



# NTACT

National Technical Assistance Center on Transition

## **Secondary Practices, Predictors, and Postsecondary Outcomes for Individuals with Autism Spectrum Disorder Annotated Bibliography**

### **Introduction to Annotated Bibliography**

Transition planning and post-school outcomes for students with autism spectrum disorder (ASD) continue to receive growing attention in both practice and research. The purpose of this annotated bibliography is to summarize relevant research on practices and predictors of post-school success for individuals with ASD and to provide practitioners, families, special education professionals, and researchers information on current literature related to what may improve the post-school outcomes of this population.

### **Executive Summary of Annotated Bibliography**

For many youth with ASD the transition from school services to adulthood can be a particularly difficult time. While some youth with ASD are successful, many are faced with significant obstacles in multiple areas as they attempt to negotiate their way into college, work, and the community. Given the diverse characteristics of individuals with ASD, it is essential that professionals carefully plan for the transition to adulthood and provide a wide range of services and supports that are individualized and data driven. There is a critical need to assess what we currently know about this population's transition to adulthood.

This annotated bibliography includes articles from 1985 to 2018 and is divided into three major sections. The first two sections include summaries of studies involving secondary transition practices and predictors (the how-to strategies). Practices are micro level focused on specific interventions, strategies, or curriculum implemented with students to assist them in developing the skills to be successful adults. Predictors are macro level variables that influence systems, programs, and general practices and skills students need to be successful after high school. The third section summarizes research that gathered post-school outcome information on students with ASD.

From the *Secondary Transition Practices and Secondary Transition Predictors* sections, the majority of available research informs practice regarding student development practices (i.e., practices including assessment, academic skills, life/social/emotional skills, employment and occupational skills, student supports, and

instructional context; *Taxonomy for Transition Programming 2.0*). Fifty-five experimental student development studies were summarized for this category of which more than half included population samples of only participants with ASD. In addition, the majority of academic student development studies included mixed sample populations. Student-focused planning studies include seven experimental practices of which two studies included populations samples of only students with ASD. Interagency collaboration (n=2) and family engagement (n=2) studies had limited experimental research regarding practices for students with ASD. Regarding predictor studies, only two included population samples of solely students with ASD (i.e., Chiang, Cheung, Hickson, Xiang, & Tsi, 2013; Chiang, Cheung, Li, & Tsai, 2012).

From the *Post-School Outcomes* section, the majority of studies explore post-school outcomes across multiple categories (e.g., education, employment, independent living). Published from 2000 to 2018, there are 14 quantitative non-experimental studies that report results across more than one outcome (i.e., employment, education, or independent living). Additional quantitative, non-experimental studies (n=5) address outcomes in the employment category.

#### References

- Chiang, H.M., Cheung, Y. K., Hickson, L., Xiang, R., & Tsai, L.Y. (2012). Predictive factors of participation in postsecondary education for high school leavers with autism. *Journal of Autism and Developmental Disorders, 42*, 685–696. doi: 10.1007/s10803-011-1297-7
- Chiang, H.M., Cheung, Y. K., Li, H., & Tsai, L. Y. (2013). Factors associated with participation in employment for high school leavers with autism. *Journal of Autism and Developmental Disorders, 43*, 1832–1842. doi: 10.1007/s10803-012-1734-2
- Kohler, P. D., & Gothberg, J. E., Fowler, C., and Coyle, J. (2016). *Taxonomy for transition Programming 2.0: A model for planning, organizing, and evaluating transition education, services, and programs*. Western Michigan University. Available at [www.transitionta.org](http://www.transitionta.org).

# Secondary Transition Practices

## Introduction

Information in this section is provided for secondary practices. Practices are micro level focused on specific interventions, strategies, or curriculum implemented with students to assist them in developing the skills to be successful adults. References are in reverse chronological order starting with the most recent ones and the type of experimental design is noted in parenthesis after each citation.

**Anderson, C., Lupfer, A., & Shattuck, P. T. (2018). Barriers to receipt of services for young adults with autism. *Pediatrics*, 141 (Supplement 4), S300-S305. (Descriptive)**

Purpose:

- to explore the experiences of families of young adults with ASD to better understand factors leading to poor outcomes

Participants:

- twenty families of young adults with ASD (who had completed high school in the past 15 years) took part in 90-minute interviews.
- of the young adults with ASD, 8% had an ID and 7% were on a certificate track.

Results:

- indicated families felt public schools made limited effort to prepare the young adults for transition.
- regarding post-high school systems, families felt they were not prepared to handle the diverse complexities of ASD.

Implications:

- results suggest only those young adults with ID and the mildest of behaviors find suitable services (perhaps because they fit best into a preexisting mold)

**Bambara, L. M., Cole, C. L., Chovanes, J., Telesford, A., Thomas, A., Tsai, S. C., ... & Bilgili, I. (2018). Improving the assertive conversational skills of adolescents with autism spectrum disorder in a natural context. *Research in Autism Spectrum Disorders*, 48, 1-16. doi: 10.1016/j.rasd.2018.01.002 (Experimental)**

Purpose:

- to replicate and extend Bambara et al. (2016) to measure the effectiveness of PMI on the conversational assertiveness of high school students with ASD.
- specifically evaluated unprompted conversation acts and revised definitions of target conversation acts in order to specifically measure topic change and topic related responses. (Experimental)
- also measured peer conversation acts and fading written text cues for initiations and streamlined peer training.

Participants:

- four high school students with ASD ages 14-20 years old with extensive support needs.

Design:

- Non-concurrent multiple baseline design

Results:

- indicated a functional relation for all participants between the PMI and more active contributions to conversations in the form of initiations and follow-up questions, participation in more conversational acts, and engagement in longer on-topic discussions with trained peers.

Implications:

- This study provides additional support that PMI can be structured to produce positive changes in the conversational skills of youth with ASD in natural social contexts.

**Flowers, C., Test, D. W., Povenmire-Kirk, T. C., Diegelmann, K. M., Bunch-Crump, K. R., Kemp-Inman, A., & Goodnight, C. I. (2018). A demonstration model of interagency collaboration for students with disabilities: A multilevel approach. *The Journal of Special Education, 51*, 211-221. doi: 10.1177/0022466917720764 (Experimental)**

Purpose:

- to examine the impact of CIRCLES (a transition-planning service delivery model designed to guide schools in implementing interagency collaboration) on students' self-determination and participation in IEP meetings.

Participants:

- Forty-five students with ASD (grades 10<sup>th</sup> - 12<sup>th</sup>) were included in the treatment group.

Results:

- HLM analyses tested the differential effect of CIRCLES and BAU conditions.
- The sample size, means, and standard deviations for all outcome measures at both the student and school levels were reported
- Both students and schools in the CIRCLES condition had higher means of self-determination and participation in IEP meetings than the BAU condition.
- Educators reported a higher level of Capacity for students with LD than students with ASD, ID, OHI, and other disabilities.
- Students with ASD in the CIRCLES condition reported similar levels of Opportunity as students with LD, but in the BAU condition, students w/ ASD reported statistically significant lower Opportunity means than students with LD.

**Bross, L. A., & Travers, J. C. (2017). Special interest areas and employment skills programming for secondary students with autism. *TEACHING Exceptional Children, 50*, 74-83. doi: 10.1177/0040059917730846 (Discussion)**

Purpose:

- Teachers of students with ASD have more than likely experienced both the benefits and limitations of special interest areas (SIAs).
- Teachers often develop social skills instruction to teach when talking about a SIA is appropriate.

