This exhibit contains a list of citations for publications involving graduate students followed by the first page from a sample of entries. Graduate Student names are **underlined and bold**

Peer-Reviewed Research Publications with Graduate Student Co-Authors

El Zien, F., Solis, M., Lang, R., & Kim, M. K. (Accepted 2014; available early online). Embedding perseverative interest of a child with autism in text may result in improved reading comprehension: A pilot study. *Developmental Neurorehabilitation,* early online, 1-5.

Ledbetter-Cho, K., Lang, R., Davenport, K., Moore, M., Lee, A., O'Reilly, M., Watkins, L., & Falcomata, T. (accepted 2015). Behavioral skills training to improve the abduction-prevention skills of children with autism. *Behavior Analysis in Practice.* [Received Research Poster Award at Texas Association of Behavior Analysis Conference]

Ledbetter-Cho, K., Lang, R., Davenport, K., Moore, M., Lee, A., **Howell, A., Drew, C., Dawson, D.,** Charlop, M. H., Falcomata, T., & O'Reilly, M. (2015). Effects of script training on the peer-to-peer communication of children with autism spectrum disorder. *Journal of Applied Behavior Analysis, 48,* 1-15.

Lee, A., Lang, R., Davenport, K., Moore, M., Rispoli, M., van der Meer, L**., Carnett, A., Raulston, T., Tostanoski, A., & Chung, C**. (2015). Comparison of therapist implemented and iPad-assisted interventions for children with autism. *Developmental Neurorehabilitation, 18,* 97-103.

Carnett, A., Raulston, T., Lang, R., **Tostanoski, A., Lee, A**., Sigafoos, J., & Machalicek, W. (2014). Effects of a perseverative interest-based token economy on challenging and on-task behavior in a child with autism. *Journal of Behavioral Education, 23,* 368-377.

Tostanoski, A., Lang, R., **Raulston, T., Carnett, A**., & Davis, T. (2014). Voices from the past: Comparing the rapid prompting method and facilitated communication. *Developmental Neurorehabilitation, 17,* 219-223.

Ninci, J., Lang, R., Davenport, K., **Lee, A., Garner, J.,** Moore, M., Boutot, E., Rispoli, M., & Lancioni, G.E. (2013). An analysis of the generalization and maintenance of eye contact taught during play. *Developmental Neurorehabilitation, 16,* 301-307.

Raulston, T. Carnett, A., Lang, R. **Tostanoski, A., Lee, A**., Machalicek, W., Sigafoos, J., O'Reilly, M., & Didden, R. (2013). Teaching individuals with autism spectrum disorder to ask questions: A systematic review. *Research in Autism Spectrum Disorders, 7,* 866-878.

Kuriakose, S., Lang, R., Boyer, K., **Lee, A.,** & Lancioni, G. (2012). Rehabilitation issues in Landau-Kleffner Syndrome. *Developmental Neurorehabilitation, 15,* 317-321.

O'Reilly, M., Fragale, C., Gainey, S., Kang, S., Koch, H., Shubert, J.**, El Zein, F.,** Longino, D., Chung, M., Xu, Z., White, P., Lang, R., Davis, T., Rispoli, M., Lancioni, G., Didden, R.,

O'Reilly, M., Fragale, C., Gainey, S., Kang, S., Koch, H., Shubert, J., **El Zein, F.,** Longino, D., Chung, M., Xu, Z., White, P., Lang, R., Davis, T., Rispoli, M., Lancioni, G., Didden, R., Healy, O., Kagohara, D., van der Meer, L., & Sigafoos, J. (2012). Examination of an antecedent communication intervention to reduce tangibly maintained challenging behavior: A controlled analog analysis. *Research in Developmental Disabilities, 33,* 1462-1468.

Ramdoss, S., Lang, R., Fragale, C., **Britt, C.**, O'Reilly, M., Sigafoos, J., Didden, R., Palmen, A., & Lancioni, G. E. (2012). Use of computer-based interventions to promote daily living skills in individuals with intellectual disabilities: A systematic review. *Journal of Developmental and Physical Disabilities, 24,* 197-215.

