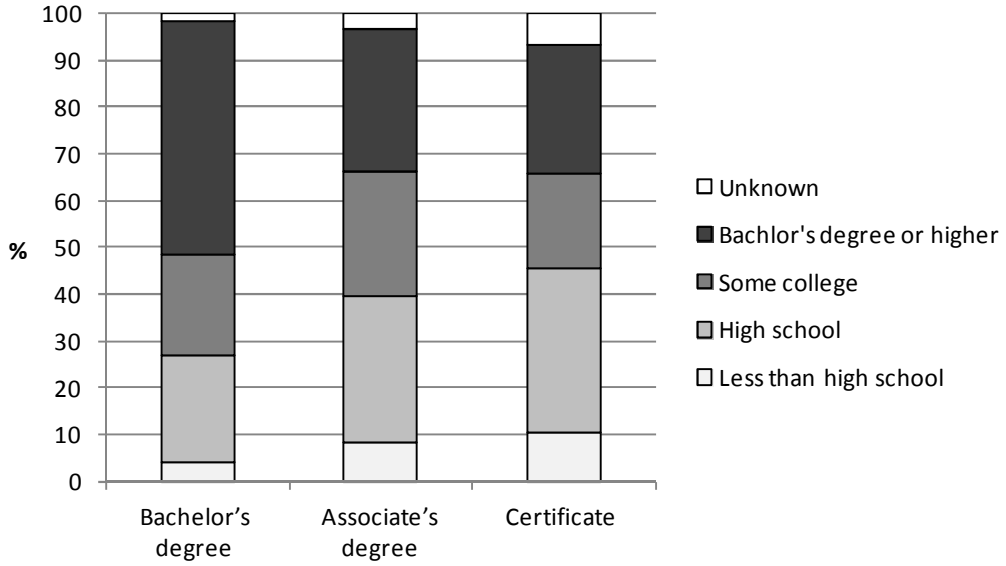
Broader US evidence fills out the picture. In the US 40% of young adults (25-34) are educated to postsecondary level, more than in many other OECD countries (OECD, 2009a). Of those who seek a postsecondary degree, students with lower socio-economic status are more likely to choose a shorter postsecondary degree such as an associate or certificate degree (see Figure 2.5). They also tend to be older (28) and more often financially independent than students at four-year institutions (OECD, 2009b). These characteristics suggest that students opting for these shorter postsecondary programs are often those who entered the labour market after high school completion and returned to education later on. Although these students may eventually gain some postsecondary credits, issues also arise about how they have fared in the labour market after high school,

11. According to Almeida *et al*. (2006), 59% of high school drop outs complete high school later on.

in particular whether they avoided unemployment and obtained the kind of job that developed their skills and aspirations.

Figure 2.5 Participation of students in postsecondary programs by parental education

2004, US



Source: Forrest Cataldi, E. (2009), "Career and Technical Education in the US. An Overview of Secondary, Post-secondary and Adult Career and Technical Education", prepared for the OECD Review of Vocational Education and Training, 'Learning for Jobs'.

Despite active employer engagement, little use of substantial work experience

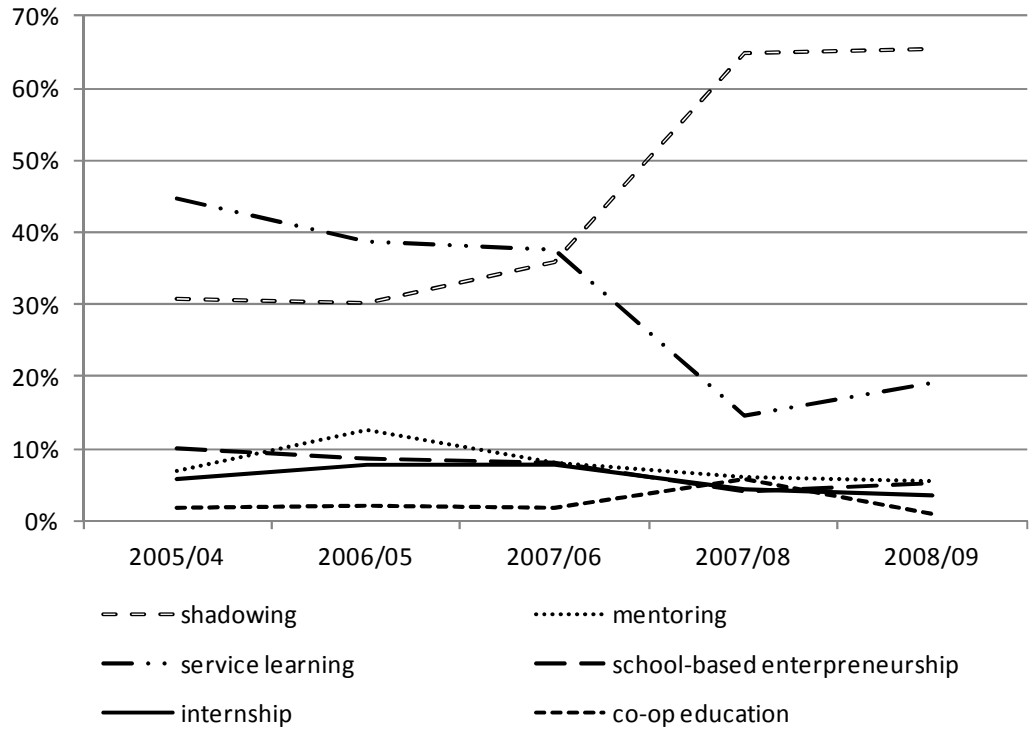
Interviews with employers and other stakeholders convinced the visiting OECD team that employer engagement with CATE is stronger in South Carolina than in most parts of the US, reflecting an active approach in the State government to CATE in collaboration with employers, and perhaps also the circumstances of a relatively small state, where personal connections work to facilitate partnerships between employers and the CATE system. Employer engagement is encouraged through incentives at both federal and state level. CATE programs that receive federal and state funds must be supported by advisory committees including business and industry representatives. The state encourages schools to seek national or industry certification for CATE programs and to provide work experience to students (Rex *et al*, 2008). The Education and Economic Development Act further underpins connections between the school system and the labour market by facilitating local business-education partnerships and out-of-classroom experience opportunities for students.

Different forms of work experience are offered to high school students, ranging from work shadowing (the most common option) sometimes lasting as little as a couple of hours to internships of 3-6 months (Figure 2.6). Students over 16 can seek a youth apprenticeship combining school education with on-the-job training (up to 20 hours per week) but such apprenticeship opportunities are currently very limited, in 2008/09 only

110 students (out of more than 47 000 gaining any type of work experience) were in youth apprenticeships. We understand that plans are in hand to expand youth apprenticeships and we would support this. Overall, in South Carolina, in 2008/09 only 2% of all high school students participated in more substantial forms of work experience (cooperative education, internship and youth apprenticeship) compared with 14% high school graduates entering the labour market directly after completion and 13% classified as taking part in other than education, employment and armed forces activities. This broad category may include people who for various reasons are outside the labour market and education, and who presumably would benefit from better job preparation upon high school completion.

The implication is that many of the young people who enter the labour market early on in their life have had relatively limited experience of the real world of work. This means fewer contacts with employers, a weaker understanding of required work disciplines and relevant workplace skills like teamwork and communication with customers. This will certainly hinder their chances of obtaining work, particularly reasonable quality work, and reduce their prospects for career development.

Figure 2.6 South Carolina students gaining work experiences through different pathways, by year



Source: Provided by the South Carolina Department of Education.

Employers dissatisfaction with outcomes of the system

Employer surveys reinforce the evidence of a lack of relevant workplace experience among young entrants to the labour market. Such surveys suggest that, when looking at

their recruits, employers are particularly unhappy about the level of soft skills which would most naturally be developed by substantial workplace experience. In South Carolina employers estimate that 38% of high school graduates are poorly or very poorly prepared for work compared with 12% of technical college and 4% of Baccalaureate graduates. More than 20% of employers indicated poor work ethics and lack of maturity as the skills most lacking in high school graduates. Employers quoted lack of qualifications, inappropriate attitudes, poor work record and lack of experience as major reasons of rejecting job applicants. They identified soft skills such as listening, observation, teamwork and locating information as the skills that will be in high demand in the future. To improve future work force skills around 30% of employers would be ready to provide external learning opportunities to students such as job shadowing, internship, and registered apprenticeships (South Carolina Chamber of Commerce, 2006, 2009).

Broader US evidence is consistent. An employer survey evaluating the skills of high school and two-year college graduates in the US shows that graduates in both groups lack key labour market skills (indicated as important by more than 50% of surveyed employers), but the deficiencies are more pronounced among high school graduates. Applied skills such as written communication, professionalism and work ethics, critical thinking and problem solving, and oral communication were identified as deficient in high school graduates. While the more academic of these skills can certainly be developed in high school, the development of the more practical skills might clearly benefit from exposure to workplaces.

Several employers indicated that they would like to take more responsibility for the work preparation of new employees. One way of doing so would be through "meaningful internships" that provide students with real work experience and not "just a glimpse of the corporate environment" (The Conference Board, 2006). At the same time three quarters of employers place the responsibility for providing basic knowledge and applied skills of new entrants to the labour market on the school, 50% say that graduates are themselves responsible for their work readiness and only 20% think that employers should take the responsibility for employees' skills. These comments are similar in tone to those that the OECD team heard from employers in South Carolina.

Policy recommendation

Provide high school students who wish to enter the job market directly with more substantial work experience while in school. Make targeted efforts to ensure that students from disadvantaged backgrounds share these opportunities. Take action to increase the level of co-operation across school district boundaries in the provision of workplace learning opportunities.

Supporting arguments

Five arguments are advanced in support of this recommendation. First, workplace learning is a valuable element of education and training. Second, a number of structural factors mean that the US, and particularly South Carolina, for understandable reasons, does not pursue workplace training extensively at high school level on the scale of some European countries. Third, while this makes sense in aggregate, it may leave the position of some more disadvantaged students vulnerable. Fourth, disadvantaged students in South

Carolina may not receive sufficient workplace experience. Fifth, substantial work experience could improve outcomes for disadvantaged young people.