Implications:

- Connecting SIAs to social and postsecondary employment skills may help teacher advance transition goals.
- A four-step process is suggested to provide school-based opportunities (as a stepping stone toward community-based instruction) aligned with a student's SIA to improve skills necessary for gainful employment before and after high school:
  - Conducting preference assessments
  - Matching school-based opportunities to the SIA
  - Developing a plan to embed instruction
  - Evaluating SIA intervention effects

**Chou, Y. C., Wehmeyer, M. L., Palmer, S. B., & Lee, J. (2017). Comparisons of self-determination among students with autism, intellectual disability, and learning disabilities: A multivariate analysis. *Focus on Autism and Other Developmental Disabilities, 32*, 124-132. doi: 0.1177/1088357615625059 (Causal Comparative)**

Purpose:

- This study analyzed data to see if there were differences across students with ASD, ID, or LD on self-reported levels of self-determination as measured by the Self-Determination Scale (SDS).
- This is the first known study to measure the global self-determination of students with ASD.

Participants:

- Participants included a total of 222 middle and high school students (ages 13 to 22) served under the special education category of ASD, ID, or LD

Design:

- (MANCOVA) was
- Students' gender, age, and ethnicity were used as covariates

Results:

- Multivariate analysis of covariance (conducted for the Autonomy, Self-Regulation, Psychological Empowerment, and Self-Realization SDS sub-scales) showed:
  - students with ASD had significantly lower levels of autonomy (compared to other groups); students with ID had significantly lower levels of self-regulation than students with LD but not significantly different scores than students with ASD; students with ASD and students with ID had significantly lower levels of psychological empowerment than students

with LD; students with ID had significantly lower levels of self-realization than student with LD, but not significantly different scores than student with ASD

- Students with ASD, ID and LD had differing profiles when exploring the 4 domains of self-determination.
- Pairwise comparisons showed students with ASD exhibited lower levels of autonomy when compared with students with LD or ID.

#### Implications:

- The authors pointed out the need to determine predictors or moderating variables that contribute to different levels of SD for students with ASD.

**Duncan, A., Ruble, L. A., Meinzen-Derr, J., Thomas, C., & Stark, L. J. (2017). Citing advance online publication: Preliminary efficacy of a daily living skills intervention for adolescents with high-functioning autism spectrum disorder. *Autism*, doi.org: 10.1177/1362361317716606 (Experimental)**

#### Purpose:

- The purpose of this pilot study was to evaluate the efficacy of Surviving and Thriving in the Real World (STRW) to teach adolescents with high-functioning ASD daily living skills in the areas of personal, domestic/household, and finance.

#### Participants:

- Participants included seven adolescents with high functioning ASD ages 14-18, and their parents

#### Procedures:

- STRW was developed to teach daily living scales to high-functioning adolescents with ASD and their parents using skill acquisition, mastery, and generalization strategies.
  - The intervention was delivered over 12 weeks in 90-minute concurrent adolescent and parent group sessions.
  - STRW targeted morning routines (i.e., hygiene and self-care), kitchen/cooking (i.e., kitchen safety, cooking in the microwave, oven, and stove-top), laundry (i.e., sorting, using the washing machine and dryer, and folding/putting clothes away), and money management (i.e., understanding the cost of items, purchasing items, using a checking/savings account, and budgeting money).

#### Design:

- Feasibility pilot of a 12-week manualized group treatment

#### Results:

- The Vineland Adaptive Behavior Scales, 2<sup>nd</sup> edition and goal attainment scaling were used as outcome measures.
- There was improvement on two Vineland-II subdomains and all goal attainment scaling scores at post-treatment and 6-month follow-up.

**Kellems, R. O., Rickard, T. H., Okray, D. A., Sauer-Sagiv, L., & Washburn, B. (2017). iPad® video prompting to teach young adults with disabilities independent living skills: A maintenance study. *Career Development and Transition for Exceptional Individuals, 43*, 175-184. doi:10.1177/2165143417719078 (Experimental)**

Purpose:

- to determine the effectiveness of video modeling and video prompting delivered through an iPad to teach five daily living skills (i.e., making spaghetti, cleaning the dining room, making macaroni and cheese, cleaning the front porch, cleaning the back porch, cleaning the living room, mailing a letter).

Participants:

- three students ages 19-20 with ASD and mild or moderate intellectual disability

Design:

- Multiple probe across behaviors design

Results:

- indicated a functional relation between video prompting with the iPad® was associated and percentage of steps completed correctly for each identified target task
- All four participants maintained task acquisition without the use of the iPad®.

**Lombardi, A., Izzo, M. V., Gelbar, N., Murray, A., Buck, A., Johnson, V., ... & Kowitt, J. (2017). Leveraging information technology literacy to enhance college and career readiness for secondary students with disabilities. *Journal of Vocational Rehabilitation, 46*, 389-397. (Experimental)**

Purpose:

- to investigate the effects of EnvisionIT (EIT) on the information technology literacy skills for secondary students with disabilities.

Participants:

- 108 secondary students with disabilities in 10<sup>th</sup>-12<sup>th</sup> grade and nine teachers across six high schools in two states.
  - Of the 108 participants, 64 students received the intervention.
  - Students with ASD comprised 22% (n=14) of the participants who received the intervention.
  - Participants in the intervention group were enrolled in a dedicated career or vocational elective course, including both inclusive general education settings and exclusive special education settings.

Procedures:

- EIT, an online transition curriculum intended to facilitate the transition planning process, infuses IT literacy and Common Core State Standards in English Language Arts, both of which are connected to College and Career Readiness and 21<sup>st</sup> century skills.

- EIT is delivered over one academic school year through Schoology, an online learning management system.
  - Lessons are teacher-directed in a blended learning environment

Design:

- Quasi-experimental group design

Results:

- indicated students who received the intervention made notable gains in IT literacy skills.

Implications:

- Findings highlight the potential to link transition planning and assessment with 21<sup>st</sup> Century skills, IT literacy, and College and Career Readiness.

**Wehman, P., Schall, C. M., McDonough, J., Graham, C., Brooke, V., Riehle, J. E., Brooke, A., ... Avellone, L. (2017). Effects of an employer-based intervention on employment outcomes for youth with significant support needs due to autism. *Autism: The International Journal of Research and Practice, 21*, 276-290. doi: 10.1177/1362361316635826 (Experimental)**

Purpose:

- to investigate an employer-based 9-month intervention for high school youth with ASD to learn job skills and acquire employment.

Participants:

- 49 individuals between the ages of 18 and 21 years diagnosed with an autism spectrum disorder and eligible for supported employment.

Procedures:

- The intervention modified a program titled Project SEARCH and incorporated the use of applied behavior analysis to develop Project SEARCH plus Autism Spectrum Disorder Supports.

Design:

- Randomized clinical trial compared the implementation of Project SEARCH plus Autism Spectrum Disorder Supports with high school special education services as usual.

Results:

- indicated at 3 months post-graduation, 90% of the treatment group acquired competitive, part-time employment earning \$9.53–\$10.66 per hour.
- Furthermore, 87% of those individuals maintained employment at 12 months post-graduation.