Lang, R., Kuriakose, S., Lyons, G., Mulloy, A., Boutot, A., **Britt, C., Caruthers, S., Ortega, L.,** O'Reilly, M., & Lancioni, G. (2011). Use of school recess time in the education and treatment of children with autism spectrum disorders: A systematic review. *Research in Autism Spectrum Disorders, 5,* 1296-1305.

Lang, R., **Mahoney, R, Zein, E. Z., Delaune, E., & Amidon, M**. (2011). Evidence to practice: Anxiety in autism spectrum disorders. *Neuropsychiatric Disease and Treatment, 7,* 1-4.

Lang, R., Mulloy, A., Giesbers, S., **Pfeiffer, B., Delaune, E.**, Didden, R., Sigafoos, J., Lancioni, G., & O'Reilly, M. (2011). Behavioral interventions for rumination and operant vomiting in individuals with intellectual disabilities: A systematic review. *Research in Developmental Disabilities, 32,* 2193-2205.

Lang, R., Rispoli, M., Sigafoos, J., Lancioni, G., Andrews, A., & **Ortega, L.** (2011). Effects of language of instruction on response accuracy and challenging behavior in a child with autism. *Journal of Behavioral Education, 4,* 252-259.

Ramdoss, S., Mulloy, A., Lang, R., O'Reilly, M., Sigafoos, J., Lancioni, G., Didden, R., & **El Zein, F**. (2011). Use of computer-based interventions to improve literacy skills in students with autism spectrum disorders: A systematic review. *Research in Autism Spectrum Disorders, 5,* 1306-1318.

Book Chapters with Graduate Student Co-Authors

Hancock, T., **Ledbetter-Cho, K.,** Lang, R., & **Howell, A**. (2016). Enhanced milieu teaching. In. R. Lang, T. Hancock & N. N. Singh (Eds.), *Evidenced-based Practice in Early Intervention for Children with Autism.* New York, NY: Springer.

Lang, R., Ramdoss, S., **Raulston, T., Carnet, A.,** Sigafoos, J., Didden, R., Moore, D., & O'Reilly, M. (2014). Assistive technology for people with autism spectrum disorders. In G. E. Lancioni & N. N. Singh (Eds.), *Assistive Technology for People with Diverse Abilities.* (pp. 157-191). New York: Springer.

Lang, R., Ramdoss, S., Sigafoos, J., Green, V., van der Meer, L.**, Tostanoski, A.**, **Lee, A.**, & O'Reilly, M. (2014). Assistive technology for postsecondary students with disabilities. In G. E. Lancioni & N. N. Singh (Eds*.), Assistive Technology for People with Diverse Abilities*. (pp. 53-76). New York: Springer.

Lang, R., Sigafoos, J., van der Meer, L., **Carnett, A.,** Green, V. A., Lancioni, G. E., & O'Reilly, M. F. (2014). Teaching functional communication to adults with autism spectrum disorders. In M. Tincani & A.

O'Reilly, M., Green, V., Sigafoos, J, Lancioni, G., Lang, R., Fragale, T., **El Zein, F**., Cannella, H., & Edrisinha, C. (2013). Working with students with intellectual disabilities who engage in severe challenging behavior. In C. Franklin, M. Harris, & P. Allen-Meares (Eds.), *The school services sourcebook* (2nd ed.) (pp. 229-236). Oxford: University Press Bondy (Eds.), *Adults with Autism Spectrum Disorders: Evidenced-Based and Promising Practices*. (pp. 118-139). New York: Guilford Press.

Structured Abstracts and Reports with Graduate Student Co-Authors

Amidon, M., Lang, R., & Regester, A. (2014). Adult Aspergers Assessment. In C. Reynolds, K. Vannest & E. Fletcher-Jensen (Ed), *Encyclopedia of Special Education: A reference for the education of children, adolescents, and adults with disabilities and other exceptional individuals* (4thrd ed.).

Britt, C., Pfeiffer, B., Lang, R., & **Caruthers, S.** (2014). Self-stimulation. In C. Reynolds, K. Vannest & E. Fletcher-Jensen (Ed), *Encyclopedia of Special Education: A reference for the education of children, adolescents, and adults with disabilities and other exceptional individuals* (4th ed.). Hoboken, NJ: John Wiley & Sons.