Workplace learning is a valuable part of education and training

There is abundant international evidence on the benefits of workplace training to students and employers (OECD, 2010a). The benefits to students include:

- **Strong learning environment**. Soft skills, such as teamwork and communication are more easily learned in an authentic work environment, while simulating these in workshops is more difficult (Aarkrog, 2005). Workplaces can also help students acquire hard, technical skills. In programs with substantial on-the-job elements (*e.g.* apprenticeships), workplace training plays a key role in developing both occupation- and firm-specific skills. This is more difficult to achieve if the workplace element is shorter. In that case, workplace training might be an opportunity for students to apply what they learnt at school and (depending on the duration and quality of the on-the-job element) they may acquire new specific skills.
- **School-to-work transition**. Workplace training allows employers to learn about a potential recruit and vice versa. This can only be achieved if the training is sufficiently long and trainees carry out tasks that help them acquire the competences needed in their occupation.
- **Career guidance** and **motivation**. Students can learn about the day-to-day reality of an occupation (*e.g.* the type of tasks involved and the working conditions), as well as learning about a particular employer. Short periods of work experience (*e.g. Schnupperlehre* in Switzerland, job shadowing) typically serve this purpose. Work-based learning can also increase student motivation and engagement with their program, as it allows students to see how what they learn at school can be used in real life situations.

In addition, workplace training can benefit employers:

- **Recruitment**. Employers can learn about the performance of trainees and recruit the best of them, as well as equipping them with the skills needed by the firm. The prospect of recruiting future employees is a major motive for employers to offer workplace training. This benefit can only be obtained if the period of training is sufficiently long and the tasks performed allow the employers to observe the performance of potential recruits. This benefit also depends on labour market characteristics (discussed below), the costs of hiring external skilled workers, as well as the share of trainees/apprentices who stay with the training firm (Wolter and Schweri, 2002).
- **Productive contribution**: Trainees who undertake useful work generate a productive benefit for the employer. The benefit to employers depends on a variety of factors, including the tasks performed (*e.g.* productive vs. unproductive, skilled vs. unskilled tasks), or the wage of skilled and unskilled workers (Wolter and Schweri, 2002). This benefit tends to be important in the case of apprenticeships (see Mühlemann *et al.*, 2007 for evidence from Germany and Switzerland). Such a benefit is also possible in more substantial internships, but more difficult to obtain in very short work placements (unless trainees perform only unskilled tasks, but that would be a poor learning experience). Quality

standards are essential to ensure that trainees receive high quality training, while being productive in the company.

Finally, workplace training can benefit the CATE system as a whole. Training in a company can be cost-effective, as companies already have up-to-date equipment, together with the personnel able to handle these – many schools cannot afford this. One Danish study (Westergaard and Rasmussen, 1999) compared the public cost of apprenticeship and the cost of fully school-based VET programs. It found that school-based VET is more expensive than VET with workplace training provided by employers, even taking into account the subsidies to training companies. Some shift of the practical training from schools to companies might help schools with the challenge of providing up-to-date equipment, particularly in areas in which technologies are changing rapidly and equipment is expensive (*e.g.* CNC machines). Another system-wide benefit of workplace training is that it sends a signal about labour market needs – employers will be particularly keen to offer workplace training in contexts where they have labour shortages. Such signals from employers can inform schools and colleges in the definition of the mix of programs on offer.

Structural factors mean that South Carolina does not pursue workplace training at high school as extensively as some European countries.

Two factors make it more difficult to develop workplace training in South Carolina than in many OECD countries. First the United States, and especially South Carolina, has a relatively deregulated labour market and flexible wages, facilitating the transition of young people to the labour market and eventually development of some work relevant skills directly on the job. Second, there is a high level of teenage employment, allowing many workplace skills and disciplines to be developed informally.

Deregulated labour market and flexible wages

Countries have different approaches to the preparation of young people for the labour market ranging from the dual system, with apprenticeship training built into formal schooling, to the US model, where many young people gain work experience informally outside the school system in part-time jobs and through job rotation (see for example Kane and Harhoff, 1997). Labour market regulation and industry structure are both very important factors in determining which model will be more effective in a given national context. High school vocational education with extensive workplace training may assume greater importance in systems where wages are compressed, and strict labour market protection privileges those already in regular employment. In such a context young people may face difficulties in transferring from school to work unless there are formal pathways leading to employment, such as apprenticeship training.

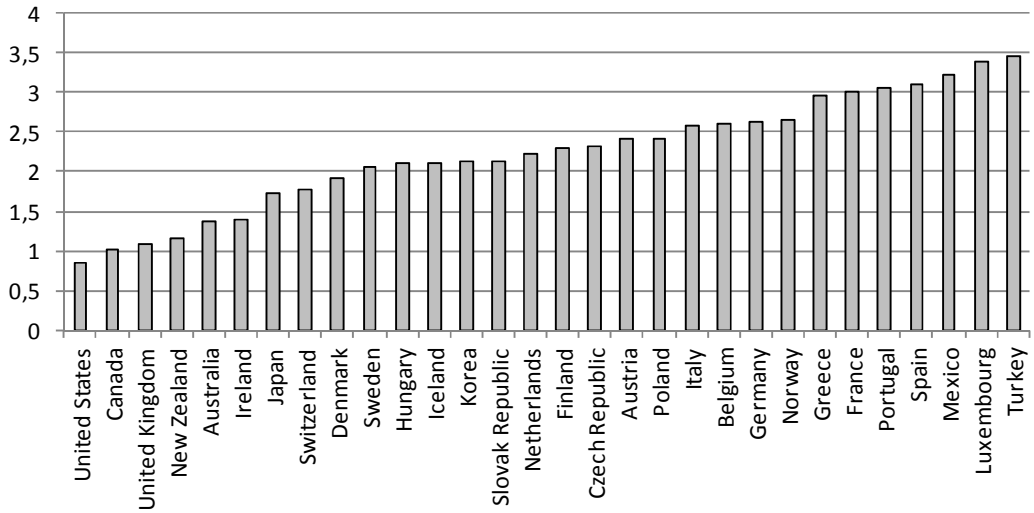
Quintini and Manfredi (2009) discuss different transition patterns from school to work across OECD countries. They note that in countries with regulated labour markets and strong apprenticeship systems, such as Germany, about 80% of school leavers succeed in integrating into the labour market[12]. Such countries contrast with countries with regulated labour markets but without strong work-based training integrated into the formal school system, such as Italy and Spain where more than a third of young people end up in unemployment or inactivity. The German transition rate is impressive,

12. 90% were in employment over five year period.

especially the transition rate of graduates from vocational high school who have the same employment rate as tertiary graduates at the beginning of their career (OECD, 2010b). However, their employment perspectives worsen over time if compared with holders of tertiary degrees. Countries with regulated labour markets but without strong vocational education encourage employers to hire young and inexperienced people by lowering employment costs for this population. Consequently, many young people enter the labour market with temporary contracts. In some cases this has led to the development of a dual labour market, with a sector of permanent and well-protected jobs divided from a secondary sector of temporary and less secure employment (see for example, Maurin, 2009 on France).

The US has a relatively deregulated labour market, with weak employment protection provision (Figure 2.7), so that US employers are less constrained in firing and hiring decisions than their counterparts in other OECD countries. This will be particularly true in the case of South Carolina where trade union membership is very low. Also, the cost of employing young people is not a barrier to employment, as low pay is a key feature of youth entry jobs. Employers might be able to run, in effect, an informal training system, by recruiting young people at low wages, training them informally, and retaining the most productive as long-term employees, thus displacing the formal apprenticeship system that might be found in other countries.

Figure 2.7 Overall strictness of employment protection



Note: Indicators of employment protection measure the procedures and costs involved in dismissing individuals or groups of workers and the procedures involved in hiring workers on fixed-term or temporary work agency contracts.

Source: OECD labour data, *http://stats.oecd.org/Index.aspx.*

Teenage employment

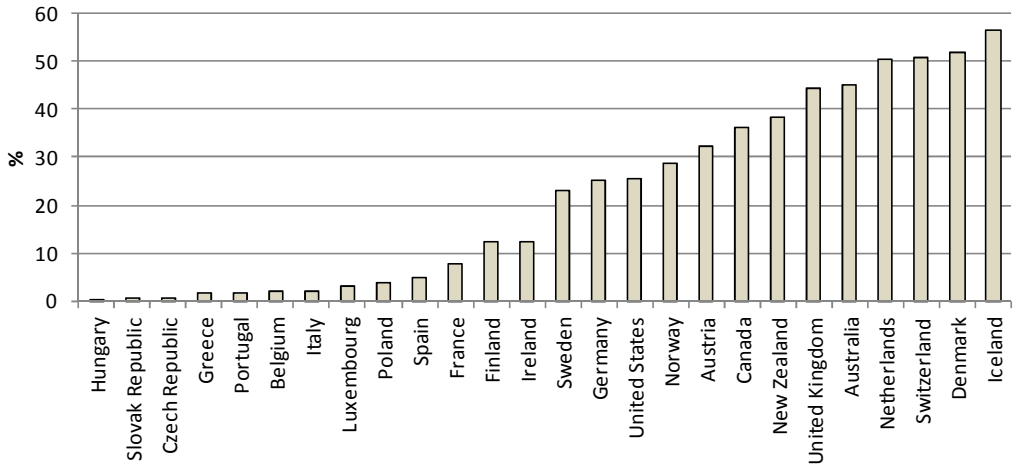
Many US teenagers hold part-time jobs while studying. Figure 2.8 shows the employment rate of teenage students in different countries, adding up both part-time jobs and structured workplace training (typically paid) like apprenticeships. In the US, one in

four teenagers works during their education – around the average for OECD countries. Countries with substantial apprenticeship systems (Denmark, Switzerland, Netherlands, Austria, Norway) where apprentices work during in-company training that is formally scheduled into their study program sometimes display particularly high rates of teenage employment. The large number of working teens in countries such as the UK, Australia, Canada can be explained both by teens working during summer holidays and apprenticeship and traineeship arrangements.

To some extent therefore, part-time and short-term jobs enable US teenagers to learn about the work environment and develop some of the soft skills required and valued by employers, such as punctuality and team working. But although such experience is undoubtedly useful, it may be too little, or too unstructured to develop the kind of skills that employers want – given the kind of complaints made by employers about the qualities of potential recruits. The data do not reveal the extent to which early entrants to the labour market have had the kind of part-time or summer jobs that would be most effective in developing their workplace skills, but young people in the most economically depressed localities may find it difficult to find part-time and summer jobs. The number of summer jobs is shrinking. The July youth participation rate in the labour force has been at its lowest level since 1955 (Bureau of Labor Statistics, 2009).