**Bambara, L. M., Cole, C. L., Kunsch, C., Tsai, S. C., & Ayad, E. (2016). A peer-mediated intervention to improve the conversational skills of high school students with autism spectrum disorder. *Research in Autism Spectrum Disorders, 27*, 29-43. doi: 10.1016/j.rasd.2016.03.003 (Experimental)**

Purpose:



- to extend the PMI research in high school settings by investigating the effects of a PMI on the conversational skills of adolescents with ASD.

Participants:

- three students with ASD ages 14 and 15.

Design:

- Multiple baseline across participants design

Results:

- indicated improved conversational skills including increased conversational acts, initiations, and follow-up questions as well as longer conversational exchanges with peers.

Procedures:

- Peers served as the primary interventionists to teach conversational skills and written text cues and direct instruction were also incorporated in the intervention.

**Biggs, E. E., & Carter, E. W. (2016). Quality of life for transition-age youth with autism or intellectual disability. *Journal of Autism and Developmental Disorders, 46*, 190. doi: 10.1007/s10803-015-2563-x (Descriptive)**

Purpose:

- to investigate the quality of life of transition-aged individuals served under the special education categories of autism or intellectual disabilities (ID).

Participants:

- 232 youth served under the category of autism (54 of whom also received services under ID) and 157 youth were served under the category of ID.

Procedures:

- The parent proxy version of the KIDSCREEN-27 was used to examine the subjective health and well-being of transition-aged youth with autism or ID.

Results:

- Indicated challenging behaviors, autism, age, and speech as the primary mode of communication were predictive of lower ratings of well-being.

**Cannella-Malone, H. I., Miller, O., Schaefer, J. M., Jimenez, E. D., Page, E. J., & Sabielny, L. M. (2016). Using video prompting to teach leisure skills to students with significant disabilities. *Exceptional Children, 82*, 463-478. doi: 0.1177/0014402915598778 (Experimental)**

Purpose:

- to determine the effectiveness of video prompting with error correction to teach leisure skills to students with significant disabilities.

Participants:

- Of the nine participants included in the study, five students were diagnosed with ASD.
  - Participants ranged in age from 12 to 21.

Design:

- Multiple probe across behaviors design

Results:

- indicated a functional relation between video prompting with error correction and acquisition of leisure skills.
- Additionally, results indicated participants' preferences for leisure skills shifted after skill acquisition.

**Carter, E. W., Asmus, J., Moss, C. K., Biggs, E. E., Bolt, D. M., Born, T. L., ... & Fesperman, E. (2016). Randomized evaluation of peer support arrangements to support the inclusion of high school students with severe disabilities. *Exceptional Children, 82*, 209-233. Doi: 10.1177/0014402915598780 (Experimental)**

Purpose:

- to investigate the efficacy and social validity of peer support interventions on the academic and social participation, social skills, goal attainment, and peer connections of high school students with severe disabilities in general education classrooms.

Participants:

- included 51 students in the peer support condition and 48 students in the comparison condition, 106 peer partners, and 51 school staff.
  - The peer support condition included 15 (29.4%) students with ASD and 7 (13.7%) students with ASD and intellectual disability.
  - The comparison condition included 17 (35.4%) students with ASD and 3 (6.3%) students with ASD and intellectual disability.

Procedures:

- The intervention condition involved school staff establishing peer support arrangements for focus students

Design:

- Multiyear, randomized controlled study with pre, post, and follow-up measures,

Results:

- results indicated that school staff implementation of peer support arrangements offered specific advantages over exclusive reliance on assistance from individually assigned special education staff.
  - Peer support arrangements substantially expanded communication and relationship opportunities by significantly increasing the interactions between student with disabilities and their peers, the number of different classmates with whom they had conversations, and the extent to which progress was made on social-related goals.

Implications:

- Social validity and fidelity data suggest peer support interventions are feasible to implement in high school classrooms and were viewed favorably by critical stakeholders.

**McCoy, A., Holloway, J., Healy, O., Rispoli, M., & Neely, L. (2016). A Systematic review and evaluation of video modeling, role-play and computer-based instruction as social skills interventions for children and adolescents with high-functioning autism. *Review Journal of Autism and Developmental Disorders, 3, 48-67.* doi: 10.1007/s40489-015-0065-6 (Literature review)**

Purpose:

- to evaluate the evidence base of the existing literature on video modeling (VM), role play, and computer-based instruction (CBI) as interventions for increasing the social skills of children and adolescents with ASD.
- This review was the first to evaluate role play as an intervention for social skills, and it did not have enough evidence to be classified as such.

Results:

- indicated only CBI had enough evidence to be classified as an established evidence-based practice (EBP; using Reichow’s 2011 criteria).
- In contrast to other reviews, VM did not have enough evidence to be classified as an EBP.

**Murza, K. A. (2016). Vocational rehabilitation counselors’ experiences with clients diagnosed with autism spectrum disorder: Results of a national survey. *Journal of Vocational Rehabilitation, 45, 301-313.* doi: 10.3233/JVR-160831 (Descriptive)**

Purpose:

- to gather information about vocational rehabilitation counselors’ experiences/thoughts on working with adults with ASD
- Represented in the study were 932 VR counselors from 35 states.

Design:

- Survey

Results:

- Responses overwhelmingly indicated that social skills deficits present barriers to success in the workplace.
- Most respondents expressed an interest in receiving additional training to support their clients with ASD and believed their clients would benefit from social skill intervention programs.

Implications:

- Results suggest social skills deficits are critical to consider for practitioners working with students with ASD.

**Spriggs, A. D., Gast, D. L., & Knight, V. F. (2016). Video Modeling and Observational Learning to Teach Gaming Access to Students with ASD. *Journal of Autism and Developmental Disorders, 46*, 2845-2858. doi: 10.1007/s10803-016-2824-3 (Experimental)**

Purpose:

- to evaluate video modeling and observational learning (of peers) to teach appropriate recreation and leisure skills (i.e., accessing video games).

Participants:

- included four students ages 8 – 11 with ASD.

Procedures:

- Instruction occurred in small group instructional arrangements.

Design:

- Multiple probe across participants design

Results:

- indicated a functional relation between video and increased independence in gaming.
- Observational learning occurred for at least some steps across participants.

Implications:

- The authors suggest considering the following when selecting recreation/leisure skills to teach student (a) high interest aspects and motivation, (b) appropriate difficulty level and prerequisite skills, (c) methods and programming, and (d) availability.

**Young, J., Morgan, R. L., Callow-Heusser, C. A., & Lindstrom, L. (2016). The effects of parent training on knowledge of transition services for students with disabilities. *Career Development and Transition for Exceptional Individuals, 39*, 79-87. doi:10.1177/2165143414549207 (Experimental)**

Purpose

- to investigate the effects of training on parent knowledge about school district and adult agency transition services as well as actions taken by parents to contact services after the training.

Participants:

- included 29 parents of youth with disabilities (including students with ASD) between the ages of 15 and 18 who were receiving special education services.

Procedures:

- Parents were randomly assigned to a Brochure Only group (n=13) or a Brochure Plus Training group (n=16).

- The Brochure Plus group was supplemented with a 60-minute small group training that described all school transition and community agency services.

Design

- a pre-/posttest design

Results:

- indicated that parents in the Brochure Plus training group outperformed the Brochure Only group on post-tests of knowledge and 30-day follow-up contacts

**Gardner, S. J., & Wolfe, P. S. (2015). Teaching students with developmental disabilities daily living skills using point-of-view modeling plus video prompting with error correction. Focus on Autism and Other Developmental Disabilities, 30, 195-207. doi: 10.1177/1088357614547810 (Experimental)**

Purpose:

- to investigate the efficacy of video prompting to teach students with developmental disabilities to wash dishes.