Howell, A. G., Ninci, J., & Lang, R. (2015). Behavioral intervention for infants with Down syndrome improved spoken imitation and requesting skills but improvements in speech intelligibility, problem solving, and nonverbal communication should be considered with caution. [Abstract]. *Evidence Based Communication Assessment and Intervention, 8,* 171-177. Abstract of Bauer, S. M., & Jones, E. A. (2014). Requesting and verbal imitation intervention for infants with Down syndrome: Generalization, intelligibility, and problem solving. *Journal of Developmental and Physical Disabilities, 27,* 37–66.

Lang, R., **Tostanoski, A**., Travers, J., & Todd, J. (2014). The only study investigating the rapid prompting method has serious methodological flaws but data suggest the most likely outcomes is prompt dependency. [Abstract]. *Evidence Based Communication Assessment and Intervention.* Abstract of Chen, G. M., Yoder, K. J., Ganzel, B. L., Goodwin, M. S., & Belmonte, M. K. (2012). Harnessing repetitive behaviours to engage attention and learning in a novel therapy for autism: an exploratory analysis. *Frontiers in Psychology, 3,* 1-16.

Lang, R., **Bernard, L**., & Weiner, K. (2014). Stereotypy. In C. Reynolds, K. Vannest & E. Fletcher-Jensen (Ed), *Encyclopedia of Special Education: A reference for the education of children, adolescents, and adults with disabilities and other exceptional individuals* (4th[rd] ed.). Hoboken, NJ: John Wiley & Sons.

Lang, R., **El Zein, F**., & **Pfeiffer, B**. (2014). Autism. In C. Reynolds, K. Vannest & E. Fletcher-Jensen (Ed), *Encyclopedia of Special Education: A reference for the education of children, adolescents, and adults with disabilities and other exceptional individuals* (4th[rd] ed.). Hoboken, NJ: John Wiley & Sons.

Lang, R. & **Mahoney, R**. (2014). Research in Autism Spectrum Disorders. In C. Reynolds, K. Vannest & E. Fletcher-Jensen (Ed), *Encyclopedia of Special Education: A reference for the education of children, adolescents, and adults with disabilities and other exceptional individuals* (4th[rd] ed.). Hoboken, NJ: John Wiley & Sons.

Pfeiffer, B. & Lang, R. (2014 High functioning autism. In C. Reynolds, K. Vannest & E. Fletcher-Jensen (Ed), *Encyclopedia of Special Education: A reference for the education of children, adolescents, and adults with disabilities and other exceptional individuals* (4th[rd] ed.). Hoboken, NJ: John Wiley & Sons.

Pullen, N., Raulston, T. J., Lang, R., & Wendt, O. (2015). A modified preschool life skills program focused on teaching functional communication and self-control resulted in acquisition of requesting skills and the prevention of problem behavior in small groups of preschool children [Abstract]. *Evidence Based Communication Assessment and Intervention.* Abstract of Luczynski, K. C., & Hanley, G. P. (2013), Prevention of problem behavior by teaching functional communication and self-control skills to preschoolers. *Journal of Applied Behavior Analysis*, 46: 355–368.

Conference Presentations with Graduate Student Co-Presenters

Drew, C., Machalicek, W., & Lang, R. (2016). Behavioral treatment of trichotillomania in people with developmental disability. Poster at the Association of Behavior Analysis International 42nd Annual Conference, Chicago, IL. May.

Hancock, T. B., **Ledbetter-Cho, K., Murphy, C**., & Lang, R. (2016). Responsive interaction parent training: An effort toward an effective and more efficient state-funded early intervention service for families and their children with ASD. Oral Paper Presentation at the Texas Autism Research Conference, Austin, TX, June 14-15.

Hancock, T. B., **Ledbetter-Cho, K., Murphy, C.,** & Lang, R. (2016). Responsive interaction parent training. In M. Rispoli (chair) Treatment Integrity in Behavioral Interventions Symposium at Association of Behavior Analysis International 42nd Annual Conference, Chicago, IL. May.

Ledbetter-Cho, K., Davenport, K., Lang, R., Moore, M., Lee, A., O'Reilly, M., Watkins, L., & Falcomata, T. (2016). Effects of behavioral skills training and in situ feedback on the

abduction prevention skills of children with autism. In J. Chan (Chair) Recent Advances in Health, Recreation and Safety Interventions for Individuals with Developmental Disabilities Symposium at Association of Behavior Analysis International 42nd Annual Conference, Chicago, IL. May.