Figure 2.8 15-19 year-olds studying and working

2006



Source: OECD (2009b), *Jobs for Youth, United States*, OECD, Paris.

While in aggregate this arrangement makes sense for South Carolina, some disadvantaged young people may be vulnerable

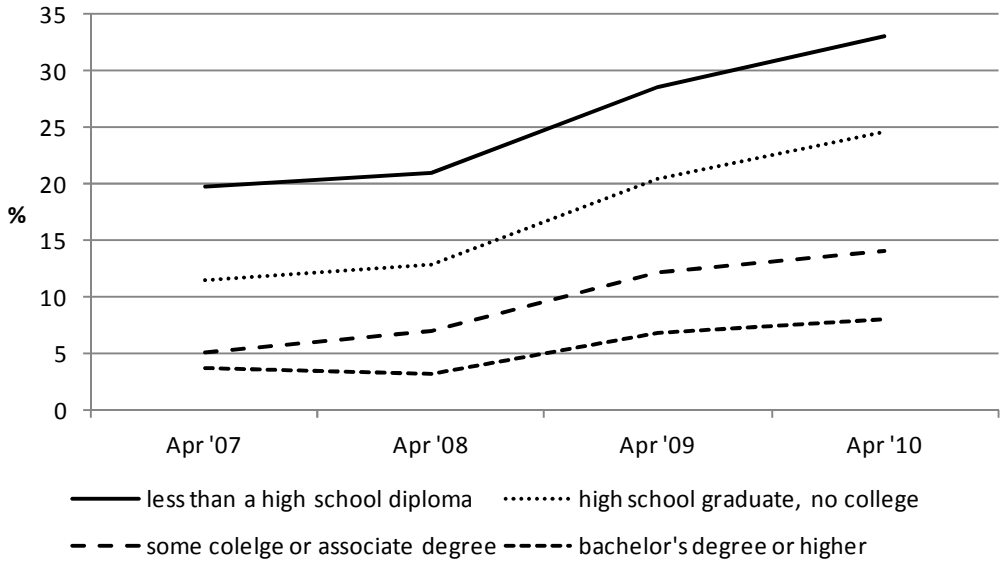
As explained, structural factors mean that it is not surprising that work-based training as part of K12 education is not well developed in South Carolina. To a great extent this is a sensible adaptation, the US and South Carolina labour markets and education systems are distinctive from Continental European systems and a strong apprenticeship system catering to many high school students would not be the right path to follow for South Carolina. But, while the structure in aggregate makes sense when placed in international

context, some students are left out by the current arrangement and find transition to the labour market difficult. Thus:

- Young workers have been hard hit by the recession (see Figure 2.9). In the US as a whole, although 16-24 year-olds represent only 13% of the labour force, they contribute 25% of the unemployed (Bureau of Labor Statistics, 2009, 2010). In April 2010 the unemployment rate for 16-24 year-olds hit a record with 19.6 % of young people looking for a job (Congress Joint Economic Committee, 2010).

Figure 2.9 Unemployment rate of 16-24 year-olds by educational attainment

(Not seasonally adjusted)



Source: Congress Joint Economic Committee (2010), *Understanding the Economy: Unemployment among Young Workers*.

- Labour market prospects are bleak for young people with poor qualifications. In 2008 at the age of 20, 42% of high school dropouts and 20% of high school graduates (not enrolled in college) were neither employed nor in education and training.
- On-the-job training for young employees is another way of getting job relevant skills. However, US employees receive little on-the-job training compared with European countries. In countries such as Austria, France, Denmark, Switzerland, Belgium, Luxembourg and Hungary 18-22 year-olds are more likely to receive training of 30 hours or more than their counterparts in the US (OECD, 2009b).Young people with low levels of education attainment are particularly unlikely to receive training. According to the NLSY 1997 among 20 year-old employees without high school qualifications only 2.5% are enrolled in training comparing to 4.6% of high school graduates (Bureau of Labor Statistics, 2008).

Students with disadvantaged backgrounds are less likely to gain relevant work experience during high school studies

Students typically gain work experience within the borders of their school districts. But such opportunities are more restricted in poor rural districts which have less business. Poor and disadvantaged students from these districts would often benefit most from labour market preparation since they are the most likely to enter the labour market early on and are less likely to find work through their family and social networks.

Contrary to some European countries, in the US there is no single official way into most blue collar professions. Some skills and qualifications are developed in high school or technical college and some by on-the-job learning. Social networks including family and friends play an important role in finding a job and gaining precious work experience. These pathways may exclude young people from disadvantaged backgrounds without social networks of educated and influential people (Levitan, 2008).

US students with low socio-economic backgrounds and of Black/Afro-American or Hispanic origin are less likely to gain work experience through student jobs. In 2007 less than 20% of Black teens from poor homes worked compared to nearly half of white teens from better off families (Sum *et al*., 2008).

Substantial work experience could improve outcomes for disadvantaged young people

Targeted initiatives to provide substantial work experience can work. In the nineties the federal 'School-to Work Opportunities' program aimed to improve school to career pathways through stronger connections with employers and work-based activities, among other things. After the initial five years the initiative was not re-authorised. One study uses NLSY97 data to explore the effect of job shadowing, mentoring, cooperative education, school enterprise, tech prep, and internship/apprenticeships provided within the framework of this initiative on college attendance and employment (Neumark and Rothstein, 2003). It shows that participation in a school enterprise has a positive effect on college attendance and that participation in cooperative education and internship/apprenticeship boosted post high school employment, especially among African-Americans and those with less educated parents. Moreover these programs had positive effects on college attendance of students with lower scores (on ASVAB). Conversely, job shadowing had no impact on getting a job overall (Neumark and Rothstein, 2003).

In South Carolina the constraints of school district boundaries on work experience availability harm students with disadvantaged backgrounds since they tend to live in poor school districts with low levels of employment. Extending the geographical range of work experience would potentially benefit these students by increasing their choice and improving access to training with employers. It would help to establish new social connections and reap other benefits related to work experience. Recently established regional education centers can play an active role in this process by facilitating connections between schools and employers. Transportation can be a serious obstacle. In South Carolina the poorer rural population are particularly reliant on public transport (U.S. Census Bureau, South Carolina, Means of Transportation). Potential solutions include subsidies to cover travel costs, provision of work experience in a block during summer holidays and use of boarding facilities of schools and colleges. Students in work experience of longer duration could receive an allowance from employers.

Implementation

This recommendation encourages fuller use of some existing pathways with substantial work experience. Internships, cooperative education, youth apprenticeships and summer jobs can all be used to this end depending on student needs, their career plans and preferences. The South Carolina Workforce Investment Act for 2009 – 2010 sets the provision of work experience opportunities for young people as its priority (South Carolina Department of Commerce, 2009a).

Table 2.1 shows the extent to which countries use work-based learning in their vocational programs. In some countries, such as Denmark, Norway and Switzerland most vocational students receive extensive training in a real work environment. In some other countries such as Austria, Germany, Finland, and France different models are available. Among countries presented in the table there are some with a comprehensive system and without early tracking such as Finland, Norway and Australia, as well as countries with well-established tracking at early ages and separated pathways for vocational and academic students such as Austria, Germany and Switzerland. This shows that work experience can be of use in a wide range of education and training systems.

Table 2.1 Time spent by vocational students in work experience

	Students in work placement with employers, by the work experience duration			
	75% or more of program length in work experience	Between 50% and 75% of program length in work experience	Between 25% and 50% of program length in work experience	Less than 25% of program length in work experience
Australia[1]	■■	-	-	-
Austria	■■	-	-	■■■
Czech Republic	-	-	-	■■■■
Denmark	-	■■■■	-	-
Finland	■	-	-	■■■■
France	■	-	-	■■■
Germany[2]	-	■■■	-	■
Netherlands	-	■■	■■■	-
Norway[2]	-	■■■■	-	-
Sweden[2]	-	-	-	■■■
Switzerland[1]	■	■■■■	-	-
United States	-	-	-	■■■■

Note: Estimated percentage of vocational students: - 0%; ■ 1-25%; ■■ 26-50%; ■■■ 51-75%; ■■■■ 76-100%.

1. In Australia and Switzerland the amount of workplace training depends on the institution and program.

2. Some data are missing, not all programs are represented.

Source: Kuczera, M. (forthcoming), *The OECD International Survey of VET Systems*, OECD, Paris.

2.3 Basic skills in CATE

Alongside practical skills, all CATE students need to acquire a good range of basic skills. Strong basic skills - particularly numeracy and literacy - are important now and their importance will grow even more in the future due to changing demand for skills. Such skills support effective citizenship, are directly applicable in workplaces, and they underpin the further learning that is so often essential to meet the needs of the modern job market. The South Carolina Employment Security Commission reports that 70% of the

fastest growing jobs in the US require training beyond high school (Faulds, 2009). Although South Carolina has taken a commendably energetic approach to the development of basic skills in high school, there are still too many young people graduating from high school without a good command of basic skills.