Participants:

- included four students with ASD or intellectual disability.

Design:

- Multiple baseline across participants design

Results:

- indicated a functional relation between video prompting and the skill of dish washing.

**Hayes, G. R., Custodio, V. E., Haimson, O. L., Nguyen, K., Ringland, K. E., Ulgado, R. R., ... & Weiner, R. (2015). Mobile video modeling for employment interviews for individuals with autism. Journal of Vocational Rehabilitation, 43, 275-287. Doi: 10.3233/JVR-150775 (Experimental)**

Purpose:

- to determine the effectiveness of a video modeling system (i.e., VidCoach, a mobile IOS application) to teach improved interview performance, including reduction of fidgeting, improvement in presenting ideas logically and succinctly, and improvement in hygiene and health care.

Participants:

- included 15 students ages 17 and 18 with ASD.

Design:

- Randomized control design with t-tests to evaluate efficacy of each intervention

Results:

- indicated use of video-modeling resulted in a measurable improvement in interview performance.
- Participants in the intervention condition showed statistically significant improvement in overall interview performance rating by employers, as well as

reduction of fidgeting, improvement in presenting ideas logically and succinctly, and improvement in hygiene and health care.

- Participants in the control group showed significant improvement in grammar and vocabulary usage.

**Hochman, J. M., Carter, E. W., Bottema-Beutel, K., Harvey, M. N., & Gustafson, J. R. (2015). Efficacy of peer networks to increase social connections among high school students with and without autism spectrum disorder. *Exceptional Children, 82*, 96-116. doi: 10.1177/0014402915585482 (Experimental)**

Purpose:

- to investigate whether peer network interventions implemented in lunchrooms increase the peer interactions and social engagement of high school students with autism.

Participants:

- included four adolescents with ASD ages 15-17.

Design:

- Multiple baseline across participants design

Results:

- indicated a functional relation between peer networks and substantial increases in peer interactions and social engagement.

Implications:

- Additionally, findings of this study suggested the primary barrier to social interaction was limited structured opportunities to connect to peers without disabilities as opposed to social-related skill deficits.

**Kucharczyk, S., Reutebuch, C. K., Carter, E. W., Hedges, S., El Zein, F., Fan, H., & Gustafson, J. R. (2015). Addressing the needs of adolescents with autism spectrum disorder: Considerations and complexities for high school interventions. *Exceptional Children, 81*, 329-349. doi: 10.1177/0014402914563703 (Descriptive)**

Purpose:

- This study conducted 28 focus groups across four states to explore the contexts, considerations, and complexities associated with delivering and combining evidence-based interventions to meet the needs of adolescents with ASD from the vantage point of 152 practitioners, parents, and other key stakeholders.

Results:

- Participants emphasized the inadequacy of prevailing intervention approaches in secondary schools, underscored the importance of attending to feasibility and alignment with the diverse needs of students with ASD, and stressed the need for broader awareness and training efforts surrounding autism.

Implications:

- The authors offer recommendations for designing comprehensive interventions and incorporating stakeholder feedback into such undertakings.

**Matthews, N. L., Smith, C. J., Pollard, E., Ober-Reynolds, S., Kirwan, J., & Malligo, A. (2015). Adaptive functioning in autism spectrum disorder during the transition to adulthood. *Journal of Autism and Developmental Disorders*, 45, 2349-2360. doi: 10.1007/s10803-015-2400-2 (Descriptive)**

Purpose:

- to examine the relative performance of participants on the Vineland Adaptive Behavior Scales, Second Edition by age and intellectual ability

Participants

- 75 individuals (16 – 58 years) with ASD.

Results:

- extended previous reports of a cognitive advantage over adaptive functioning in children by showing a similar pattern in an older sample.
- Daily living skills were a relative strength compared to communication and socialization in adults, but not adolescents.
- Highest subdomain scores were observed in writing skills and lowest scores were observed in interpersonal skills.
- Regardless of cognitive ability, all standard scores were well below average, indicating a need for lifelong intervention that targets adaptive functioning.
  - Use of a simple 2-s delay to manual guidance was sufficient to transfer stimulus control from teacher-delivered prompting to the desired stimuli, the required materials, and the initial instruction to finish the task.
  - Use of a simple 2-s delay to manual guidance was sufficient to transfer stimulus control from teacher-delivered prompting to the desired stimuli, the required materials, and the initial instruction to finish the task.

**Reutebuch, C. K., El Zein, F., Kim, M. K., Weinberg, A. N., & Vaughn, S. (2015). Investigating a reading comprehension intervention for high school students with autism spectrum disorder. A pilot study. *Research in Autism Spectrum Disorders*, 9, 96–111. doi: 10.1016/j.rasd.2014.10.002 (Experimental)**

Participants:

- to evaluate the effects of Collaborative Strategic Reading – High School, an adapted reading comprehension intervention, on reading

Participants:

- included 3 high school students ages 13-21 with ASD.

Procedures:

- Participants were paired with neurotypical reading partners to learn and use reading strategies with informational text two to three times a week.

Design:

- Nonconcurrent, multiple baseline design

Results:

- Results of this exploratory study indicated overall accuracy on reading comprehension tasks increased.
- Although no functional relation was established, descriptive data showed social interaction increased and challenging behavior decreased.

**Szidon, K., Ruppert, A., & Smith, L. (2015). Five steps for developing effective transition plans for high school students with autism spectrum disorder. *Teaching Exceptional Children, 47*, 147-152. doi:10.1177/0040059914559780 (Discussion)**

Purpose:

- to describe the plight of a medium-sized high school in a rural farming community in developing better programming for students with ASD in the areas of social behavior, self-management, and independent living.

Implications:

- The authors outline five steps for developing meaningful and effective transition plans including (a) identifying transition goals, (b) linking postsecondary goals with IEP goals, (c) troubleshooting and adjusting transition and IEP goals, (d) identifying opportunities to teach needed skills, and (e) ensuring progress is evaluated.

**Williamson, P., Carnahan, C. R., Birri, N., & Swoboda, C. (2015). Improving comprehension of narrative using character event maps for high school students with autism spectrum disorder. *The Journal of Special Education, 49*, 28-38. doi: 10.1177/0022466914521301 (Experimental)**

Purpose:

- to investigate the effectiveness of an intervention package that included scaffolded completion of a character event map paired with review of the previous session's map to make a prediction about the coming chapter on increasing narrative text comprehension.

Participants:

- included three students ages 16 and 17 with ASD.

Design:

- Multiple baseline design

Results:

- indicated a functional relation between the intervention package and narrative text comprehension.
  - PND for all students was 100%.

**Yakubova, G., Hughes, E. M., & Hornberger, E. (2015). Video-based intervention in teaching fraction problem-solving to students with autism spectrum**



disorder. *Journal of Autism and Developmental Disorders*, 45, 2865-2875. doi: 10.1007/s10803-015-2449-y (Experimental)

Purpose:

- to determine the effectiveness of a multicomponent intervention (point-of-view video modeling instruction expanded with practice and self-prompting cue sheets) on improving problem-solving performance of students with ASD during functional and vocational tasks related to transition goals.

Participants:

- included three high school students ages 17-18, diagnosed with ASD.

Procedures:

- An iPad 2, three point-of-view video modeling clips, and a cue sheet were used during intervention.

