

## **Assistive Technology (AT) Enhancement of Written Expression for Individuals with Neurodevelopmental Disorders**

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### **Purpose: AT Intervention Efficacy Study**

The purpose of this project is to carry out an intensive training program in subjects with a broad range of neurodevelopmental disabilities to assess the efficacy of assistive technology (AT) intervention.

### **Background**

There is a lack of research efficacy concerning the use of assistive technology in individuals with cognitive deficits. Approximately 3% of the U.S. population has mental retardation with varied etiologies. The most common inherited cause of mental retardation is fragile X syndrome (Hagerman & Hagerman, 2002), whereas the most common chromosomal cause is Down Syndrome. In addition, approximately 1 in 100 individuals in the general population is affected with fetal alcohol spectrum disorders, perhaps the most common known cause of mental retardation (Hagerman, 1999a).

At the UC Davis M.I.N.D. Institute, which is devoted to both clinical work and research regarding individuals with neurodevelopmental disorders, we see a large population of both children and adults with mental retardation or cognitive disabilities. Most of these individuals would benefit dramatically from the use of assistive technology (AT), but the educational environment in California does not routinely recommend AT for enhancement of reading and writing skills of children and adults with neurodevelopmental disorders. The reasons are varied and often include lack of expertise and budgetary constraints. In addition, there is a lack of efficacy research in the utilization of this technology to further support the widespread use of AT. In our work with many types of neurodevelopmental disorders we have seen anecdotal improvements in expressive communication with use of AT (Hagerman, 1999a, 1999b, 1999c; Scharfenaker, O'Connor, Stackhouse, & Noble, 2002).

### **Current Information**

In this study we have targeted the use of two assistive technology programs developed by Don Johnston Inc., CO:Writer® 4000 and Write:OutLoud®, which can enhance the written language expression of those with mental retardation. These tools have not been appropriately utilized among individuals with neurodevelopmental disorders, and our research will help to rectify this problem.

Our poster will present an update of the subjects in the study, including research issues, subject diagnoses and diagnostic trends as assessed through baseline and follow-up testing.

We will also provide a demonstration of the computer software if the poster area has an available set-up for this, as well as some videos which show some of the subjects utilizing the software.