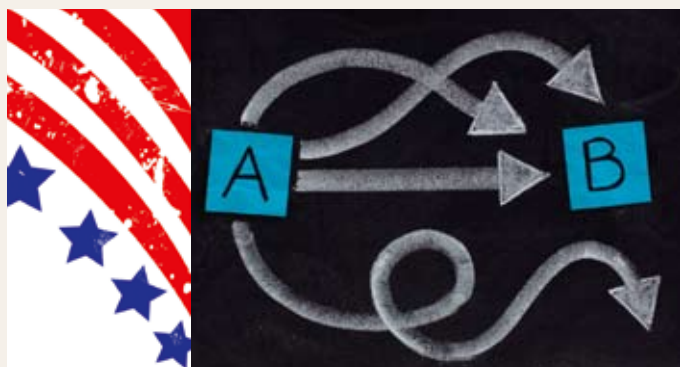


Combining vocational and academic learning



How multiple pathways work in the USA

As college and school consortia continue to develop their combined academic and vocational offer through Diplomas, what lessons can be learned from other countries? One researcher, investigating the emergence of multiple pathways courses in the United States, has found the combined route increasingly popular among learners. There is also evidence that it leads to improved outcomes.

Choosing a vocational option has become the norm among American learners in recent years. In 2005 nearly all high school students took at least one 'career and technical education' (CTE) course, and more than 60 per cent took three or more. This trend is rather surprising, given the increasing pressure on schools in the US, as in England, to meet academic targets. What American educators are finding is that the appetite for vocational learning is in addition to, not instead of, following academic subjects. The period 1990-2005 saw an increase in the amount of English, social studies, science and mathematics units learners took. This amounted in total to an average increase of one-half year of schooling per learner.

What do these 'multiple pathways' courses look like? At their core, the principles are similar to those underpinning our own Diplomas; central among them:

- the location of the programme of study within a particular industry sector, and
- the connection of academic learning to real world applications.

The researcher illustrated how this works in practice in building and environmental design, and health careers pathways. The building and environmental design course, for example, combined academic knowledge with vocational applications in the following ways:

- In geometry classes students learned the concepts and skills to build roofs and frame walls that can withstand strong winds.
- Learners applied maths knowledge to design problems such as building bridges that were seismically sound.
- Younger learners (aged 14-16) completed work-based components with mentors from such areas as construction and interior design, while older learners (16-18) took up internships where their work was assessed by professionals against industry standards.

The researcher presented evidence that applied learning of this sort releases learners' creative potential, taking their learning forward to tackle real world problems. In one case, an environmental research and technology learner designed and built a 'fire popper'. This was a device designed to fight forest fires by covering an area with carbon dioxide foam when dropped from an aircraft. In another case a team of psychology and human behaviour students developed an electronic role-playing game.

While it is hard to say how widespread cases of real world applications of learning like these are, the researcher provides a range of evidence that the multiple pathways approach enhances learning. This includes analysis of the outcomes of high school students' final exams in California, where 50 per cent of multiple pathways learners met the minimum 'A to G' course requirements, against 37 per cent of learners statewide.

Another study focusing on achievement in mathematics, found that learners who followed the integrated programme had significantly better results than control groups in mathematics tests. A feature of this particular programme was the collaboration of vocational and mathematics specialist tutors in designing and delivering the programme. This is similar to the project we reported on in Issue 3 of *Inside Evidence*, in which functional skills tutors supported vocational colleagues to embed literacy and numeracy learning in their courses (www.excellencegateway.org.uk/page.aspx?o=163837).

Evidence also points to the value of locating functional skills within real-world contexts in adult education. Soldiers who lacked basic literacy skills improved their reading skills when learning was integrated with their daily tasks. Not only did they perform better than colleagues on traditional programmes, they did this by a factor of four or five when assessed on their job-related reading.

Take action

Could you:

- contact former learners to explore how they are applying academic skills in the context of their work, and invite them to talk to your current cohort of learners?
- work with academic/vocational subject specialists to identify where academic learning can take place within real world contexts?

Evidence source

Hoachlander, G. (2008) Bringing industry to the classroom. *Reshaping High Schools*, 65 (8), pp. 22-27.

The researcher based his findings on official data releases and a review of research literature.