Design:

- Multiple probe across students design

Results:

- indicated a functional relation between point-of-view video modeling supplemented with practice and cue sheet self-prompts and increased problem-solving performance.

**Bottge, B. A., Ma, X., Gassaway, L., Toland, M. D., Butler, M., & Cho, S. J. (2014). Effects of blended instructional models on math performance. *Exceptional Children*, 80, 423-437. doi: 10.1177/0014402914527240 (Experimental)**

Purpose:

- to examine the effects of combining explicit and anchored instruction (EAI) to teach fraction computation and problem solving for 335 middle school students with disabilities.

Participants:

- included students with intellectual disability, other health impairment, learning disability, emotional/behavioral disability, and autism (n=27).

Procedures:

- There were five EAI units including computer-based interactive lessons, vide-based anchored problems, and hands-on applied projects that together addressed several of the Common Core State Standards for Mathematics (2010).
- Teachers were given daily lesson plans that included detailed instructions of how to implement each lesson.

Design:

- Pretest/posttest, cluster-randomized school-based trial

Results:

- indicated that participants taught with blended EAI outscored participants in the business as usual condition on three out of four math measures.
- The largest gains were made in computing with fractions and on problems related to ratios, proportions, and geometry.

**Carter, E. W., Common, E. A., Sreckovic, M. A., Huber, H. B., Bottema-Beutel, K., Gustafson, J. R., ... & Hume, K. (2014). Promoting social competence and peer relationships for adolescents with autism spectrum disorders. *Remedial and Special Education, 35*, 91-101. doi: 10.1177/0741932513514618 (Discussion)**

Purpose:

- to highlight challenges for adolescents with ASD in middle and high school including (a) the peer culture, (b) their relationships with adults, (c) the settings in which they spend their school day, and (d) prevailing expectations for social success

Implications:

- The authors discussed potential intervention efforts toward (a) building the social competence of students with ASD, (b) improving the attitudes and skills of peers without disabilities, (c) addressing the supports and opportunities provided by educators, (d) initiating broader schoolwide efforts, and (e) engaging family members.
- Recommendations included:
  - using social-focused intervention strategies with on-going classroom, extracurricular, and community-based activities.
  - ensuring peers are active participants in interventions that focus on peers with ASD.
  - investigating how to use evolving technology in effective ways to support and teach students with ASD.

**El Zein, F., Solis, M., Vaughn, S., & McCulley, L. (2014). Reading comprehension interventions for students with autism spectrum disorders: A synthesis of research. *Journal of Autism and Developmental Disorders, 44*, 1303-1322. Doi: 10.1007/s10803-013-1989-2 (Literature review)**

Purpose:

- to describe a synthesis of reading intervention studies conducted between 1980 and 2012 with K-12 students identified with ASD.

Procedures:

- Studies meeting the criteria for inclusion included nine single-case, one quasi-experimental, and two single-group designs.

Results:

- indicated modifying instructional interventions associated with improved comprehension for students with reading difficulties may improve reading comprehension of students with ASD.
- Four studies implemented strategy instruction that included question generation, graphic organizers, and making predictions.
- Two studies utilized anaphoric cueing instruction, three implemented explicit instruction, and three examined student group practices.

**Fleury, V. P., Hedges, S., Hume, K., Browder, D. M., Thompson, J. L., Fallin, K., ... & Vaughn, S. (2014). Addressing the academic needs of adolescents with autism spectrum disorder in secondary education. *Remedial and Special Education, 35*, 68-79. doi: 10.1177/0741932513518823 (Discussion)**

Purpose:

- to present an overview of current knowledge around academic instruction for students with ASD in the following areas (a) how characteristics associated with ASD can impact academic performance, (b) academic profiles of individuals with ASD across content areas, and (c) interventions that have been successful in improving academic outcomes for this population.

Implications:

- The authors encourage practitioners and researchers to consider the following when planning for academic instruction (a) recognize the cognitive profiles of learners when adapting instruction, (b) recognize the need for multicomponent interventions, and (c) inform all educators about ASD.
- Special considerations are included for individuals who take alternate achievement assessments.

**Gardner, K. F., Carter, E. W., Gustafson, J. R., Hochman, J. M., Harvey, M. N., Mullins, T. S., & Fan, H. (2014). Effects of peer networks on the social interactions of high school students with autism spectrum disorders. *Research & Practice for Persons with Severe Disabilities, 39*, 100-118. doi:10.1177/1540796914544550 (Experimental)**

Purpose:

- to examine the efficacy and social validity of peer network interventions to promote social interactions and social skills.

Participants:

- included two high school students ages 14 and 18 with ASD.

Design:

- ABAB and ABA withdrawal designs

Results:

- indicated the introduction of peer networks was accompanied by substantial increases in peer interactions for both students.
- Adult facilitators, peer partners, and students with ASD each considered the intervention to be acceptable and feasible to implement.

**Griffin, M. M., Taylor, J. L., Urbano, R. C., & Hodapp, R. M. (2014). Involvement in transition planning meetings among high school students with autism spectrum disorders. *The Journal of Special Education, 47*(4), 256-264. doi: 10.1177/0022466913475668 (Causal Comparative)**

Purpose:

- to determine whether there was an association between demographics, student characteristics, educational experiences, and parent involvement and difference in transition planning.

Procedures:

- Data from the NLTS2 were used to identify predictors of the involvement of 320 youth with ASD.

Design:

- Logistic regression analyses

Results:

- overall low involvement in transition planning (of the 320 youth, 62.5% either did not attend meetings or were present but participated very little.
- of the students who participated actively in their meetings, 80.5% were Caucasian compared with 8.5% who were African American.
- 85.4% of students who did not participate in their meetings were those students who spent the least amount of time in inclusive, general education settings.
- Attendance was positively related to higher expressive skills, more time spent in general education, and more frequent discussions about post-school plans at home.
- Attendance was positively related to greater parent involvement at school.
- Active participation was demonstrated by students who had higher self-advocacy skills, spent more time in general education, and more frequently discussed post-school plans at home.

**Hume, K., Boyd, B. A., Hamm, J. V., & Kucharczyk, S. (2014). Supporting independence in adolescents on the autism spectrum. *Remedial and Special Education, 35*, 102-113. 10.1177/0741932513514617 (Discussion)**

Purpose:

- to discuss the importance of developing and demonstrating independence in secondary settings for students with ASD as well as factors that contribute to the difficulties in independence.

Implications:

- School-wide interventions that have been implemented in high schools and are appropriate for students with disabilities or students in need of intensive and individualized interventions (i.e., Tier 3) and focused, evidence-based practices specific to individuals with ASD (derived from the National Professional Development Center on ASD) are reviewed.
- The authors suggest independence should be included as a curricular area for students with ASD in secondary settings.

**Martin, J. D., Martin, J. E., & Osmani, K. J. (2014). Teaching students to attain annual transition goals using the Take Action goal attainment lessons. *Career***

***Development and Transition for Exceptional Individuals, 37, 72-83. doi: 10.1177/2165143413476544 (Experimental)***

**Purpose:**

- to determine the effectiveness of the Take Action goal attainment instructional program to teach goal attainment knowledge for students with mild to moderate disabilities.

**Participants:**

- included nine students with learning disability, emotional/behavioral disability, and autism (n=3).