Ledbetter-Cho, K., Lang, R., Davenport, K., Moore, M., Lee, A., **Howell, A., Drew, C., Dawson, D.**, Charlop, M., Falcomata, T., & O'Reilly, M. (2016). Effects of script training on the peer-to-peer communication of children with autism. Presentation with Q & A. To be presented for the Council of Exceptional Children's annual conference and expo, St. Louis, MO. April.

Hancock, T. B., **Ledbetter-Cho, K., Murphy, C.**, & Lang, R. (2016). Responsive interaction Parent training via distance education: early outcomes and current obstacles. Poster at the Conference on Research Innovations in Early Intervention. San Diego, CA, February, 25 – 27.

Ledbetter-Cho, K., Lang, R., Davenport, K., Moore, M., Lee, A., O'Reilly, M., Watkins, L., & Falcomata, T. (2016). Behavioral skills training to improve the abduction-prevention skills of children with autism. *Behavior Analysis in Practice*. Poster at the Texas Association of Behavior Analysis Conference. Dallas, Tx. March. [**Received The Research Poster Award**]

Raulston, T., Ramey, D., Carnett, A., Hansen, S., Lang, R., & Machalicek, W. (2016) Incorporating perseverative interests into interventions for individuals with autism spectrum disorder: A systematic review of the literature. Poster session at the Annual Association for Behavior Analysis Autism Conference. New Orleans, LA. January.

Ledbetter-Cho, K., & Lang, R. (2015). Effects of script training on the peer-to-peer communication of children with autism. Invited presentation at The University of Texas' Meadows Center for the Prevention of Educational Risk Autism Research Symposium, Austin, TX. March.b

Ledbetter-Cho, K., Lang, R., Davenport, K., Moore, M., Lee, A., **Howell, A., Drew, C., Dawson, D.**, Charlop, M., Falcomata, T., & O'Reilly, M. (2015). *Effects of script training on the peer-to-peer communication of children with autism*. Poster presented at the annual conference of the Texas Association for Behavior Analysis, Houston, TX, Feb.

Ledbetter-Cho, K., Lang, R., Davenport, K., Moore, M., Lee, A., & Rispoli, M. (2015). Effects of script fading on scripted and novel utterances in conversations between peers with autism. In **R. Lang** (chair) Interventions to improve response in Autism Spectrum Disorder. Symposium at the Association of Behavior Analysis International, San Antonio, TX, May 22-26.

Lang, R., van der Werff, Verbeek, K., Davenport, K., Moore, M., **Lee, A.**, Didden, R. (2014). Assessing preferences for varying forms of attention and the impact on response to attention-based interventions. In M. O'Reilly (chair), Innovations in the assessment and

treatment of autism. Symposium at the European Association of Behavior Analysis International, Stockholm, Sweden, September 10-13.

Raulston, T., Carnett, A., Lang, R., **Lee, A., Tostanoski, A.,** & Sigafoos, J. (2014). Effects of a perseverative interest-based token economy on challenging behavior and on-task behavior of a 7-year old boy with autism. In T. Wagnar (chair), Investigation of interventions targeting and utilizing repetitive behaviors and interests among individuals with developmental disabilities. Symposium at The Association of Behavior Analysis International, Chicago, IL, May 23-27.

Lang, R., van der Werff, Verbeek, K., Davenport, K., Moore, M., **Lee, A.**, Didden, R. (2014). Assessing preferences for varying forms of attention and the impact on response to attention-based interventions. In M. O'Reilly (chair), Innovations in the assessment and treatment of autism. Symposium at The Association of Behavior Analysis International, Chicago, IL, May 23-27.

Machalicek,W., Lang, R., Knowles, C, **Raulston, T**, Ruppert, T, & Gerow, S. (2014). Parent involvement in intervention for children with intellectual and developmental disabilities: A review of reviews. American Association of Intellectual and Developmental Disabilities' 138th Annual Meeting. June 23-26. Orlando, FL.

