

A National Study of Scientific Talent Development in Singapore

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Abstract

Three cohorts comprising a total of 155 gifted science students who had participated in a research mentorship program, the Science Research Program (SRP) in Singapore, were surveyed in this cross-sectional study. Adapting Gagne's (2003, 2004) *Differentiated Model of Giftedness and Talent (DMGT)* as a conceptual framework, this study examined the intrapersonal and environmental catalysts that students perceived to have contributed to their talent development in the sciences. It also sought to evaluate the impact of the SRP on the students, and the extent to which it reinforced their passion for the sciences, and decision to pursue careers in science and /or research.

Respondents attributed the biggest role to the 'self' in their talent development journey. They perceived that various intrapersonal qualities they had – sense of curiosity, passion for the subject as well as persistence – were most important in nurturing and sustaining their interest and engagement in science. The external catalysts of teachers and the school appeared to have played a bigger role than parents and the home in respondents' perceptions of the influences on their scientific talent development process. Qualitative descriptions of inspiring and memorable teachers were consistent with qualities of effective teachers in the literature.

Findings also showed that students felt the SRP had been very effective in enhancing their scientific knowledge and skills, but that it was less impactful in shaping their future course and career decisions. Indeed, except for a handful who reported that the SRP actually helped them discover that science was not really their passion, the majority plan to pursue careers in science, both in research and in applied fields, aspirations they have had since childhood. There appeared to be little attrition of this group from the science pipeline although there are some indications that more might need to be done to attract more gifted females to the field and to help them remain in the field.

Based on the findings, suggestions for future research directions are offered. Recommendations for practice and policy are also discussed.