Challenge

Relatively weak performance of US and South Carolina high school students by international standards

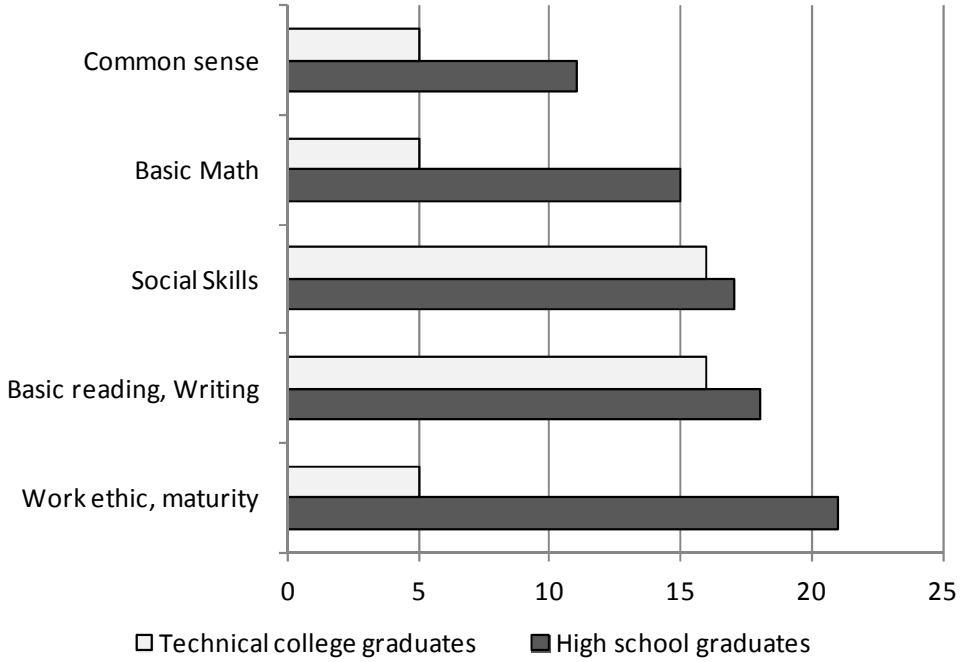
15 year-old students in the US performed at the OECD average in reading (2003) and below the OECD average in science and mathematics on the PISA assessment (2006). In mathematics and science US students scored below their counterparts in Chinese Taipei, Hungary, Poland, Croatia and Slovenia (OECD, 2007). For a relatively poor state, South Carolina results are reasonable by US standards. According to the NAEP (National Assessment of Educational Progress) South Carolina students in the 8th grade in public schools score around the national average in mathematics, reading and science, but below the national average in writing (reference year respectively: 2009, 2009, 2005, 2007). The performance of students has improved in most subjects since 1990s, except in reading where no difference was observed. However, the performance gap between black and white students, as well as those eligible and not eligible for free and reduced lunches remained at around the average US level (*http://nces.ed.gov/nationsreportcard/statecomparisons/*). The results on the 10th grade state test (HSAP) indicate that between 2005 and 2009 overall performance (percentage of students scoring at level 2 and below) decreased in English, improved in mathematics, and the attainment gap slightly narrowed between low and high income students *(http://ed.sc.gov/topics/assessment/scores/*). Overall therefore, while basic skills levels in South Carolina are not dramatically different from the US average, they lag behind a number of international competitors.

Insufficient basic skills from the point of view of employers

South Carolina employers view many high school and technical college graduates as lacking basic skills according to employer surveys (see Figure 2.10). One implication is that it will be necessary to pursue further and sustained efforts to upgrade the basic as well as practical skills of students pursuing more vocational programs, including CATE modules.

Figure 2.10 What skills are high school and technical college graduates lacking ?

2006, Percentage of employers reporting gaps in high school and technical colleges preparedness for work



Source: South Carolina Chamber of Commerce (2006), *Skills that Work IV, Charting the Gap Between School and Work.*
http://southcarolinasccoc.weblinkconnect.com/CWT/EXTERNAL/WCPAGES/Workforce/Skills_at_Work.aspx

Basic skills of CATE students are slightly weaker than those of non-CATE students

In the US as a whole those who take more CATE units perform less well on basic skills. While participation in some CATE has no correlation with performance, participation in more substantive CATE is correlated with weaker results. The US data show that students in grade 12 who gained some CATE credits perform around the national average (mathematics, 2005 *http://nces.ed.gov/nationsreportcard/hstsnde/*. However, the performance decreases slightly with the number of CATE credits, more credits in CATE subjects is associated with lower student performance and fewer credits in science and mathematics (Levesque *et al*., 2008). For example students who earned more than 4 credits in specific labour market preparation performed 9 points below the average and 21 points below those who earned 1 or less credits in specific labour market preparation. A similar performance distribution in CATE student population was found in Texas, students participating in a coherent sequence of CATE courses scored slightly below non-CATE students (Kis, 2010b). Levesque *et al*., (2008) argue that there is a trade-off between the number of occupational credits and the number of academic credits that students earn in high school. These performance differences could be attributable to selection effects, with less academic students pursuing more CATE courses, or to a direct effect of more CATE and therefore less time to concentrate on basic skills. Some combination of the two types of effect is likely.

…but contrary to many OECD countries the gap in achievement between CATE students and non-CATE students is small

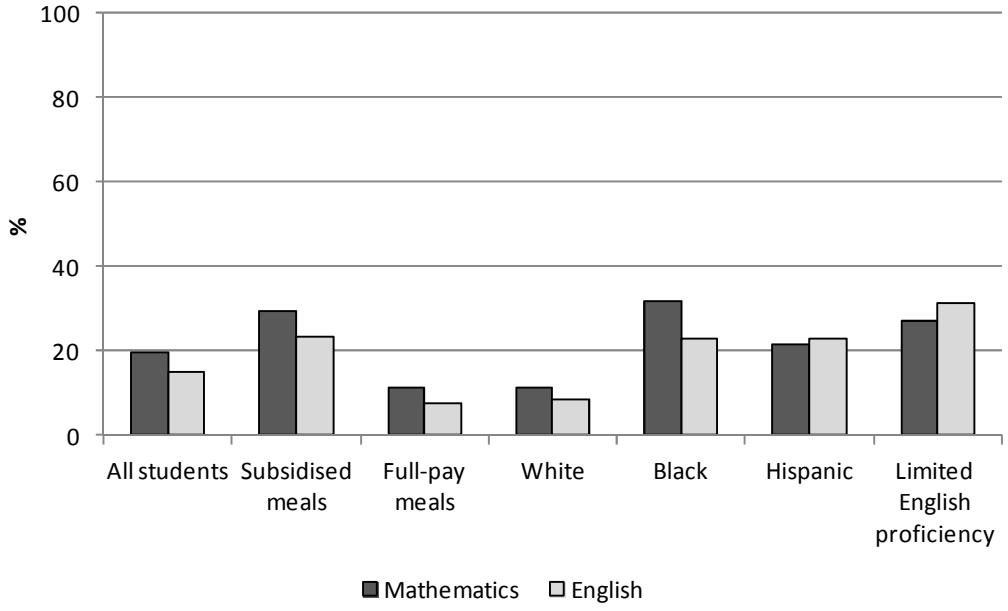
The relative weakness in basic skills of more vocationally-oriented South Carolina (CATE) students is modest in comparison with other OECD countries. In countries such as Belgium, Austria and France, vocational students perform more than 100 points below students in general tracks on the PISA scale (difference expressed as a percentage of standard deviation), while in the US students with the largest number of CATE credits have results 60 points below the results of non-CATE students (difference as a percentage of standard deviation) *http://nces.ed.gov/nationsreportcard/hstsnde/*. Similarly, in many OECD countries students making up vocational tracks are more likely to come from migrant families and families with low socio-economic status while in South Carolina, the economic status of the school population is also unrelated to student participation in CATE (based on report card analysis).

Other factors such as student socio-economic background have a strong impact on student outcomes

In South Carolina, factors such as student socio-economic status and ethnicity are more strongly correlated with student underachievement (see Figure 2.11). Better results for all students are desirable but the biggest shortfalls are in the performance of students 'at risk'; so boosting their performance would result in particularly significant overall performance gains. This is also true for the US in general since US student academic performance depends to a greater extent on socio-economic background than in many other countries (OECD 2007).

Figure 2.11 Students in 10th grade not meeting the standards, South Carolina

2009

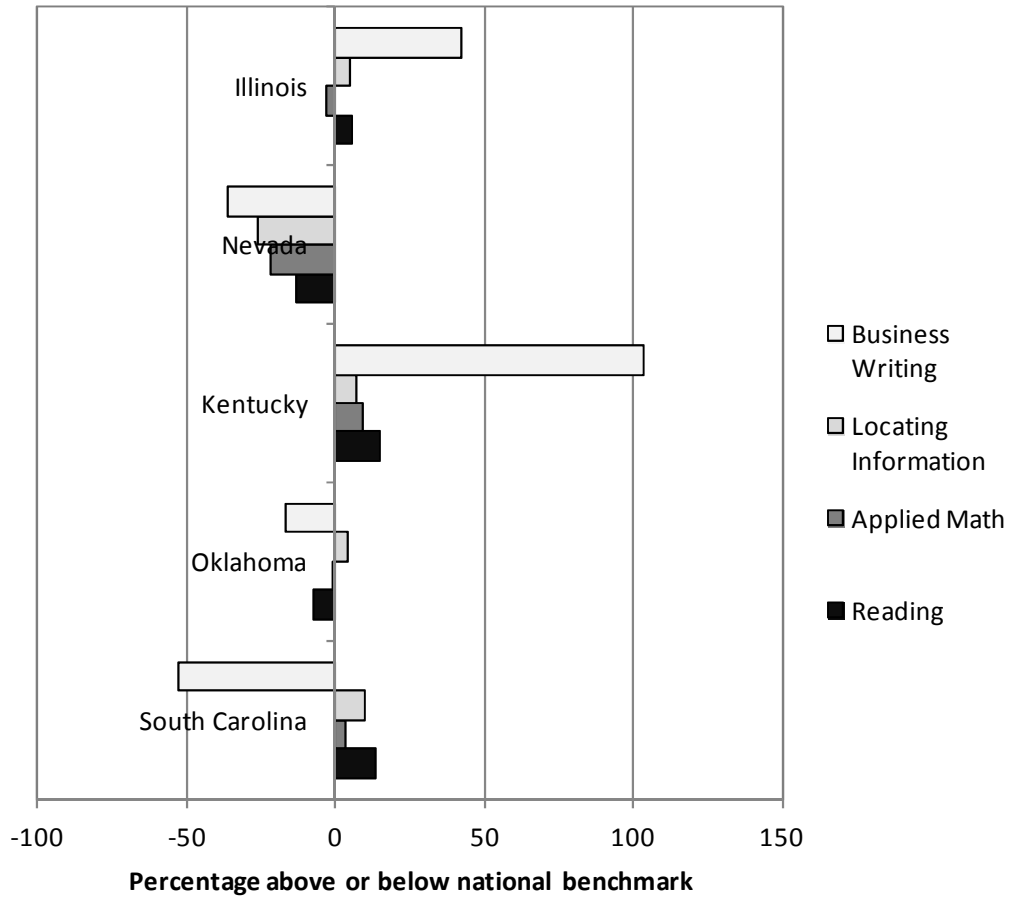


Source: South Carolina State Department of Education, High School Assessment Program *http://ed.sc.gov/agency/Accountability/Assessment/old/assessment/programs/hsap/*, accessed 2009.