Ninci, J., Boutot, A., & Lang, R. (2013). Increasing eye contact with a young child with autism during play. Poster presented at the 14th International Division of Autism and Developmental Disability Conference. Kona, HA, January 23-25.

Raulston, T., Carnett, A., Lang, R., **Tostanoski, A., & Lee, A**. (2013). Teaching individuals with autism to ask questions: A systematic review. Poster presented at Association of Behavior Analysis International Autism Conference. Portland, OR, January 25-27.

Britt, C., Davenport, K., **Ninci, J.,** & Lang, R. (2012). Functional analysis and treatment of attention maintained bruxism. Poster presented at the 38th Annual Conference for the Association of Behavior Analysis. Seattle, WA, May 25 – 29.

Davenport, K., Lang, R., **Ninci, J. M., Britt, C**., & Rispoli, M. J. (2012). Pairing perseverative interests with age-appropriate toys to increase manding in a young child with autism. In M. Lanovaz (Chair). Direct and Collateral Effects of Interventions for Stereotyped and Repetitive Patterns of Behavior and Interests. Symposium at the 38th Annual Conference for the Association of Behavior Analysis. Seattle, WA, May 25 – 29.

Davenport, K., **Ninci, J., Britt, C.,** Moore, M., Lang, R., & Rispoli, M. (2012). Pairing perseverative interests with age- appropriate toys to increase manding in a young child with autism. Poster presented at the Texas Association for Behavior Analysis Annual Conference, Austin, TX, February, 17-18.

El Zein, F., O'Reilly, M., & Lang, R. (2012). Perseverative interests and reading comprehension performance in elementary students with autism spectrum disorders. Poster presented at

the Sao Paulo School for Advanced Science: Advances in Research and Treatment of Autistic Behavior. Sao Carlos, Brazil, January 9-13.

Garner, J., Ninci, J., Lee, A., Davenport, K., & Lang, R. (2012). Inclusion and students with autism spectrum disorder, Texas Council for Exceptional Children Conference, San Antonio, TX, June 28 - 30.

Garner, J., Ninci, J., & Lang, R. (2012). Functional analysis and treatment of diurnal bruxism. Poster presented at the Council for Exceptional Children Texas Conference. San Antonio, TX, June 28-30.

Lang, R., Layton, C., Windham, B., Rispoli, M. J., **Bernard, L., Britt, C.,** & Davenport, K. (2012). Behavioral intervention to improve the generalization and diversity of play skills in children with autism. In M. O'Reilly (Chair). Advances in the Understanding and Treatment of Autism Spectrum Disorders. Symposium at the 38th Annual Conference for the Association of Behavior Analysis. Seattle, WA, May 25 –29.

Lee, A., Garner, J., & Lang, R. (2012). Pairing perseverative interests with age-appropriate toys to increase a manding repertoire. Poster presented at the Council for Exceptional Children Texas Conference. San Antonio, TX, June 28-30.

Lee, A., Lang, R., Davenport, K., Moore, M., **Carnett, A., Raulston, T., Tostanoski, A., Henry, S., & Chung, C.** (2012). Comparison of teacher-implemented and iPad-assisted academic instruction for students with autism spectrum disorder, Developmental Neurorehabilitation Conference, Jasper Alberta, Canada, December.

Ninci, J., Davenport, K., Lang, R., & Rispoli, M. J. (2012). An intervention to increase eye contact during manding. Poster presented at the 38th Annual Conference for the Association of Behavior Analysis. Seattle, WA May 25 –29.

Ninci, J., Davenport, K., **Lee, A., Garner, J.** Moore, M., & Lang, R. (2012). Increasing eye contact during manding sessions. Poster presented at the Texas Association for Behavior Analysis Annual Conference, Austin, Texas, February 17-18.

Ninci, J., & Lang, R. (2012). Functional analysis and treatment of diurnal bruxism. Poster presented at the Texas Autism Research Conference. Austin, TX, July 13-14.

Ninci, J., & Lang, R. (2012). Using an evidence-based treatment package to increase eye contact when manding in a young child with autism. Poster presented at the Texas Autism Research Conference. Austin, TX, July 13-14.

Ninci, J., Lee, A., & Lang, R. (2012). Increasing eye contact during manding. Poster presented at the Council for Exceptional Children Texas Conference. San Antonio, TX, June 28-30.