**Procedures:**

- Take Action teaches students how to make a plan to attain goals by breaking their long-term goals into short-term goals, developing a six-component plan to attain their goal, act on goal, and evaluate/adjust their plan.

**Design:**

- Adapted alternating treatment design with an embedding ABC Results:

**Results:**

- indicated a functional relation between the Take Action program and increased goal attainment knowledge.
- Additionally, when assistive technology was used as a reminder, goal attainment increased.

**McKay, J. A., Weiss, J. S., Dickson, C. A., & Ahearn, W. H. (2014). Comparison of prompting hierarchies on the acquisition of leisure and vocational skills. *Behavior Analysis in Practice, 7, 91-102. doi: 10.1007/s40617-014-0022-3 (Experimental)***

**Purpose:**

- to determine the effects of task analysis with two different prompting hierarchies (a constant 2-s time delay added to the MTL sequence (MTLD) and manual guidance with 2-s delay (MGD) to increase on-task and on-schedule behaviors.

**Participants:**

- included two 15-year-old females diagnosed with pervasive developmental disorder-not otherwise specified living in a community-based Teaching-Family Model group home.

**Procedures:**

- Participants were taught to build structures with Lego® blocks and to build structures with nuts, bolts, and washers to determine whether the results from the Lego® structure comparison would be replicated with vocational tasks.

**Design:**

- Rapidly alternating training sessions with each chain in a parallel treatment design

Results:

- indicated both participants mastered all structures with each of the prompting hierarchies used with insignificant differences between the efficiency of the two with respect to number of trials to mastery.

Implications:

- It was noted practitioners may find MGD easier to implement than MTLD.

**Mechling, L. C., Ayres, K. M., Bryant, K. J., & Foster, A. L. (2014). Continuous video modeling to assist with completion of multi-step home living tasks by young adults with moderate intellectual disability. *Education and Training in Autism and Developmental Disabilities, 49*, 368-380. (Experimental)**

Purpose:

- to determine the efficacy of continuous video modeling (CVM) to teach multi-step cleaning tasks to high school students with moderate intellectual disability.

Participants:

- included three students ages 15 and 17, with moderate intellectual disability.
  - One participant also had a diagnosis of mild to moderate autism.

Procedures:

- CVM uses a video model that loops over and over as many times as the user needs to see the information for task completion.

Design:

- Multiple probe across participants design

Results:

- indicated CVM was effective at teaching cleaning tasks for two of the three participants.

Implications:

- Further research is needed to determine the types of tasks that are the best match for CVM.

**Odom, S. L., Duda, M. A., Kucharczyk, S., Cox, A. W., & Stabel, A. (2014). Applying an implementation science framework for adoption of a comprehensive program for high school students with autism spectrum disorder. *Remedial and Special Education, 35*, 123-132. doi: 10.1177/0741932513519826 (Discussion)**

Purpose:

- to describe implementation science principles and practices that could be used in supporting the adoption and implementation of a comprehensive program for high school students with ASD.

Implications:

- The described program was developed by the Center on Secondary Education for Students with Autism Spectrum Disorder (CSESA) serves as a case example of how such principles and practices may be employed in program planning and implementation.

- The following features are included in the program: (a) peer and social competence; (b) academics-literacy; (c) promoting responsibility, independence, and self-management; and (d) transition and families.
- The authors propose that a comprehensive, complex program model approach is necessary for effectively preparing students with ASD for life in the post-school world and that implementation science provides the frameworks and tools for supporting adoption of such models in public schools.

**Odom, S. L., Thompson, J. L., Hedges, S., Boyd, B. A., Dykstra, J. R., Duda, M. A., ... Bord, A. (2014). Technology-aided interventions and instruction for adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 45*, 3805-3819. doi:10.1007/s10803-014-2320-6 (Literature review)**

Purpose:

- to describe a review of the literature from 1990 to the end of 2013 identified 30 studies that documented efficacy of different forms of technology and their impact on academics for high school students with ASD
- The research literature underlying the use of technology in interventions and instruction for high school students with ASD was examined.

Implications:

- A theoretical and conceptual framework for examining the use of technology by and for adolescents with ASD in school, home, and community settings was proposed/
- The framework was used to describe the research literature on efficacy of intervention and instruction that utilizes technology.

**Reilly, C., Hughes, C., Harvey, M., Brigham, N., Cosgriff, J., Kaplan, L., & Bernstein, R. (2014). " Let's talk!": Increasing novel peer-directed questions by high school students with autism to their general education peers. *Education and Training in Autism and Developmental Disabilities, 49*, 214-231. (Experimental)**

Purpose:

- to determine the effects of novel peer-directed question training with use of communication books to teach participants to ask peer-directed question.

Participants:

- included three students ages 16 and 18, with autism.

Procedures:

- Participants had been taught to use their communication books prior to baseline.

Design:

- Multiple probe across participants design

Results:

- indicated a functional relation between novel peer-directed question training with communication books and increased novel peer-directed questions with general education partners during class or at lunch at school.
- Novel question training was associated with participants asking questions, directed toward peers, not contained in their communication books.

**Smith, L. E., & Anderson, K. A. (2014). The roles and needs of families of adolescents with ASD. *Remedial and Special Education, 35*, 114-122. doi: 10.1177/0741932513514616 (Discussion)**

Purpose:

- to discuss the roles of families in the transition process for their son or daughter with ASD and presented the literature on the unique needs of families of adolescents with ASD during the transition to adulthood.

Implications:

- The authors emphasized the importance for professionals to (a) be aware of the unique challenges confronting families of children with ASD during the transition to adulthood and to maintain a strengths-based perspective with families, (b) support the continuation of positive parent–child relationships during this period as well as encourage non-critical environments across contexts for students, and (c) consider parents as partners and allies in the transition planning process.

**Wehman, P. H., Schall, C. M., McDonough, J., Kregel, J., Brooke, V., Molinelli, A., ... & Thiss, W. (2014). Competitive employment for youth with autism spectrum disorders: Early results from a randomized clinical trial. *Journal of Autism and Developmental Disorders, 44*, 487-500. doi: 10.1007/s10803-013-1892-x (Experimental)**

Purpose:

- to examine the preliminary effectiveness of Project SEARCH plus ASD supports on obtaining employment for students with ASD compared to high school students' IEP delivered in their final year of high school.
- This article was a preliminary review of results collected at baseline, completion of 9-month intervention, and 3-months post-intervention.
- The first study to use randomized clinical design to evaluate employment outcomes of youth with ASD.

Participants:

- included 44 high school students ages 18-22, with ASD.
- Twenty-four students in the treatment group received Project SEARCH plus ASD supports for a full year during their final year of high school.

Procedures:

- Additional components added to the Project SEARCH model for project included: (a) on-site, intensive, systematic instruction using the principles of ABA; (b) on-



site support and consultation from a behavior/autism specialist; (c) intensive staff training in ASD and the Project SEARCH model.

Design:

- Randomized clinical design with discrete treatment and control groups; Results:

Results:

- indicated 21 individuals were hired into competitive employment jobs (e.g., pharmacy tech, ICU assistant, teacher's aide, surgical care technician, and clerical assistant) compared to 1 out of 16 of control group participants.