Strong technical college system but with some high school graduates poorly prepared for postsecondary studies

South Carolina has a strong system of postsecondary education and postsecondary attainment has been rising. The likelihood of high school graduates enrolling in college at the typical age - within four years from starting high school, has increased by 11 percentage points since the early nineties (National Center for Public Policy and Higher Education, 2008b). Relative to other US states technical college students in South Carolina have relatively strong skills in reading, location information and applied mathematics, but they perform poorly on business writing as measured with WorkKeys[13] (Figure 2.12).

Figure 2.12 Applied skills of technical college students



Source: Miller M.A. and A.T. Ewell (2005), *Measuring Up on College-Level-Learning*, The National Center for Public Policy and Higher Education.

13. The WorkKeys assessment system is a US wide comprehensive system for measuring, communicating and improving the common skills required for success in the workplace *www.keytrain.com/wrk_over.asp*.

Postsecondary education in South Carolina still faces many challenges. Many of those[14] enrolling in college lack the basic skills necessary to follow and successfully complete the program. Colleges are required to conduct placement tests at or near entry to colleges (Commission on Higher Education, *www.che.sc.gov/AcademicAffairs/Adm/a_7.htm*) and as a result approximately one third of college students reported taking at least one remedial course during college with most remediation taking place in two year-institutions (Educational Policy Improvement Center, 2008).

The dropout rate from technical colleges is high, with less than half of first year technical college students in their two year programs returning for their second year (2008) (National Center for Public Policy and Higher Education, 2008a, 2008b). The low completion rate among students who require remediation suggests that weak basic skills is one cause of dropout. In South Carolina, 58% of students who do not require remedial courses earn baccalaureate degree within eight years, compared to 17% of those who need remediation. Educational Policy Improvement Center (2008) observes that with improvement in college readiness in South Carolina students could increase postsecondary enrolment and improve retention.

Students who underperform in high school also do less well at postsecondary level. African-Americans, the largest minority in postsecondary education, tend to have weaker than average SAT results (Scholastic Assessment Test) (SC Commission on Higher Education, 2009). Clearly, as Miller and Ewell (2005) point out the achievement gap between black and white students remains a major policy challenge for South Carolina.

Recommendation

Sustain the effort to improve literacy and numeracy and preparedness for college in high school CATE students, in particular among disadvantaged students. Strengthen co-operation between academic teachers and CATE teachers to this end.

Supporting arguments

Four arguments support this recommendation. First, the demand for strong basic skills on the labour market is growing. Second, high standards in basic skills are strongly encouraged in all CATE students. Third, teacher co-operation is required to take advantage of the innovations introduced in South Carolina CATE. Fourth, early interventions to support basic skills are more effective than remedial education at postsecondary level.

Growing demand for strong basic skills on the labour market

Even the simplest jobs now make increasingly intensive demands on literacy and numeracy. Murnane *et al*., (1995) show that the value of basic and soft skills has been rising over time as measured by their impact on wages. Similarly, Autor *et al*., (2003) highlight the growing importance of skills such as problem solving (*i.e.* the ability to solve problems that cannot be solved by simply applying rules) and complex communication (*i.e*. ability not only to extract information, but also to communicate a particular interpretation of it) in an increasing number of jobs, including the blue-collar

14. Adults and recent high school graduates.

jobs often targeted by vocational education. More generally, further learning – both in high school CATE, technical college and in lifelong learning – is difficult without strong basic skills. Labour markets change rapidly and often unpredictably in response to technological and economic developments. As virtually all workers will need to acquire new skills during their career, literacy and numeracy are particularly valuable in the long run (Smits, 2007; Ghost, 2002). In low-technology industries and at lower skill levels generic competences may be less valued by employers, but such workers need to be able to switch jobs, since they are precisely the ones at risk of job loss due to diminishing job opportunities (Smits, 2007). Consequently, while equipping young people with specific occupational skills is important to facilitate smooth transition to the labour market, strong basic skills are beneficial in the long term.

High standards in basic skills are strongly encouraged in all CATE students

To meet the rising demand for strong basic skills South Carolina aims to equip all high school students including CATE students with relevant skills and competencies. In the US the new terminology of "career and technical education" (replacing vocational education and training) reflects a change of approach, moving away from one in which occupation-specific training gave limited emphasis to basic skills towards a broader preparation for careers in a modern labour market, often including further education at postsecondary level and necessarily including strong basic skills. The importance of basic skills is confirmed and reinforced by the South Carolina EEDA. Its objective is to set high standards for all students so as to prepare them for postsecondary education and satisfying professions. According to national evaluations South Carolina sets some of the highest standards in the US, in terms of curriculum standards and the rigor of its exit exams and assessments that apply to all students (EPERC, 2010; US Chamber of Commerce, 2007).

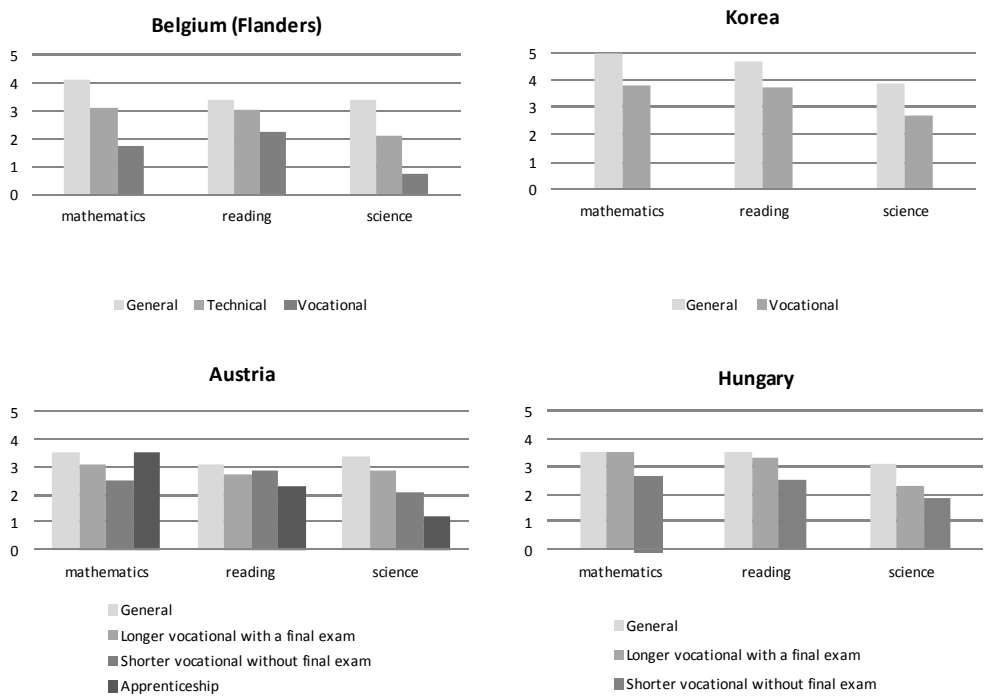
In the US as a whole, there has been a marked increase in the attention given to the basic skills of those in more vocational programs. Between 1990 and 2005, the amount of core academic coursework public high school graduates took increased, but the increase was higher among students with occupational credits. For example, graduates from the class of 2005 who accumulated 4 or more occupational credits in high school earned 2.6 more core academic credits on average than their peers in 1990 while those who took no occupational coursework in high school earned 1.3 more core academic credits on average than those who graduated in 1990. Similarly, in 2005 more occupationally oriented students met the New Basic core standards and completed 4-year college-preparatory coursework than in 1990. For example, graduates who accumulated 4 or more occupational credits in high school exhibited a 42-percentage-point gain between 1990 and 2005 in meeting the New Basics core academic standards (Levesque *et al*., 2008).

Unsurprisingly, international evidence shows that there is a correlation between time spent in subject lessons and student results in those subjects. Across all 55 countries participating in PISA 2006 students who spent more hours in regular science lessons have better results in science than students with fewer hours. In addition the US is among seven countries where students with disadvantaged socio-economic background benefit more out of additional instruction time in science than their more advantaged peers (OECD, 2010c). Both the US and international evidence provide a strong argument for maintaining high standards for all students.

Box 2.1 Academic content in vocational and general tracks

In countries with formal vocational tracks vocational students spend less time on studying mathematics, science and reading than students in academic tracks preparing for tertiary education (see Figure 2.13). Once students are in vocational tracks in such systems it is often very difficult to change to a general program. This means that for many vocational students it is virtually impossible to take more advanced general courses.

Figure 2.13 Academic content in vocational and general tracks



Source: OECD (2008a), *VET in PISA: Results from PISA 2003 and 2006*, OECD, Paris. Available at: *www.oecd.org/dataoecd/59/32/41538731.pdf*

Teacher co-operation is required to take advantage of the innovations introduced in South Carolina CATE

While the comprehensive high school has great advantages, it is more demanding on teachers and school leaders who have to diversify learning practices to reach students with different needs. South Carolina has made impressive efforts to address this challenge generally. In the context of CATE, better collaboration between CATE and non-CATE teachers would be helpful.

Under the EEDA each school, including those providing CATE, is required to organise its program around principles outlined in the 'High Schools that Work' model or another model accepted by the South Carolina Department of Education. The 'High Schools that Work' approach encourages schools to maintain rigorous academic core and use CATE to motivate students and to help them to achieve high standards (see Box 2.2).

Box 2.2 Ten principles of 'High Schools that Work'

High expectations: Motivate more students to meet higher standards by integrating high expectations into classroom practices and providing frequent feedback.

Program of study: Require each student to complete an upgraded academic core and a concentration.

Academic studies: Teach more students the essential concepts of the college-preparatory curriculum by encouraging them to apply academic content and skills to real-world problems and projects.

Career/technical studies: Provide more students access to intellectually challenging career/technical studies in high-demand fields that emphasise the higher-level academic and problem-solving skills needed in the workplace and in further education.

Work-based learning: Enable students and their parents to choose from programs that integrate challenging high school studies and work-based learning and are planned by educators, employers and students.

Teachers working together: Provide cross-disciplinary teams of teachers time and support to work together to help students succeed in challenging academic and career/technical studies.

Students actively engaged: Engage students in academic and career/technical classrooms in rigorous and challenging proficient-level assignments using research-based instructional strategies and technology.

Guidance: Involve students and their parents in a guidance and advisement system that develops positive relationships and ensures completion of an accelerated program of study with an academic or career/technical concentration.

Extra help: Provide a structured system of extra help to assist students in completing accelerated programs of study with high-level academic and technical content.

