National Assembly for Wales

Enterprise and Business Committee

Follow-up inquiry into Science, Technology, Engineering and Mathematics (STEM)
Evidence from Prof Mike Phillips – STM 09

Further to the National Assembly for Wales's Enterprise and Business Committee follow-up inquiry into Science, Technology, Engineering and Mathematics (STEM) Skills and the request for written submissions from interested parties, I am providing some brief considerations. This response relates to the Terms of Reference:

I believe there is still a significant shortfall in the provision of STEM in both schools, further education and higher education. I do not believe that enough is being done to address the issues identified in the Enterprise and Learning Committee's 2011 inquiry into the STEM agenda. The recent OECD report highlights underlying influences in this situation.

Additional funding is still needed for STEM subjects at all levels. This is because the cost of effectively delivering STEM disciplines is significantly more than for non-STEM subjects. In particular STEM branches of Engineering and Physics are especially difficult to get young people to engage with and this is partly due to the lack of real 'hands-on' equipment at the disposal of educators. Such resources allow contextualization of otherwise 'dry' theoretical concepts. To generate enthusiasm and passion in the STEM area requires students to appreciate its potential value and to see its applications, i.e. practical experiments and demonstrations showcasing exciting real world applications that are possible in STEM domains. This has both an associated capital expenditure cost and a 'staff time' resource cost due to the extra time required to provide and develop such a provision.

I think there has been some progress in addressing the gender stereotype in STEM, but in reality numbers of female students 'choosing' to engage is still sadly very low. Despite becoming increasingly recognised as appropriate subjects for both genders, much more work needs to be done in order to shift the balance and encourage more girls into STEM areas of study.

From engagement in local schools at primary level, and being a STEM Ambassador, I believe that there is progress being made in STEM through the medium of Welsh. However, without more dedicated Welsh language facilities at higher levels (and resources) there is always going to be a lack of Welsh language STEM engagement.

Although short, I hope this helps.

With best wishes,

Mike

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