**Carter, E. W., Harvey, M. N., Taylor, J. L., & Gotham, K. (2013). Connecting youth and young adults with autism spectrum disorders to community life. *Psychology in the Schools, 50*, 888-898. doi: 10.1002/pits.21716 (Discussion)**

Purpose:

- to highlight promising and recommended practices for connecting transition-age students with ASD to postsecondary and other community activities after high school, specifically emphasizing developing and maintaining social connections

Implications:

- The authors identified ways school psychologists and other school staff can support the successful transitions of students with ASD including: (a) addressing individual strengths, challenges, and limitations when assisting with college and other community connections; (b) encourage family support of their child's self-determination and leadership skills in preparing to participate in IEP meetings; and (c) educate families about the availability of outside agency supports and services and how to access these services.

**Carter, E. W., Lane, K. L., Cooney, M., Weir, K., Moss, C. K., & Machalicek, W. (2013). Self-determination among transition-age youth with autism or intellectual disability: Parent perspectives. *Research and Practice for Persons with Severe Disabilities, 38*, 129-138. doi: 10.1177/154079691303800301 (Descriptive)**

Purpose:

- This study evaluated parents' views of the self-determination skills and capacities of their young adult children with ASD and ID.
- Participants:
- 68 parents' of young adults with ASD and ID (ages 19 – 21 years)

Results:

- indicated parents place a high value on the importance of all seven component skills (i.e., choice-making skills, decision-making skills, goal-setting skills, problem-solving skills, self-advocacy and leadership skills, self-awareness and self-knowledge, and self-management and self-regulation skills).
- However, parents indicated their adult children often did not perform these skills well.

- Effect sizes suggested high magnitude differences between parents' ratings of the importance and their child's performance for each self-determination skill evaluated.
- Parents who described their children's disabilities as less severe rated their children as having higher performance on both measures of self-determination.

**Francis, G., Gross, J. M., Turnbull, R., & Parent-Johnson, W. (2013). Evaluating the effectiveness of the Family Employment Awareness Training in Kansas: A pilot study. *Research and Practice for Persons with Severe Disabilities, 38*, 44-57. doi: 0.2511/027494813807046953 (Descriptive)**

Purpose:

- to evaluate the effects of the Family Employment Awareness Model (FEAT) on participants' transition to employment knowledge and participant expectations for competitive employment.

Participants:

- included 237 family members, professionals, and individuals with individual support needs who attended FEAT training in 2010 and 2011.
  - The largest reported disability in the family was autism (34.9%).

Procedures:

- FEAT was created through a partnership between the Beach Center on Disability at the University of Kansas, Kansas Division on Health Care Finance, and Families Together, Inc.
- The FEAT curriculum described various supported and customized employment options, addressed the role family play in supporting the transition to employment, explained state and federal funding streams and employment-related systems navigation, and identified many resources for both employees and employers.

Design:

- Mixed methods design

Results:

- indicated a statistically significant improvement in transition to employment knowledge across FEAT trainings; qualitative analysis revealed a shift in participant expectations for competitive employment from generally dismal to generally positive.

**Geenen, S., Powers, L. E., Powers, J., Cunningham, M., McMahon, L., Nelson, M., ... & Research Consortium to Increase the Success of Youth in Foster Care. (2013). Experimental study of a self-determination intervention for youth in foster care. *Career Development and Transition for Exceptional Individuals, 36*, 84-95. doi: 10.1177/2165143412455431 (Experimental)**

Purpose:

- examined the effects of *TAKE CHARGE*, a self-determination enhancement intervention, for promoting school performance of youth in special education and foster care.
- This study marks the first time emotional and behavioral effects of a self-determination intervention have been studied with youth in special education.

Participants:

- included 133 youth in foster care and receiving special education services in public schools of whom 3.25% was identified as having ASD.
- Participants in the intervention group received coaching in applying self-determination skills to achieve their goals and participated in group mentoring workshops with successful adult alumni of foster care.

Design:

- Longitudinal, randomized clinical trial

Results:

- confirmed the benefits of the intervention for promoting educational planning knowledge and engagement, academic performance, and reduction in anxiety and depression
- It is not clear whether the intervention had a significant impact on self-determination as measured by the AIR.

**Geenen, S., Powers, L. E., Powers, J., Cunningham, M., McMahon, L., Nelson, M., ... & Research Consortium to Increase the Success of Youth in Foster Care. (2013). Experimental study of a self-determination intervention for youth in foster care. *Career Development and Transition for Exceptional Individuals, 36, 84-95.* doi: <https://doi.org/10.1177%2F2165143412455431> (Experimental)**

Purpose:

- To examine the effects of *TAKE CHARGE*, a self-determination enhancement intervention, for promoting school performance of youth in special education and foster care

Participants:

- 133 youth in foster care and receiving special education services in public schools of whom 3.25% was identified as having ASD

Procedure:

- Participants in the intervention group received coaching in applying self-determination skills to achieve their goals and participated in group mentoring workshops with successful adult alumni of foster care

Design:

- Longitudinal, randomized clinical trial

Results:

- Findings confirmed the benefits of the intervention for promoting educational planning knowledge and engagement, academic performance, and reduction in anxiety and depression

- It is not clear whether the intervention had a significant impact on self-determination as measured by the AIR
- This study marks the first time emotional and behavioral effects of a self-determination intervention have been studied with youth in special education

**Knight, V. F., Spooner, F., Browder, D. M., Smith, B. R., & Wood, C. L. (2013). Using systematic instruction and graphic organizers to teach science concepts to students with autism spectrum disorders and intellectual disability. *Focus on Autism and Other Developmental Disabilities, 28*, 115-126. doi: <https://doi.org/10.11772F1088357612475301> (Experimental)**

Purpose:

- To evaluate the effectiveness of graphic organizers and systematic instruction on the acquisition and generalization of science concepts by students with ASD and intellectual disability

Participants:

- Three middle school students ages 13 and 14, with ASD and ID

Design:

- Multiple probe across students design

Results:

- There was a functional relation between the intervention and the number of correct steps completed on a task analysis to demonstrate understanding of a science concept (i.e., convection)

**Lindstrom, L., Doren, B., Post, C., & Lombardi, A. (2013). Building career PATHS (Postschool Achievement Through Higher Skills) for young women with disabilities. *The Career Development Quarterly, 61*, 330-338. doi: [10.1002/j.2161-0045.2013.00059.x](https://doi.org/10.1002/j.2161-0045.2013.00059.x) (Experimental)**

Purpose:

- Pilot study; examined the efficacy of the Postschool Achievement Through Higher Skills (PATHS) curriculum
- PATHS is designed to address the poor post-school transition outcomes and lack of career development opportunities for young women identified for special education services
- PATHS is a gender-specific curriculum designed to be delivered in group settings to 9<sup>th</sup> to 12<sup>th</sup> grade female students with identified disabilities

Participants:

- 85 young women who had been identified for special education and ranged in age from 14 to 21 years
- 7 participants with ASD

Procedure:

- PATHS includes four modules on self-awareness, disability issues, gender identify, and career and college planning

Design:

- Pre-post control group design

Results:

- Participating in a gender-specific career planning curriculum was an effective tool for advancing career development for young women with disabilities
- Pre-post survey results documented participants gains in vocational self-efficacy and social efficacy, increased awareness of disability and gender issues related to career planning

**Murray, C., & Doren, B. (2013). The effects of working at gaining employment skills on the social and vocational skills of adolescents with disabilities: A school-based intervention. *Rehabilitation Counseling Bulletin, 56*, 96-107. doi: 10.1177/0034355212452614 (Experimental)**

Purpose:

- To investigate the efficacy of the Working at Gaining Employment Skills (WAGES) curriculum to teach prevocational and social skills to students with disabilities

