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

Denise Gauntlett and Anthony D. Koutsoftas

Seton Hall University

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 hallmark deficits along with deficits in some executive function processes (e.g., theory of mind).
- With an 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 (1980) 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 writing in 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

Author	Design	Participants	Intervention	Genre	Target Skills	Writing process
Asaro & Saddler, (2009)	case study	1 male (10 yrs)	Self Regulated Strategy Development (SRSD)	narrative	Story elements/ overall story quality	planning
Asaro-Saddler & Saddler (2010)	single-subject with multiple probes across multiple baselines	3 males (6-9 yrs)	Self Regulated Strategy Development (SRSD)	narrative	Story elements/ overall story quality	planning, translating
Asaro-Saddler & Bak (2012)	single-subject design with multiple baselines across participants	2 males; 1 female (8-9 yrs)	Self Regulated Strategy Development (SRSD)	expository	Story elements/ overall story quality	planning, translating
Asaro-Saddler (2014)	single-subject with multiple probes across baselines	3 males (7-8 yrs)	Self Regulated Strategy Development (SRSD)	narrative	Story elements/ overall story quality	planning, translating
Asaro-Saddler & Bak (2014)	single-subject with multiple baselines across participants	5 males; 1 female (8-10 yrs)	Self Regulated Strategy Development (SRSD)	expository-persuasive	Persuasive writing, planning, self-regulation	planning
Basil & Reyes (2003)	pretest/posttest	1 male; 1 female (8 &14 yrs)	Multimedia software package (Delta Messages)	narrative	Sentence construction	translating
Bedrosian, Lasker, Speidel & Politsch (2003)	single-subject ABA	2 males (13 & 14 yrs)	Multicomponent assistive technology: AlphaTalker, story grammar map, storyboards, story writing software	narrative	Narrative writing and revisions	planning, translating, revising
Delano (2007a)	case study with multiple baseline	1 male (12 yrs)	Self Regulated Strategy Development (SRSD)	narrative	Use of action words, describing words + use of revisions.	planning, revising
Delano (2007b)	multiple baseline design across responses	3 males (13-17yrs)	Self Regulated Strategy Development (SRSD) + Video self-modeling	expository-persuasive	Number of words and functional story elements	planning, translation, revising
Pennington, Jones Ault, Schuster & Sanders (2010)	multiple probe across participants	3 males (7-10 yrs)	Simultaneous prompting + Computer-assisted instruction	narrative	Story writing, sentence construction	translating
Pennington, Stenhoff, Gibson & Ballou, (2012)	multiple probe design across behaviors/stimuli	1 male (7 yrs)	Simultaneous prompting + Computer-assisted instruction	narrative	Sentence construction	translating
Pennington, Collins, Stenhoff, Turner & Gunselman (2014)	multiple probe across behaviors	5 males (7-10 yrs)	Simultaneous prompting + Computer assisted instruction (Pixwriter Software)	narrative	Story writing	translating
Schneider, Codding & Tryon (2013)	multiple phase alternating treatments with a final treatment phase	4 males (grades 4-6)	Self Regulated Strategy Development (SRSD) + Speech recognition + Word processing	narrative	Story elements/ overall story quality	planning, translating
Yamamoto & Miya (1999)	pretest/posttest	3 males (6-8 years)	Computer assisted instruction + Differential reinforcement + Error correction	---	Sentence construction	planning, translating

Discussion

- 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 Horner et al.(2005) or Gersten et al. (2005); however, internal validity has been demonstrated.
- While all 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.
- 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.
  4. Consideration of theory of mind in writing.
  5. Studies that target all the components of the writing process that also integrate SRSDs at intervention tools.

Acknowledgements

References

Asaro, K., & Saddler, B. (2009). Effects of planning instruction on a young writer with Asperger syndrome. *Intervention in School and Clinic, 44*, 268-275.

Asaro-Saddler, K., & Saddler, B. (2010). Planning instruction and self-regulation training: Effects on writers with autism spectrum disorders. *Exceptional Children, 77,* 107–124.

Asaro-Saddler, K., & Bak, N. (2012). Teaching children with high-functioning autism spectrum disorders to write persuasive essays. *Topics in Language Disorders, 32*, 361-378.

Asaro-Saddler, K. (2014). Self-Regulated Strategy Development: Effects on Writers with Autism Spectrum Disorders. *Education And Training In Autism And Developmental Disabilities*, *49*(1), 78-91.

Asaro-Saddler, K., & Bak, N. (2014). Persuasive Writing and Self-Regulation Training for Writers with Autism Spectrum Disorders.*Journal of Special Education*, *48*(2), 92-105.

Basil, C., & Reyes, S. (2003). Acquisition of literacy skills by children with severe disability. *Child Language Teaching and Therapy, 19*, 27-49.

Bedrosian, J., Lasker, J., Speidel, K., & Politsch, A. (2003). Enhancing the written narrative skills of AAC students with autism: Evidence-based research issues.*Topics in Language Disorders, 23*, 305-324.

Delano, M. E. (2007a). Improving written language performance of adolescents with Asperger syndrome. *Journal of Applied Behavior Analysis, 40*, 345-351.

Delano, M. E. (2007b). Use of strategy instruction to improve the story writing skills of a   student with Asperger syndrome. *Focus on Autism and Other Developmental Disabilities, 22*, 252-258.

Gersten, R., Fuchs, L. S., Compton, D., Coyne, M., Greenwood, C., & Innocenti, M. S. (2005). Quality indicators for group experimental research and quasi-experimental research in special education. *Exceptional Children, 71*, 149-164.

Hayes, J.R., & Flower, L.S. (1980). Identifying the organization of writing processes. In L. Gregg & E. Steinberg (Eds.), Cognitive processes in writing: An interdisciplinary approach (pp. 3-30). Hillsdale, NJ: Erlbaum.

Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005.) The use of single-subject research to identify evidence-based practices in special education. *Exceptional Children, 71*, 165–179.

Pennington, R. C., Ault, M. J., Schuster, J. W., & Sanders, A. (2011). Using Simultaneous Prompting and Computer-Assisted Instruction to Teach Story Writing to Students with Autism. *Assistive Technology Outcomes And Benefits*, *7*(1), 24-38.

Pennington, R. C., Stenhoff, D. M., Gibson, J., & Ballou, K. (2012). Using Simultaneous   Prompting to Teach Computer-based Story Writing to a Student with Autism. *Education & Treatment of Children*, *35*(3), 389-406.

Pennington, R. C., Collins, B. C., Stenhoff, D. M., Turner, K., & Gunselman, K. (2014). Using Simultaneous Prompting and Computer-Assisted Instruction to Teach Narrative Writing Skills to Students with Autism. *Education And Training In Autism And Developmental Disabilities*, *49*(3), 396-414.

Schneider, A. B., Codding, R. S., & Tryon, G. S. (2013). Comparing and Combining Accommodation and Remediation Interventions to Improve the Written-Language   Performance of Children with Asperger Syndrome. *Focus On Autism And Other Developmental Disabilities*, *28*(2), 101-114.

Yamamoto, J., & Miya, T. (1999). Acquisition and transfer of sentence construction in autistic students: Analysis of computer-based teaching. *Research In Developmental Disabilities*, *20*(5), 355-377. doi:10.1016/S0891-4222(99)00017-7