Culture of continuous improvement: Use data continually to improve school culture, organisation, management, curriculum and instruction to advance student learning.

Source: Southern Regional Education Board, *www.sreb.org/page/1139/key_practices.html*.

The integration of academic subjects, including basic skills, into the CATE curriculum is a major policy objective of the Carl D. Perkins Vocational and Technical Education Act (Perkins IV). For example geometry principles as they apply to house building are explained to students during a construction class. The integration approach is also echoed in the South Carolina EEDA and in the "High Schools that Work" model. Many studies argue that this approach can be successful both in improving student performance in academic subjects and skills in practical fields. But it does need the right support including teacher co-operation in common areas of studies (see for example the recent evaluation of curriculum integration in CATE by NRCCTE, 2010). NRCCTE (2010) shows that students improve their performance in mathematics when they are taught by teachers who cooperate with their colleagues on curriculum delivery and who receive ongoing support in the development and implementation of math-enhanced lessons in CATE. The 'High Schools that Work' model also recognises the importance of teacher collaboration and explicitly requires teachers to work together.

In South Carolina many students receive CATE courses in career centers and some on high school sites. While the career center model allows for economies of scale and provides wider choice of CATE programs to students, it creates an obstacle to

co-operation between academic and CATE subject teachers because of their physical separation. Lack of co-operation decreases the benefits of integrated approach since strong co-operation between academic and CATE subjects teachers is necessary to enhance the integration of academics in CATE curriculum. Also, good communication and information exchange helps to identify and quickly address the specific needs of students.

Early interventions are more effective than remedial education at postsecondary level

As explained, weak basic skills are an obstacle to further education and tend to cause dropout. The main response is remedial (developmental) education. US evidence shows that remedial education has positive effects on those who complete remedial courses. A number of large-scale multi-institutional studies suggest that when students successfully complete developmental education, their outcomes in terms of credit attainment, graduation and transfer are similar to those who did not need remediation. Battinger (2004) found that successful remedial maths students in public 4-year colleges in Ohio were only slightly less likely to complete a 4-year degree than those who were already college-ready. Attewell (2006) studied community college students who successfully remediated in English and found no differences between them and college-prepared students in terms of graduation. Bahr (2008) found that those who successfully complete remedial mathematics, have similar outcomes in terms of credit completion and transfer as those who did not need remedial education. A national initiative aimed at helping community college students succeed (Achieving the Dream) followed up a cohort, which entered participating community colleges for the first time in 2002. This study found that among students who were referred to remedial education, those who completed all their requirements during the first year attained the best results. Those who partially completed their remedial courses attained less impressive results, and those who did not complete any were the least successful – the share of students persisting into the second year was 80%, 65% and 45% respectively (Achieving the Dream, 2008). However, these positive effects are reaped by few students who start remedial classes since many drop out in the course of remedial education. Bahr (2008) in a multi-institutional study found that three out of four students do not succeed in completing remedial courses and these students have very weak outcomes: more than four in five do not complete a credential.

Remedial education is clearly a costly route to high school skills development. The majority of students take remedial courses in college to gain the skills and knowledge they should have gotten in high school, implying some waste in time and resources. High participation rate in remedial education (one third of college students in South Carolina) shows that remedial education is not just a safety net for a very few who for various reasons did not gain basic skills in high school, but a regular pathway of skills and knowledge development. This suggests a problem in the system and that more attention should be paid to student basic skills while in high school. This recommendation does not imply that there should be more academic and less CATE content in the high school curriculum. Conversely, CATE can contribute to the improvement of general skills in high school students, as argued above. In CATE courses students can see how theory learnt in a classroom can be applied in real life. This is beneficial to all students, but in particular to those who dislike academic learning and learn better 'while doing'.

Implementation

Resource constraint

South Carolina has already taken good initiatives to improve basic skills among high school and college students, including the introduction of the EEDA in 2005. However, its full implementation may be undermined by the current crisis. The first evaluation of the South Carolina reform launched by the EEDA (*Personal Pathways to Success Initiative)* estimates that some of the initiatives advanced by the EEDA will need to be postponed due to the recession and budgetary cuts.

The study also shows that implementation of various initiatives including the 'High Schools that Work' principles is very variable and depends on resources available to school districts and schools such as staff with relevant knowledge and experience, capacity and willingness of communities to contribute to education (*e.g.* business providing work experience). It may be necessary to enhance capacities at local level, to ensure that all districts, schools and career centers have the ability to implement the changes.

Finnish example

Countries meet student needs in various ways and South Carolina could usefully draw on these experiences. The Finnish approach stands up as a good example in targeting student learning difficulties within the comprehensive classroom. A good quality well prepared teacher workforce and comprehensive interventions tackling all factors that are at the origin of school failure are pillars of the Finish success story.

Box 2.3 Tackling learning difficulties in Finland

The **teacher** is responsible for identifying students falling behind. The teacher works with such students one-on-one, or in groups of two to four, to correct the problem.

The **teacher's assistant,** a person with some limited training, works under the direction of teachers. They may sit beside a student to answer questions and motivate those whose attention flags. Sometimes they work with students, individually or in small groups, on specific topics on which students need help.

Qualified **special needs teachers** work in consultation with regular teachers, typically focusing on literacy and numeracy. They work with students who need support beyond what is provided by the teacher and their assistant. They help students with severe disabilities who attend special schools, students with minor disabilities who are mainstreamed, and students who have not been specifically diagnosed but simply need additional help.

Multi-disciplinary teams support students who have home or social problems. The team consists of the teacher, the special needs teacher, the school's counselor and individuals outside the school (*e.g.* psychologist, social worker, representatives of the public housing system where relevant).

These approaches to minimising the number of students falling behind display two features: intensification (more time by more instructors) and alternative approaches (rather than "more of the same"). The outcomes of this set of procedures, alongside other positive features of the Finnish education system) are remarkable. Only 1.1 % of Finnish students performed below Level 1 (the lowest level of performance) in mathematics in PISA 2006, compared with 9.9% in the United States and an OECD average of 7.7%. The Finnish results for science are even better.

Source: Grubb *et al*. (2005), "Equity in Education Thematic Review Finland Country Note", OECD, Paris, abridged quotation; OECD (2007), *PISA 2006, Science, Competencies for Tomorrow's World*, OECD, Paris.

2.4 Adult learning and workforce skills

Challenge

Strengthening the workforce for 2020

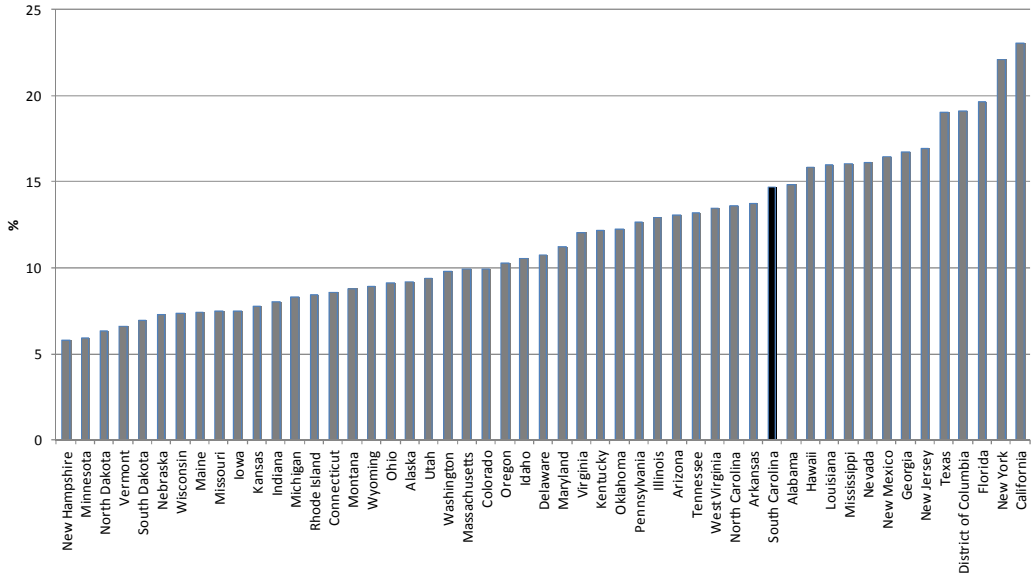
South Carolina's economic future depends very largely on the skills of its workforce. Workforce skills and how they compare both with other US states, and other countries across the world are a big influence on companies' decisions to locate, or not locate, in South Carolina. With that in mind, what steps are necessary to reinforce the skills of the workforce – say by 2020? The vast majority of those who will form the workforce in 2020 are already adults, most of them in work. It follows that any comprehensive attempt needs to address adult learning. Here, we know that there is a significant challenge. In 2006-2008 there were more than 400 000 people in South Carolina without a high school diploma; very often these same people will lack basic skills. It is particularly troublesome that so many young adults (18-34) are involved - making up 40% of all adults without a high school diploma (US Census Bureau, American Community Survey, Data Set: 2006-2008 American Community Survey 3-Year Estimates). Many young people are leaving high school without formal qualifications and failing to remedy that weakness later on.

This lack of formal qualifications is linked to weak literacy skills. One in five adults in the US performed poorly in an international literacy assessment undertaken in 1994-1998. The US average was above that of seven countries including the UK, Ireland, Hungary, Poland, Portugal and Chile, but below that of 12 other countries, including Canada, Australia, New Zealand, the Czech Republic, Sweden (Statistics Canada and OECD, 2000). Poor literacy implies problems with understanding, applying and using written information, for example being able to determine the correct amount of medicine to give to a child from information printed on the package.

Moreover within the US, South Carolina's performance falls in the lowest third of the states (Figure 2.14) according to the national assessment of the English literacy skills of adults (16 and older) (NAAL). More encouragingly, there are some signs of improvement. Between 1992 and 2003 the number of adults with low skills dropped by five percentage points.

The cost of poor literacy and numeracy is high. Analysis of the results of the US literacy survey shows that weak literacy skills are likely to limit life chances and may be related to social welfare issues including poverty, incarceration, and preventive healthcare (*http://nces.ed.gov/NAAL/estimates/index.aspx*).

Figure 2.14 Adults in the US with low skills



Source: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy, *http://nces.ed.gov/NAAL/estimates/index.aspx.*

Dispersed responsibility for adult education and training

In the US as in many other OECD countries adult education and training is provided by different bodies. At the federal level multiple agencies, including the Departments of Labor, Education, Health and Human Services, Justice, and Veteran Affairs are involved in adult education and training (excluding college degree programs and above). Table 2.2 shows that the Department of Labor is by far the biggest provider of adult education and training in terms of funding and participation.