Ramdoss, S., Longino, D., **Britt, C.,** Lang, R., & O'Reilly, M. (2012). Computer-based interventions to promote daily living skills in individuals with intellectual disabilities: A

systematic Review. Poster presented at the Texas Association for Behavior Analysis Annual Conference, Austin, TX, February 17-18.

El Zein, F., & Lang, R. (2011). Use of perseverative interests to improve reading comprehension in students with autism spectrum disorders. Presentation at the Meadows Center for the Prevention of Educational Risk Invited Research Symposium. Austin, TX, April, 29.

El Zein, F. Lang, R., & Rispoli, M. (2011). Perseverative interests and reading comprehension performance in elementary students with autism spectrum disorders. Texas Autism Research Conference, Austin TX, July 30.

Lang, R., Ortega, L., Caruthers, S., & Pfeiffer, B. (2011). The Influence of language on the functional analysis and treatment of an English language learner with autism. Poster presented at the Annual Conference for the Texas Association of Behavior Analysis. Galveston, TX, February 25-27.

Lang, R., Zein, F. E., Britt, C., & Bernard, L., (2011). Behavioral intervention to treat selective mutism across multiple social situations and community settings. Poster presented at the Annual Conference for the Texas Association of Behavior Analysis. Galveston, TX, February 25-27.

EFFECTS OF SCRIPT TRAINING ON THE PEER-TO-PEER COMMUNICATION OF CHILDREN WITH AUTISM SPECTRUM DISORDER

KATHERINE LEDBETTER-CHO, RUSSELL LANG, KATY DAVENPORT, MELISSA MOORE, ALLYSON LEE, ALEXANDRIA HOWELL, CHRISTINE DREW, AND DANA DAWSON

CLINIC FOR AUTISM RESEARCH EVALUATION AND SUPPORT TEXAS STATE UNIVERSITY SAN MARCOS

MARJORIE H. CHARLOP

CLAREMONT MCKENNA COLLEGE

AND

TERRY FALCOMATA AND MARK O'REILLY

UNIVERSITY OF TEXAS AT AUSTIN AND THE MEADOWS CENTER FOR PREVENTING EDUCATIONAL RISK

A multiple baseline design across participants was used to demonstrate the effects of a script-training procedure on the peer-to-peer communication of 3 children with autism spectrum disorder during group play with peers. Both scripted and unscripted initiations as well as responses to peers increased for all 3 participants. Stimulus generalization across novel toys, settings, and peers was observed. Novel unscripted initiations, responses, and appropriate changes in topics during peer-to-peer exchanges were analyzed by considering the cumulative frequency of these behaviors across phases of the study. Treatment gains were maintained during 4-week follow-up sessions. Results are discussed in terms of recommendations for practitioners, response variability, and potential future avenues of research.

Key words: autism, communication, scripts, script training, novel utterances

Individuals with autism spectrum disorder (ASD) present with a wide range of deficits in communication and social interaction (American Psychiatric Association, 2013). In some cases, individuals with ASD do not develop functional speech (Eigsti, de Marchena, Schuh, & Kelley, 2011; Rispoli, Franco, van der Meer, Lang, & Camargo, 2010). However, even among those who do acquire speech, some still struggle to communicate with peers, use speech for purposes other than requesting or rejecting, or initiate and maintain conversations (Krantz, Ramsland, & McClannahan, 1989). These deficits can increase the risk of problem behavior, social isolation, and academic failure (Lang,

Regester, Rispoli, & Camargo, 2010). Not surprisingly, practitioners and parents often identify communication as a high treatment priority (e.g., Lang, Machalicek, Rispoli, & Regester, 2009; Pituch et al., 2011).

