

## **Comparing Sensory Processing by Gifted and Talented Children: Implications for Learning and Play Participation**

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### **Introduction:**

The paper is part of a larger project investigating the neuropsychological basis of occupation, i.e., impact of academic giftedness and creative talents in occupational choices, and whether sensory processing influences that choice. Documentation of genius and talent has occurred since the 16<sup>th</sup> century, citing morphological differences and pathology in brain function and social adjustment, but none comparing sensory processing to provide clues for their occupational choices. Inspired by the literature and by the late A. Jean Ayres, the author gathered data to answer the posted questions.

### **Objectives:**

- 1. Track the literature on document genius and talent as they relate to occupation
- 2. Compare scores achieved by academically gifted and creatively talented children on a standardized test.
- 3. Discuss the implications of research results for programming

### **Methods**

This descriptive study compared Sensory Integration and Praxis Test scores by 31 academically gifted and 35 creatively talented children in an attempt to investigate the impact of sensory processing on participation in child occupations. Sample comprised students from Southeastern United States satisfying research criteria. Data collection occurred in the schools, and upon completion, analysis of test scores provided the results reported here.

### **Results/Discussion:**

Results showed no significant difference within 95% confidence level between the two samples and the norm. However, two-tailed t-tests revealed significant differences in 4 of 17 subtests, namely Kinesthesia, Postrotary Nystagmus, Praxis on Verbal Command, and Graphesthesia. Segregation of a learning disabled talented subgroup revealed a significant difference from gifted and non-learning disabled talented samples in Finger Identification. The study revealed a high incidence of tactile defensiveness in all three samples.

### **Conclusion:**

The directional difference between the two samples provided clues for occupational preferences. Because the gifted sample scored better in all, but significantly in Kinesthesia, Postrotary Nystagmus Test, and Praxis on Verbal Command, they might prefer occupations rich in vestibular, somatosensory, and language processing; the talented sample might prefer those activities that require discriminatory somatosensory with visual input, as well as coordinating the two body sides based on better Graphesthesia scores.

### **Contribution to the Practice/Evidence Base of Occupational Therapy:**

The results of the study provides clues for special programming, if not a suggestion to alert to possible remediation and/or enrichment educational and therapeutic activities for this special population.