Table 2.2 Adult education programs in the US

	Budget	Participation	Fiscal Year
US Department of Education			
AEFLA State-Administered grant	USD 560 million	2.5 million	2008
Migrant Education High School Equivalency	USD 18.5 million	7.500	2008
US Department of Labor			
Job Corps	USD 1.6 billion[1]	60 000	2007
Work Investment Act Programs (adult, youth, dislocated worker programs)	USD 3 billion	1.8 billion	2007
US Department of Defense			
National Guard Youth ChalleNGe Program	USD 83.1 million	7 000	2007
US Department of Health and Human Services			
John H. Chafee Foster Care Independence Program	USD 186 million	200 000	2008

1. Billion equals one thousand million (1 000 000 000).

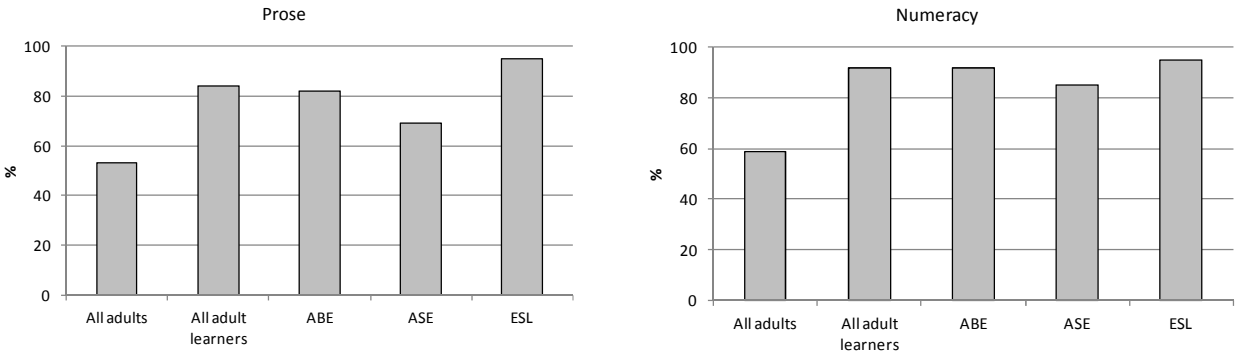
Source: US Department of Education (2008), "Bridges to Opportunity. Federal Adult Education Programs for the 21st Century", Report to the President on Executive Order 13445, US Department of Education, Office of Vocational and Adult Education.

In South Carolina, as at the federal level, agencies dealing with employment and labour issues, such as the South Carolina Department of Commerce, spend most on adult learning. Expenditure on measures undertaken under the Workforce Investment Act (Program Year 2006) only was two and a half times as much as expenditure on adult education (see South Carolina Department of Commerce, 2007; South Carolina Office of Adult and Community Education, 2006). While fragmented responsibility for adult education and training is not of itself a problem, there needs to be assurance that the adult learning package as a whole is sufficient to address the challenge of low-skilled adults. Given the scale of the challenge as described, this is very uncertain.

Participation in adult education

Adult education, as defined by the Adult Education and Family Literacy Act, aims to help people with low skills, often those without a high school diploma. It includes: Adult Basic Education (ABE) that caters for those lacking basic literacy and numeracy skills; Adult Secondary Education (ASE) that is designed for those with some literacy and numeracy skills but without high school qualifications; General Education Development (GED) that provides a high school diploma based on the test; English literacy for those with low proficiency in English; Computer literacy; and Family literacy. In the US as a whole those who participate in adult education typically have lower literacy and numeracy skills[15] (see Figure 2.15).

Figure 2.15 Adults in education lacking basic skills

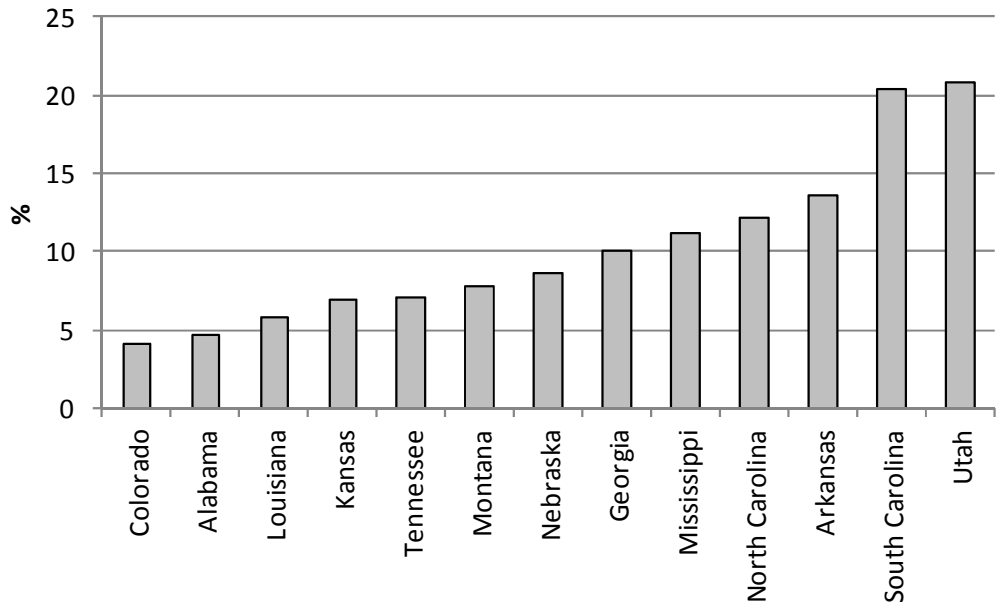


Source: Tamassia, C., *et al*. (2007), *Adult Literacy in America: A First Look at Results from the Adult Education Program and Learner Surveys*, Educational Testing Service.

One of the perennial challenges afflicting adult learning programs in many countries is delivering adult learning to those who need it most, rather than to those who already have a reasonable level of education (OECD, 2005). On this count, South Carolina performs relatively well in targeting a population lacking basic skills in comparison with some other states (Figure 2.16). In 2005/2006 64 520 adults in South Carolina participated in adult education, mostly in basic and secondary education (South Carolina Office of Adult and Community Education, 2006).

15. This level is considered as below the minimum level necessary to succeed in today's labour market.

Figure 2.16 Enrolment in adult education (2000) compared to the number of people with low skills (2003)



Source: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy, *http://nces.ed.gov/NAAL/estimates/index.aspx;* OECD (2005), *Thematic Review on Adult Learning, United States*, Country Note, OECD, Paris.

Note: 2000 is the reference year for participation in adult education, and 2003 is the reference year for the number of low skilled people. It is assumed that skill level has not changed between 2000 and 2003.

Funding

In the US adult education is funded 40% from the federal government (Title II) and 50% from state government, the remainder is covered by local government and other sources (US Department of Education, 2008). Some federal funding from Title I of the WIA is also available. National average per participant spending was USD 200-USD 600 in 2000 (US Department of Education, 2003). In South Carolina in 2002-2003 USD 135 was spent on average per adult student, slightly more than half coming from state sources (South Carolina Office of Adult and Community Education, 2003). Three years later the adult education budget increased with a higher state contribution, while enrolments fell during the same period. As a result per participant spending went up to nearly USD 400 (South Carolina Office of Adult and Community Education, 2006).

South Carolina spends much less per person enrolled on adult education than on a K12 student. Before the recession, funding of an adult represented 4% of the amount invested in a school student[16], although the figure would be higher if the expenditure of other departments was taken into account. Relative low spending may reflect participation in the short and part-time courses typical of adult education. US adults in education, in general, attended rather limited programs. The median attendance during

16. Assuming that per adult spending was USD 400.

one program year in ABE was 57 hours and 41 hours in ACE courses. The mean values were slightly higher but did not exceed 100 hours (Tamassia *et al*., 2007).

The heavy reliance of adult education on state and local funding makes it vulnerable to the local economic situation. The current recession is reducing state and school district spending, potentially impacting adult education.

Policy recommendation

Maintain efforts to ensure that all adults without basic skills have an opportunity to develop their knowledge and skills. While recognising the priority attached to basic schooling, give particular attention to the needs of young adults. Enhance co-ordination between different agencies dealing with adult education.

Supporting arguments

There are three arguments in support of this recommendation. First, while basic schooling has a strong claim as a priority for education resources, adult education programs, particularly when aimed at young adults, can also be important. Second, other countries faced with similar challenges in the adult workforce have established national skills strategies, with declared targets and bodies responsible for realising those targets. Third, there is scope to improve the co-ordination of service delivery in adult learning.

While basic schooling has a strong claim as a priority for education resources, adult education programs, particularly when aimed at young adults, can also be important

It has been argued (*e.g.* Carneiro and Heckman, 2003) that investment in basic skills is most cost-effective when realised early on in the lives of learners. This is because learning is a dynamic process in which initial disadvantages tend to be multiplied over time. This suggests that priority should be given to basic schooling and early childhood education.

At the same time, many of the young adults with weak basic skills are already parents or will shortly become parents, and their numeracy and literacy skills could be a role model to their children as well as directly providing them with the skills to support their children with homework and career decisions. For young adults in particular, the returns from investing in their skills not only impact their own performance, but also that of their children. A range of research has demonstrated that for this reason an emphasis on parental and family literacy – possibly mediated through interventions with the parents of school-age children - can be a powerful means of helping both adults and children. This suggests that some priority should also be given to adult education, particularly when it is directed at young adults.

A skills strategy for South Carolina?

Globally, many countries, like South Carolina, have recognised that their capacity to compete internationally depends increasingly on the skills of their workforces. Currently China, alongside a number of other fast-developing countries, is exerting increasing competitive pressure particularly in sectors of manufacturing industry which are relatively low-skilled. Future competition will be tougher. The huge strides China has

made in its education system and skills training, with three quarters of the cohort now completing high school, are relatively recent, but are now rapidly feeding through into the skill levels of the young labour force. In the face of such challenges some countries set demanding targets for the skills of their workforces, backed by government agencies with responsibilities for coordinating a national drive to achieve those targets (see Box 2.4).