One research-based intervention option for addressing deficits in communication in children with ASD is script training (e.g., Krantz & McClannahan, 1993). Scripts provide a model of appropriate language tailored for specific social situations. Children read (or listen to) the scripts and recite them aloud to communication partners. After improvements in communication are observed, the script is gradually faded to promote independent communication. Scripts can be presented through audio recordings, written on paper, or accessed via technology (e.g., Charlop-Christy & Kelso, 2003; Raulston et al., 2013). Script training can increase the

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HISTORICAL ARTICLE

Voices from the past: Comparing the rapid prompting method and facilitated communication

AMY TOSTANOSKI[1], RUSSELL LANG[1,2], TRACY RAULSTON[1], AMARIE CARNETT[1], & TONYA DAVIS[3]

[1]*Clinic for Autism Research Evaluation and Support, Texas State University-San Marcos, San Marcos, TX, USA,*
[2]*Department of Curriculum and Instruction, Texas State University-San Marcos, San Marcos, TX, USA, and*
[3]*Department of Educational Psychology, Baylor University, Waco, TX, USA*

Abstract
Objective: This article briefly reviews the history and damage caused by facilitated communication (FC) and highlights the parallels between FC and the Rapid Prompting Method (RPM).
Background: FC involves a therapist (or facilitator) supporting the hand of a person with autism while a message is typed on a letter board. FC is widely acknowledged to be a pseudoscientific, unsafe, and unethical treatment for people with autism. RPM is a more recent intervention for people with autism that involves the facilitator holding and moving the letter board while the individual with autism moves their own hand. Those who espouse the perceived benefits of FC and RPM make strikingly similar claims of hidden intelligence and extraordinary communication abilities in people with autism following treatment.
Conclusion: Clients, proponents, and practitioners of RPM should demand scientific validation of RPM in order to ensure the safety of people with disabilities that are involved with RPM.

Keywords: *Rapid Prompting Method, facilitated communication, intervention, communication, autism, pseudoscience*

> Extraordinary claims require extraordinary evidence. – Carl Sagan

Introduction

People with autism, along with their families and the practitioners and researchers working with them frequently must endure the rise of a new treatment that, in the absence of scientific research, claims to have amazing and unprecedented benefits. Facilitated communication (FC) is one notorious example of this recurring pattern. Proponents of FC described individuals with autism as having extraordinary hidden communication capabilities that can be unlocked when a therapist (referred to as a facilitator) merely supports the hand or wrist so that a person with autism can type a message on a stationary letter board or keyboard [1]. The Rapid Prompting Method (RPM) is a more recent intervention for people with autism that involves the facilitator holding and moving the letter board while the individual with autism moves their own hand. Strikingly similar to the claims made by advocates of FC, those who espouse RPM claim that RPM is "the most direct and unlimited path to learning and communicating" [2]. Herein we argue that RPM and FC are so similar that the devastating and horrific consequences of FC are likely to occur with RPM. The purpose of this article is to briefly review the sordid history of FC and highlight the parallels between FC and RPM in an effort to elucidate the potentially harmful effects of RPM.

Review

Teaching individuals with autism spectrum disorder to ask questions: A systematic review

CrossMark

Tracy Raulston[a], Amarie Carnett[a], Russell Lang[a,b,*], Amy Tostanoski[a], Allyson Lee[a], Wendy Machalicek[c], Jeff Sigafoos[d], Mark F. O'Reilly[b], Robert Didden[e], Giulio E. Lancioni[f]

[a] Clinic for Autism Research Evaluation and Support at Texas State University-San Marcos, United States
[b] Meadows Center for the Prevention of Educational Risk at The University of Texas at Austin, United States
[c] University of Oregon, United States
[d] Victoria University of Wellington, New Zealand
[e] Radboud University Nijmegen, The Netherlands
[f] University of Bari, Italy

ARTICLE INFO

ABSTRACT

This review involved a systematic search and analysis of studies aimed at teaching individuals with autism spectrum disorder (ASD) to ask questions (i.e., teaching mands for information). A systematic search of databases, reference lists, and journals identified 21 studies that met predetermined inclusion criteria. Included studies were then summarized in terms of (a) participant characteristics, (b) dependent variables (e.g., types of question-asking skills that were taught), (c) intervention procedures, (d) research designs, and (e) outcomes. All 21 studies reported that participants acquired or improved in the targeted question-asking skills. The most common intervention components included (a) echoic prompts and systematic fading procedures (e.g., time delay), (b) positive reinforcement via provision of requested information and/or access to preferred items or activities, and (c) contriving situations to motivate specific questions (i.e., creating establishing operations). Implications for practitioners and directions for future research are discussed.

