National Association of Gifted Children Research and Evaluation Network October, 2016

Archer, L., Dawson, E., DeWitt, J., Seakins, A. and Wong, B. (2015). "Science capital": A conceptual, methodological, and empirical argument for extending bourdieusian notions of capital beyond the arts. *Journal of Research in Science Teaching, 52*, 922–948. doi:10.1002/tea.21227

Previously, the authors proposed the concept of "science capital" a specific form of high value social and cultural capital. In this study, the authors define science capital and report their findings from surveying 3,658 students. Science capital encompasses scientific literacy, science appreciation, science media consumption, out-of-school science learning, knowing people with jobs related to science, and talking to others about science. Students with high science capital are more likely to be male, Asian, and from socially advantaged backgrounds. Those with low science capital tend to be girls from less socially disadvantaged backgrounds. Importantly, students with low science capital reported that they were less likely to want to work in a science-related job and less likely to continue studying science. Understanding science capital is a way to understand how inequalities are reproduced in science education and careers preparation. Moreover, understanding science capital is an important step in sharing privileged information and activities more equitably.

Benny, N., & Blonder, R. (2016). Factors that promote/inhibit teaching gifted students in a regular class: Results from a professional development program for chemistry teachers. *Education Research International, 2016*. Retrieved from http://dx.doi.org/10.1155/2016/2742905.

Eighty-four photo-narratives that illuminate supportive and inhibiting factors related to teaching gifted students in regular classrooms were collected from 14 chemistry teachers who participated in a professional development course "Best practices for gifted and talented students" in Israel. The photo-narratives were analyzed based on a constructive/interpretive qualitative framework. Results indicate that the top five factors that support the teaching of gifted students in a classroom with mixed-ability students are opportunities for: inquiry laboratories, teacher interactions with the gifted students, incorporation of technology, exposure to high quality teacher knowledge, and science enrichment programs.

Fort, D. C. (2011). One more legacy of Paul F. Brandwein: Creating Scientists. *Journal of Science Education and Technology, (20),* pp. 270-285.

The researcher considered the influence of Paul F. Brandwein, a scientist, teacher, and author, on his gifted students, many of whom pursued careers in the sciences. The researcher analyzed survey responses from 25 of Brandwein's students, looking for evidence of his hypothesis that young people who later become scientists often share three characteristics: a Genetic factor (general intelligence, numerical ability, and verbal ability), a Predisposing Factor (persistence, ability to face failure, and questioning current explanations) and an Activating Factor (opportunities to conduct authentic science experiments under the mentorship of a skilled teacher or other mentor). The researcher noted that most respondents gave little credence to the ideas of a Genetic Factor, but, with few exceptions noted that characteristics or experiences that could be classified under the Predisposing and Activating Factors fit with their experiences as they entered into careers in the sciences. Specifically, all respondents noted the importance of Brandwein, and other mentors in the sciences.

Joanne R. Funk, Editor. Contributors: Cindy Gilson, Lori Ihrig, Katie Kapustka, Katie McClarty, Chandra Floyd, and Fei Ye Yew. This publication is courtesy of the National Association of Gifted Children Research and Evaluation Network Membership Committee.

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More References

Cross, T. L. & Frazier, A. D. (2010). Guiding the psychosocial development of gifted students attending specialized residential STEM schools. *Roeper Review, 32*(1), 32-41.

Khatib, N. M. The adoption of technology-enhanced instruction to support education for all. *Gifted and Talented International, 29*(1-2), 93-98.

Kim, K. H., VanTassel-Baska, J., Bracken, B. A., Feng, A., & Stambaugh, T., (2014). Assessing science reasoning and conceptual understanding in the primary grades using standardized and performance-based assessments. *Journal of Advanced Academics, 25*(1), 47–66.

Melber, L. M. (2003). Partnerships in science learning: Museum outreach and elementary gifted education. *The Gifted Child Quarterly, 47*(4), 251-258.

Pfeiffer, S. I., Overstreet, J. M., & Park, A. (2010). The state of science and mathematics education in state-supported residential academies: A nationwide survey. *Roeper Review, 32*(1), 25-31.

Stott, A., & Hobden, P. A. (2016). Effective learning: A case study of the learning strategies used by a gifted high achiever in learning science. *The Gifted Child Quarterly, 60*(1), 63-74.

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