Box 2.4 Skills strategies in Australia and the UK

In **Australia,** *Skills Australia* is an independent statutory body, providing advice to the Minister for Education, Employment and Workplace Relations on Australia's current, and future workforce skills needs. It analyses current and emerging skills needs across industry sectors, assesses evidence from commissioned research and industry stakeholders and provides Government with recommendations on current and future skills needs to help inform decisions to encourage skills formation and drive ongoing reforms to the education and training sector.

In the **United Kingdom,** the UK Commission for Employment and Skills (UKCES) was created in 2008, following the recommendation of a report assessing UK's skills needs (Leitch review), which also set skills targets for the UK in 2020. The UKCES assesses the UK's progress towards the skills targets. The UKCES advises ministers on strategy, targets and policies, and monitors the VET system and overviews the Sector Skills Councils. It is mainly composed of business leaders, but also includes trade union and local government representatives.

While US states have very different approaches and traditions, the same underlying economic logic applies. Traditional factors which have assisted economic development in South Carolina in the past, such as natural agricultural resources, will be of lesser relative importance, and it is of strategic importance to the state of South Carolina to develop the skills of the workforce. The establishment of a formal skills strategy, with targets, is an option at least worth considering.

Co-ordination improves delivery of services

Efficiency of provision is one potential challenge of the system run by different agencies but with similar missions. Inefficiency appears when efforts are duplicated and services overlap. In many OECD countries responsibility for education and training is divided across different bodies, and co-operation between them is a challenge. Traditionally, labour departments take responsibility for learning and employment for the unemployed and may also support learning in firms; while education departments develop more general learning strategies and focus on the provision of education (OECD 2005). But the responsibilities often overlap. Often the unemployed need not only short labour market training but also better basic skills to move to employment. Similarly, a person completing general education may benefit from some job specific training. Co-ordination across agencies is necessary to ensure that adult learners acquire the range of skills that respond best to their needs.

To respond to this challenge different initiatives have been launched. The Federal Department of Labor created a framework "the Shared Youth Vision Initiative" to improve co-ordination and use of resources in programs targeting disadvantaged youth (OECD, 2009b; US Department of Labor, *www.doleta.gov/ryf/*). The one-stop system was set up for the same reasons, to create a "seamless system of service delivery" (Social Policy Research Associates, 2004). The one-stop system concentrates various services in one place. At a one-stop point a person can have her or his skills assessed and be referred

to relevant programs. In the same place she or he can also obtain information on availability of education and training programs on site or at other locations and their cost (US Department of Education, 2003). Each state has a Workforce Investment Board that coordinates plans and oversees workforce investment. Boards typically involve a wide range of stakeholders, such as representatives of different state agencies, business representatives and education and training providers. But as one US study reports some states are more successful than others in enhancing co-operation and partnership across agencies (Social Policy Research Associates, 2004).

South Carolina, in addition to federal measures, adopted the Education and Economic Development Act, a powerful legislative tool, which aims to link tightly education and employment and to promote closer co-operation across agencies with the active involvement of business (South Carolina General Assembly, 116 Session, 2005-2006). The South Carolina Chamber of Commerce proposal for workforce and education development encourages better collaboration across agencies so as to reduce duplication and increase effectiveness of service delivery. Other stakeholders, such as the Department of Commerce, believe that the systematic exchange of information across all programs will allow duplication to be avoided and federal and state money used in a more efficient way. Better quality data are also important, both to identify specific needs and create targeted interventions to address them (Gunnlaugsson and Morgan, (nd) Unemployment in South Carolina, ppt). To conclude, closer co-operation and better information exchange between different agencies and service providers should lead to better outcomes in adult education and training.

Reduced funding is a threat to adult education in South Carolina. Currently temporary stimulus funds are being used to provide adult education during the summer months given state level budget cuts (South Carolina Department of Commerce, 2009b). Also, as the visiting OECD team was informed not all demand for adult education can be met and some people are put on waiting list. As the government budget for adult education is reduced, fees become more reliable sources of funding. In the technical college sector in South Carolina the share of budget covered by fees has increased considerably given a diminishing share of state funding. In adult education fees are discouraged by the US Department of Education if they can pose a barrier to program participation. Tamassia *et al*., (2007) show that overall fees did not contribute to the overall program budget in the US in 2001-02. In South Carolina the maximum tuition fee is USD 250 with the possibility of the state waiving fees for the poorest students. It is not clear whether the financial contribution from individuals has risen in South Carolina due to state budget cuts.

Implementation

Multiple obstacles limit the participation of adults in further education and training, both on the supply (provider) and the demand (participant) side. The survey carried out among adults in OECD countries pointed to: lack of time, too much work, family commitments and cost of training, as the main barriers to participation in education and training. Availability of courses was more often indicated as a problem by adults interested in vocational training than those intending to take on general courses. In South Carolina transportation and childcare arrangements may also pose problems to some participants.

The level of education also plays a role. In general those with less education participate less often in education and training. In the US the participation rate in basic

education provided as part of formal work related courses is the lowest among employees with less than a high school diploma, with a participation rate of 0.3% as compared to 5.6% among those with a graduate or professional degree (NCES, *http://nces.ed.gov/surveys/ctes/tables/A03.asp*). The low engagement of people with low skills in education and training may be related to personal reasons but also to employers selecting employees for further training.

Countries address the challenge of adult up-skilling in different ways. In Norway a right to upper secondary education (high school) is guaranteed by law. Persons without upper secondary diploma can receive free education and training leading to upper secondary qualifications. This arrangement removes barriers related to insufficient provision and cost of participation education.

Flexible provision helps adults to engage in education and training. A survey carried out among European countries reveals that the possibility of flexible working hours, the existence of individualised programs and access to good information and advice encourage adults to participate in education and training (OECD 2005). Countries diversify their means of delivery and ICT and distance education are more and more in use. One of their advantages is that they help to deliver education to those who otherwise would be difficult to reach, for example those living in remote, sparsely populated areas. The US and South Carolina use these tools extensively to support education and training. Other countries also provide examples of innovation in this area. For example the UK developed a 'Learndirect' model that focuses on providing courses in a flexible manner with heavy reliance on information technologies (OECD, 2005; *www.learndirect.co.uk/).* 'Learndirect' provides courses in Maths and English, on Business and Management, Home and Office IT. Provision is through the website or in 'learndirect' centers that can be found in different sites close to potential users such as shops, cafes, community centers. The objective is to promote e-learning for all and provide the opportunity to learn in nontraditional places (OECD, 2005).

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Annex A

Programme of the Review Visits

Preparatory visit, 6-12 January 2010

Wednesday 6 January, Columbia

Meetings with officials from the South Carolina Department of Education:
Office of Career and Technology Education,
Office of eLearning,
Office of Exceptional Children,
Office of Standards and Support,
Office of Adult of Education,
Office of Finance,
Office of Certification,
Office of Special Projects,
Office of Regional Services,
Office of Public School Choice and Innovation,
Office of Data Management and Analysis
Meetings with representatives of SC Technical College System and Apprenticeship SC
Meeting with representatives of Education and Business Alliances

Thursday 7 January, Columbia

Meetings with officials from the South Carolina Department of Commerce
Meeting with officials from the South Carolina Employment Security Commission
Meeting with an expert from the National Dropout Prevention Center
Site visit to a company participating in apprenticeship in Gaston
Site visits to a company participating in apprenticeship in Blythewood

Friday 8 January

Visit to Midlands Technical College
Visit to Middle Technical College
Meetings with representatives of the Midlands Education and Business Alliance, and the Midlands Regional Education Center
Meetings with representatives of Richland County School District One

Monday 11 January

Visit to Technology Center in Orangeburg
Visit to Orangeburg-Calhoun technical College
Visit to Heyward Career Center

Tuesday 12 January, Columbia

Meetings with officials from the SC Department of Education, Office of Career and Technology Education

Policy visit, 16-19 March 2010

Tuesday 16 March

Visits to Woodruff High School
Meeting with representatives of the Superintendent Office in Spartanburg 4 and district advisory board
Visit to Greenville Technical College

Wednesday 17 March

Visit to Laurens District 55 High School
Meeting with the District Superintendent
Meetings with representatives of SC Technical College System and Apprenticeship SC

Thursday 18 March, Columbia

Meeting the with the SC Superintendent of Education
Meeting with a representative of the SC Commission on Higher Education
Meetings with officials from the South Carolina Department of Education:
Division of Standards and Learning,
Office of Career and Technology Education,
Office of Youth Services,
Office of Adult of Education,
Office of Finance,
Office of Regional Services,
Office of Data Management and Analysis Visit
Meeting with representative of employers, State Advisory Committee (FACS), and Midlands Technical College (Department of Health Sciences)
Meetings with a representative of SC FFA Association

Friday 19 March, Columbia

Meetings with officials from the SC Department of Education, Office of Career and Technology Education

Learning for Jobs

OECD Reviews of Vocational Education and Training

United States: South Carolina

For OECD member countries, high-level workplace skills are a key means of supporting economic growth. Systems of vocational education and training (VET) are now under intensive scrutiny to determine if they can deliver the skills required. Based on reviews in 16 countries, *Learning for Jobs* is an OECD study of vocational education and training designed to help countries make their VET systems more responsive to labour market needs.

South Carolina offers CATE programs in high schools and career and technology centers, with relatively good status and linked to expectations of strong general skills. A reform agenda reflected in the 'Education and Economic Development Act' includes the development of high quality career guidance. There is also a strong technical college system. Wider challenges include an underlying problem of resources for schools, the need to further develop workplace learning, and the lack of basic skills both among school-leavers and adults.

Among the review's recommendations:

- Monitor the impact of budgetary cuts on CATE provision in poorer districts and schools, and take remedial action if necessary.
- Provide high school students who wish to enter the job market directly with more substantial work experience while in school. Improve cooperation across school district boundaries.
- Sustain the effort to improve literacy, numeracy and preparedness for college in high school CATE students, in particular among disadvantaged students.
- Maintain efforts to ensure that all adults without basic skills have an opportunity to develop their knowledge and skills.

The OECD has completed VET policy reviews in Australia, Austria, Belgium (Flanders), the Czech Republic, Germany, Hungary, Ireland, Korea, Mexico, Norway, Sweden, Switzerland, the United Kingdom (England and Wales), and the United States (South Carolina and Texas). A report on Chile and a report on the People's Republic of China have also been published . The final comparative report was published in August 2010.

Background information and documents are available at
www.oecd.org/edu/learningforjobs.