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Contents

* Corresponding author at: 601 University Drive, San Marcos, TX 78666, United States.
  E-mail address: russlang@txstate.edu (R. Lang).

DEVELOPMENTAL NEUROREHABILITATION

informa healthcare

Embedding perseverative interest of a child with autism in text may result in improved reading comprehension: A pilot study

Farah El Zein[1,2], Michael Solis[2,3], Russell Lang[2,4], & Min Kyung Kim[1,2]

[1]College of Education, The University of Texas at Austin, Austin, TX, USA, [2]The Meadows Center for Preventing Educational Risk, Austin, TX, USA, [3]Curry School of Education, The University of Virginia, Charlottesville, VA, USA, and [4]Clinic for Autism Research Evaluation and Support, Texas State University, San Marcos, TX, USA

Abstract

Objective: We investigated the effects of embedding the perseverative interest (PI) of a child with autism (i.e. cars) within texts on reading comprehension. *Methods*: A PI text condition (text altered to include cars) was compared with a non-PI text condition (same story without cars inserted) in an alternating treatment design. Dependent variables were responses to reading comprehension questions and number of words uttered during an oral retell (i.e. curriculum-based measures [CBMs]). The reading level, instructional routines, and therapist where held constant across the randomly alternated conditions. *Results*: Both CBMs suggested that reading comprehension was enhanced when the story included the child's PI. *Conclusions*: These preliminary findings suggest that embedding the PIs of students with autism spectrum disorder within readings may result in more accurate responses to reading comprehension questions and more detailed oral retelling. These findings are discussed in terms of potential directions for future research.

Intervention research for people with autism spectrum disorders (ASD) has primarily focused on reducing problem behavior, teaching self-help skills and improving communication [1–4]. However, as the number of children identified with ASD continues to increase [5], so do the demands placed on schools to provide effective academic instruction for this population [6]. Reading is a fundamental academic skill and a major priority for students during elementary school. Previous research suggests that children with ASD may not benefit from existing reading interventions to the same extent as other students [7–9], Al Otaiba and Fuchs [10] reported rates of nonresponse to these interventions as high as 50% for students identified with low-incidence disabilities, including ASD. This nonresponsiveness may be due, in part, to the unique reading profiles presented by some students with ASD. Specifically, students with ASD may be able to say the correct words when shown text, but they may not be able to demonstrate comprehension of those words [11–18]. This deficit in reading comprehension is reported even when students with ASD are compared with IQ-matched students with other intellectual or developmental disabilities [16].

Despite the growing number of students with ASD in schools and the deficits in reading associated with ASD, a recent review of reading comprehension interventions for students with ASD identified only 12 studies published between 1980 and 2012, only 9 of which utilized an experimental design [6]. Interventions identified in that review included strategy instruction [19–21], explicit instruction [22–24], and anaphoric cueing [17, 25]. The review's findings suggest that these approaches may also improve reading comprehension for students with ASD, albeit perhaps to a lesser extent [10]. The aforementioned reading interventions were initially created to address reading deficits in students with learning disabilities, and modifications to these interventions specific to the characteristics inherent to an ASD diagnosis have not been evaluated. Additionally, the overall evidence-base involving reading interventions for students with ASD must be considered sparse given the limited number of studies and the limitations present in several of those studies [6].

The National Autism Center's National Standards Project identified treatments based on the science of applied behavior analysis (ABA) as having the strongest evidence base [26]. ABA-based interventions include antecedent strategies (i.e. modification of events that occur before targeted behavior) designed to increase a person's motivation to engage in learning tasks [27]. One approach to improving motivation during academic instruction involves modifying tasks to incorporate the idiosyncratic interests and preferences of the student [28–30]. Embedding the obsessions and/or perseverative interests (PIs), which are inherent to the diagnosis of ASD within intervention materials and procedures has been shown to be effective in increasing task engagement [31–33], correct responding [34, 35], and overall productivity [36–38]. Odom et al. [39] examined intervention studies involving students with ASD and reported that incorporating students' interests within learning tasks to be a promising educational

Correspondence: Farah El Zein, College of Education, The University of Texas at Austin, SZB 308, 1 University Station D4900, Austin, TX 78712, USA. Tel: (512) 232 2320. Fax: (512) 232 2322. E-mail: zein_farah@hotmail.com