### Considerations for Writing Instruction in Children with High Functioning Autism: A Review of Literature

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<th>Author</th>
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<th>Participants</th>
<th>Intervention</th>
<th>Genre</th>
<th>Target Skills</th>
<th>Writing process</th>
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<tr>
<td>Asaro &amp; Saddler (2009)</td>
<td>case study</td>
<td>1 male (10 yrs)</td>
<td>Self Regulated Strategy Development (SRSD)</td>
<td>narrative</td>
<td>Story elements/overall story quality</td>
<td>planning</td>
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<tr>
<td>Asaro-Saddler &amp; Bak (2012)</td>
<td>single-subject design with multiple baselines across participants</td>
<td>2 males, 1 female (9-9 yrs)</td>
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<td>single-subject with multiple probes across baselines</td>
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<tr>
<td>Asaro-Saddler &amp; Bak (2014)</td>
<td>single-subject with multiple baselines across participants</td>
<td>5 males, 1 female (8-10 yrs)</td>
<td>Self Regulated Strategy Development (SRSD)</td>
<td>expository/persuasive</td>
<td>Persuasive writing, planning, self-regulation</td>
<td>planning</td>
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<td>Bas &amp; Reyes (2003)</td>
<td>pretest/posttest</td>
<td>1 male, 1 female (8-14 yrs)</td>
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<td>Bedrosian, Leaker, Speidel &amp; Pollitsh (2003)</td>
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<td>2 males (13 &amp; 14 yrs)</td>
<td>Multimodal assistive technology: AlphaTalker, story grammar map, storyboards, story writing software</td>
<td>narrative</td>
<td>Narrative writing and revisions</td>
<td>planning, translating, revising</td>
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<tr>
<td>Delano (2007a)</td>
<td>case study with multiple baseline</td>
<td>1 male (12 yrs)</td>
<td>Self Regulated Strategy Development (SRSD)</td>
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<td>Use of action words, describing words + use of revisions</td>
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<tr>
<td>Delano (2007b)</td>
<td>multiple baseline design across responses</td>
<td>3 males (13-7 yrs)</td>
<td>Self Regulated Strategy Development (SRSD) + Video self-modeling</td>
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<td>Number of words and functional story elements</td>
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<tr>
<td>Pennington, Jones Ault, Schueler &amp; Sanders (2010)</td>
<td>multiple probe across participants</td>
<td>3 males (7-10 yrs)</td>
<td>Simultaneous prompting + Computer-assisted instruction</td>
<td>narrative</td>
<td>Story writing, sentence construction</td>
<td>translating</td>
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<tr>
<td>Pennington, Stonhoff, Gibson &amp; Bafano (2012)</td>
<td>multiple probe design across behaviors/stimuli</td>
<td>1 male (7 yrs)</td>
<td>Simultaneous prompting + Computer-assisted instruction</td>
<td>narrative</td>
<td>Sentence construction</td>
<td>translating</td>
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<tr>
<td>Pennington, Collins, Stonhoff, Turner &amp; Gunstallman (2014)</td>
<td>multiple probe across behaviors</td>
<td>5 males (7-10 yrs)</td>
<td>Simultaneous prompting + Computer-assisted instruction + Peer (PixWriter Software)</td>
<td>narrative</td>
<td>Story writing</td>
<td>translating</td>
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<tr>
<td>Schneider, Colding &amp; Trynka (2013)</td>
<td>multiple phase alternating treatments with a final treatment phase</td>
<td>4 males (4-6 yrs)</td>
<td>Self Regulated Strategy Development (SRSD) + Speech recognition + Word processing</td>
<td>narrative</td>
<td>Story elements/overall story quality</td>
<td>planning, translating</td>
</tr>
<tr>
<td>Yamamoto &amp; Miyah (1999)</td>
<td>pretest/posttest</td>
<td>3 males (8-9 yrs)</td>
<td>Computer assisted instruction + Differential reinforcement + Error correction</td>
<td>---</td>
<td>Sentence construction</td>
<td>planning, translating</td>
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</table>

### Introduction

- Writing is an important instructional target for children in schools including children diagnosed with an Autism Spectrum Disorder (ASD).
- A widely accepted model of the writing process includes components of planning, writing, and revising, each reliant on executive function or language processes (Hayes & Flower, 1980).
- For children with ASDs, language is one of the hallmarks deficits along with deficits in some executive function processes (e.g., theory of mind).
- With increased emphasis on written expression in the Common Core State Standards, and increases in mainstream mandates for children with ASDs, there is a need for research on writing abilities housed within a sound theoretical framework.
- The purpose of the study is to summarize the body of research conducted on writing interventions specifically for student with ASDs housed within the Hayes and Flower (2000) writing process framework. The specific research questions are:
  1. What writing skills have been targeted in intervention research for children with ASDs? How effective were these interventions?
  2. How can findings across studies be translated into clinical practice?

### Method

- A comprehensive electronic search was conducted across appropriate databases to obtain studies spanning the past 20 years on treatment of children with autism.
- Researchers used the following combinations of keywords: autism; Asperger syndrome; High Functioning Autism; writing; written expression; sentence construction; story writing; and writing composition.
- The inclusionary criteria for articles was: a) targeted or included disaggregated data on individuals diagnosed with an ASD; b) included an empirical study for explicit instruction in written expression; c) published between 1995 and 2015 in peer-reviewed journals; and d) targeted writing performances (narrative or expository text parts or quality) as a dependent variable.

### Results

- The current literature review aimed to investigate studies of writing interventions for children with Autism that support writing across three processes: planning, translating, and revising (Hayes & Flower, 1980).
- All studies reported improvement in participants‘ performance on a variety of targeted writing tasks, with 10 studies reporting generalization of skills to untrained response topographies after intervention.
- More than half the studies implemented SRSD procedures as an intervention. To date, it is the most investigated intervention for writing in children with ASD and shows promise for improving writing.
- None of the studies met the minimum criteria for being deemed evidence based according to Homer et al. (2005) or Gersten et al. (2005); however, internal validity has been demonstrated.
- While except 2 studies targeted narrative writing, none discussed deficits in theory of mind and its implications in written expression, an important consideration for children with ASDs.

### Discussion

- Future directions for this research include:
  1. Development of a functional definition of High Functioning Autism, especially in the context of an inclusion classroom setting.
  2. Increase the sample size and complexity of experimental design to meet evidence based criteria.
  3. Research across multiple writing genres.
  5. Studies that target all the components of the writing process that also integrate SRSDs at intervention tools.

### Acknowledgements

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  ROW-Lab: [http://blogs.shu.edu/row-lab/](http://blogs.shu.edu/row-lab/)
- Correspondence about this project should be directed to anthony.koutsofas@shu.edu
References


