

Yamuna Bagiya and Farzana Aslam

Coventry University

A study of evaluation methodologies and impact of STEM Outreach activities

Day 2 – Parallel IV (10.25-10.55)

The government of United Kingdom has identified the uptake of Science, Technology, Engineering and Mathematics (STEM) subjects into further education as a key factor in ensuring a successful future for the nation (HM Treasury 2004, The Work Foundation 2011). Also, research conducted by The Confederation of British Industry (CBI) has predicted that, in the next 5 to ten years, an additional 2.2 million people will be required in STEM related industry (CBI 2011). However, it has been indicated that there is a shortage in the supply of STEM graduates (Department of Education 2011, HM Treasury and BIS 2011, Roberts 2002) which will affect the economy negatively.

To address the shortage of STEM graduates, and in order to increase the interest of younger generation in STEM subjects, many outreach and enrichment initiatives are being designed and delivered. Some outreach and enrichment programmes are designed to give students the motivation and interest in science and mathematics from an early age in order to aid them to take up STEM related courses at university level (Toland 2011). They create awareness and encourage more students to take up STEM related courses (Department of Education 2011, Toland 2011). Younger students especially enjoy making exciting things, taking part in fun activities and experimenting with different things. The main purpose of developing outreach programmes is that the students can understand, relate and experience the fun behind STEM subjects (Jeffers et al 2004).

However, so far there are no significant research findings on pedagogy of outreach programmes, methodology of longitudinal evaluation of different types of outreach activities and their impact. This paper will highlight the findings of research carried out at Coventry University, on evaluation strategies and the impact of STEM outreach activities on different widening participation groups.

References

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