

University of Wolverhampton
Research Seminars in Psychology

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Title: How can we encourage primary school children with low science capital to think STEM4Me?

Short biography

Dr Josephine Chen-Wilson is a senior lecturer in Developmental Psychology at the University of Northampton. Dr Chen-Wilson's research explores primary school children's conceptualisation of science and factors influencing their affinity to STEM careers. Josephine is a national STEM ambassador and engages in STEM outreach activities with a widening participation agenda. Josephine has been instrumental in setting up the Grils4Science and STEM4Me initiatives to increase children's science capital and efficacy in learning STEM subjects.

Abstract

Research into the barriers to pupils' affinity to science learning and STEM careers mainly focuses on secondary pupils. This study explored factors influencing primary school children's interests in future science learning and career, including perceived quality of science teaching in school, family science attitude, and self-efficacy in learning about science. Primary school children (N= 687) in the West and East Midlands in Years 4 to 6 completed a survey on their science capital (Archer et al., 2015) and whether they would like to study science subjects in the future. Most of the children in this study had a low science capital. However, despite their similar socioeconomic backgrounds, children's affinity to STEM showed marked school differences. The children's self-perception and self-efficacy in science learning significantly impacted their attitude towards science learning and STEM careers, especially amongst those who regarded science as either negative or out of their reach.

Exploratory Factor Analysis was used to explore the reasons behind whether some children would like a future STEM career. Three factors emerged from the reasons chosen by children who showed science affinity: external incentives, intrinsic motivation and job security. In contrast, four factors emerged for children with no science affinity: science is not cool, science is too much effort for too little return, science is out of my reach and something else is just better than science. The findings will be discussed with respect to the widening participation agenda and the implications of STEM outreach activities for primary school children.