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Assistive Technology Enhancement of Written Expression for Individuals with Neurodevelopmental Disorders [Poster]

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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.

This study will investigate the impact of these tools, using valid measures and analysis techniques.

Subjects are randomized into intensive intervention group or standard of care group. Subjects who are initially randomized to the control group are rolled over into the intervention group following the 1 year of software use.

Subjects include individuals with fragile X syndrome, sex chromosomal abnormalities, Down syndrome, fetal alcohol syndrome and autism spectrum disorders.

Subjects Demographics (N=32):
- Mean Age: 12.9 years
- Mean Verbal IQ: 78
- Mean Full Scale IQ: 74
- Mean Reading Level: 5th grade 1st month
- Mean Writing Level: 5th grade 2nd month

Subects

2 subjects enrolled to date
2 subjects disqualified to continue: 1 due to reading level lower than 1st grade, 1 due to cognitive level too high
17 randomized to intervention group, 15 to control group
10 subjects have completed 1 year of intervention
Subjects have completed control year, rolled over to intervention group

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Subjects

Subjects are asked to write a story about a picture for 15 minutes

Spontaneous Writing Task Example

Parents are asked questions about their feelings/attitudes toward use of software and their child’s abilities both before and after the intervention year of the study.

Survey Questions

1. I understand how to use Co:Writer
2. I understand how to use Write: Outloud
3. I think using software will help me teach writing
d. I think using software will help me teach reading
f. I think using software will help me teach math
7. I think using software will help me teach writing
8. I would be likely to use the software on my own without additional intervention
9. My child writes better when he/she uses the computer
10. My child struggles with writing – legibility
11. My child struggles with writing – effort/time
12. At this time I feel that my child’s writing is OK
13. At this time I feel that my child’s writing could be improved

Discussion

Although we do not yet see a trend in improvement of writing, some individuals have shown improvement in some skills such as amount of generative language produced after a year of software use.

Although the reading level is significantly lower at time 2 thus far, we believe this is not a sign of loss of skills, but rather the demands of the standardized testing increasing with age.

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