

Enterprise and Learning Committee

EL(3)-13-08 (p3) : 7 May 2008



Purpose

This paper is being presented to the Committee, at their request, following the exhibition in the National Assembly by a primary and secondary school taking part in the F1 Challenge. The Committee has expressed an interest in exploring what happens at school level to encourage innovative and entrepreneurial skills and how education up to the age of 18 might impact on local, regional and national economies.

Background

I am the Chief Executive of the Technology Alliance Wales (TAW) which is a charitable trust and a company limited by guarantee. We have been in existence for four years and are largely funded by the Welsh Assembly Government. We have a varied membership encompassing the industry forums, SEMTA, EEF, Fforwm, Careers Wales, HE and Welsh Assembly Government. TAW was established to:-

improve the quality of technology education across Wales;

improve liaison between industry and education;

seek to get a better match between the skills that industry needs and what pupils are taught;

act as a clearing house for projects and funding related to engineering and technology in the schools of Wales;

co-ordinate activities that encourage engineering and innovation.

The F1 Challenge, which captured the attention of the Committee, is one activity that manifests much of our view on nurturing creativity and entrepreneurship in young people. Much of formal education is at odds with developing free thinking, enquiring minds and innovation. Many famous entrepreneurs are known to have dropped out of formal education. Our thesis is that more of education should be delivered through meaningful and relevant contexts that relate to the world that pupils know and understand. Formal maths, science and communication skills are often so divorced from the reality of life and the work place that pupils struggle to see the relevance of the lessons they endure. We now live in a highly technological, fast moving and sophisticated world and many aspects of education are seen as irrelevant to pupils. The activities that I will talk about are all extra-curricular. Why are some of the most motivating, rewarding and educationally worthwhile projects outside the formal curriculum?

Most of formal education, at school level, stifles creativity. Tests and examination require formulaic responses to questions. Most examination and test questions require closed answers.

Education and industry largely exist in parallel universes. There has, to my knowledge, never been a prestigious, national debate involving both parties to resolve the skills agenda. I am privileged to walk in both camps which makes me even more aware of the divide between the two.

We desperately need to increase the number of more able pupils entering professional careers in engineering and manufacturing. These will need to be highly innovative individuals to ensure the success of Wales in the future. Why, therefore, is engineering and manufacturing so low in the esteem of many schools?

Summary / Recommendations

The main thrust of the TAW philosophy is for 'joined up thinking' in relation to engineering, technology and manufacturing education all of which rely on innovative and entrepreneurial skills and understanding, particularly for future prosperity.

TAW believes that:

education needs to move more swiftly towards the needs of the skilled workforce in the competitive global economy;

more learning should be contextually based;

activities that motivate and develop skills and understanding in context should become part of the formal curriculum;

resources that feed and develop creativity should be made available.

There are strategies that could facilitate this such as mobile learning centres, junior technicians, strategically based specialist centres. This would ensure that our future innovators have access to today's technology rather than that of yesterday.

We need to introduce activities that enthuse primary pupils, for example help extend the small pilot involving Y5 and Y6 pupils in the F1 Challenge.

The Welsh Assembly Government funded a Computer Aided Design (CAD) Initiative some years ago. This was nationally (UK) recognised as a success as TAW trained one teacher from every secondary school in Wales in one year. A second round built on this success and we could have established Wales as a leading European nation in CAD. We have led the way with a City and Guilds qualification in CAD. We have secured free software of the highest calibre for our schools yet the 14-19 leaders are not interested in supporting this highly relevant learning pathway across Wales. This is such a motivating, relevant, fast growing area which is at the heart of creativity and future prosperity that the lack of support for its development flies in the face of the rhetoric surrounding future skills, creativity and entrepreneurship.

The current staff development arrangements in schools do not suit the needs of teachers of innovative subjects such as engineering and technology.

I welcome the opportunity to discuss these thoughts with the Committee.

Bob Cater
Chief Executive
Technology Alliance Wales