Participants:

- 222 high school students with disabilities (autism, n=2) in grades 9-12

Procedure:

- WAGES is a job-related social skills curriculum with lessons in the domains of self-regulation, teamwork, communication, and problem-solving
- Participants in the intervention group received instruction in WAGES for 4.5 months

Design

- Group experimental design with random assignment

Results:

- WAGES can increase the prevocational and social skills of students with disabilities
  - Largest effects were observed in the outcome area of occupational skills

**Plavnick, J. B., Sam, A. M., Hume, K., & Odom, S. L. (2013). Effects of video-based group instruction for adolescents with autism spectrum disorder. *Exceptional Children, 80*(1), 67-83. doi: doi.org/10.1177001440291308000103 (Experimental)**

Purpose:

- To determine the effects of video-based group instruction (VGI) to teach complex social skills to youth with ASD
- Behaviors targeted in this intervention included social initiations, social awareness, and reciprocal social interactions

Participants:

- Four youth ages 13-16, diagnosed with ASD

Design:

- Multiple probe across behaviors design

Results:

- There was a functional relation between VGI and complex social behavior to youth with ASD
  - Each participant displayed a rapid increase in level of complex social behavior each time VGI was applied to a social domain

**Smith, M., Ayres, K., Mechling, L. C., & Smith, K. (2013). Comparison of the effects of video modeling with narration vs. video modeling on the functional skill acquisition of adolescents with autism. *Education and Training in Autism and Developmental Disabilities, 48*, 164-178. doi: <https://www.jstor.org/stable/23880637> (Experimental)**

Purpose:

- To compare the effectiveness of video modeling with narration versus video modeling without narration on functional skill acquisition (i.e., food preparation) for students with ASD
- Four students ages 13-16, diagnosed with autism

Procedure:

- Video models with narration were presented using an iPhone 4

Design:

- Adapted alternating treatment design

Results:

- All participants responded with over 80% accuracy following the comparison phase with both types of video models
  - This evidence increases the external validity of video modeling as an intervention to teach complex chained tasks
- Video modeling with narration was more efficient for two of the four participants
- Narration was not a critical component of video modeling for the other two participants, although both indicated they preferred video modeling with narration

**White, S. W., Ollendick, T., Albano, A. M., Oswald, D., Johnson, C., Southam-Gerow, M. A., ... & Scahill, L. (2013). Randomized controlled trial: Multimodal anxiety and social skill intervention for adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 43*, 382-394. doi: [10.1007/s10803-012-1577-x](https://doi.org/10.1007/s10803-012-1577-x) (Experimental)**

Purpose:

- Pilot study; to determine the feasibility and initial outcomes of the Multimodal Anxiety and Social Skills Intervention (MASSI) program (a cognitive-behavioral

therapy program that targets anxiety and social disability in adolescents with ASD)

Participants:

- 23 adolescents with ASD and anxiety symptoms of moderate or greater severity between the ages of 12 and 17

Procedures:

- MASSI is delivered via individual therapy, group social skills training, and parent coaching

Design:

- The first randomized controlled trial of a psychosocial intervention targeting both social deficits and anxiety in adolescents with ASD

Results:

- Anxiety symptoms decreased by 26%, although the change was not statistically significant
  - Participants experienced a 16% improvement in ASD social impairment as reported on a parent-reported scale
  - Results support the feasibility of the multicomponent intervention.
  - Therapists delivered the program with high fidelity
  - Parents and participants reported high satisfaction with treatment content and delivery

**Zakas, T. L., Browder, D. M., Ahlgrim-Delzell, L., & Heafner, T. (2013). Teaching social studies content to students with autism using a graphic organizer intervention. *Research in Autism Spectrum Disorders, 7*, 1075-1086. doi: 10.1016/j.rasd.2013.06.001 (Experimental)**

Purpose:

- To determine the effectiveness of a modified graphic organizer to improve expository text comprehension using a modified graphic organizer with a series of scripted prompt that allowed participants to demonstrate comprehension of the adapted social studies materials

Participants:

- Three middle school students with ASD ages 11 and 13

Design:

- Multiple probe across participants design

Results:

- There was a functional relation between the graphic organizer intervention and students' ability to answer comprehension questions on a graphic organizer from an adapted grade-level expository text related to United States history

**Cuenca-Sanchez, Y., Mastropieri, M. A., Scruggs, T. E., & Kidd, J. K. (2012). Teaching students with emotional and behavioral disorders to self-advocate through**

**persuasive writing. *Exceptionality*, 20, 71-93. doi: 10.1080/09362835.2012.669291 (Experimental)**

Purpose:

- To determine the effectiveness of self-regulated strategy development (SRSD) with a self-determination component to teach students how to plan and write persuasive essays to self-advocate
- Special education teachers taught SRSD plus POW + TREE with an embedded self-determination component

Participants:

- 21 students in seventh grade who met state and federal guidelines for emotional disabilities of whom one also had autism

Procedures:

- The Seven Powerful Self-Determination Behaviors were introduced and participants were taught how to apply these behaviors when writing

Design:

- Experimental pretest and posttest group design with random student assignment to a treatment or control group

Results:

- Participants who received POW + TREE with a self-determination component outperformed comparison participants' performance in their ability to write persuasive essays with respect to number of words, overall quality, number of sentences and paragraphs, transition words, and essay parts
- Participants in the experimental condition outperformed control participants in their ability to recall the parts of a persuasive essay, in the self-efficacy measure, and on self-determination knowledge

**Donohue, M. M., Casey, L. B., Bicard, D. F., & Bicard, S. E. (2012). Effects of differential reinforcement of short latencies on response latency, task completion, and accuracy of an adolescent with autism. *Education and Training in Autism and Developmental Disabilities*, 47, 97-108. Retrieved from <https://www.jstor.org/stable/23880565> (Experimental)**

Procedure:

- To determine the effectiveness of differential reinforcement of short latencies on response latency, task completion, and accuracy for one adolescent with autism

Participants:

- One 17-year-old participant who had profound autism and severely limited verbal skills

Design:

- Using a changing criterion design

Procedure:



- Dependent variables: (a) response latency (i.e., number of seconds between the end of instruction given until the participant's' correct or incorrect response to the question; (b) task completion (i.e., number of correctly answered questions or instructions compiled with or lack of response; and (c) accuracy (i.e., correct response to the question or instruction as measured by frequency)

Results:

- Differential reinforcement of short-term latencies was effective for decreasing response latency and increasing compliance

**Hagner, D., Kurtz, A., Cloutier, H., Arakelian, C., Brucker, D. L., & May, J. (2012). Outcomes of a family-centered transition process for students with autism spectrum disorders. *Focus on Autism and Other Developmental Disabilities, 27, 42-50.* doi: 10.11771088357611430841 (Experimental)**

Purpose

- To examine the effectiveness of a transition planning approach that empowers students with ASD and their families by educating them about the transition process and helps them connect with community resources on transition readiness of youth with ASD

Participants:

- 47 students ages 16-19 and 47 parents
- Randomly assigned to a Year 1 group who received a transition planning intervention first or to a Year 2 group who began receiving services following the second data point

Procedure:

- The intervention included 3 components:
  - Group training sessions for parents on strategies for person-centered planning, networking, and utilizing adult service options and resources to plan and work toward a positive future beyond high school using a curriculum called Specific Planning Encourages Creative Solutions
  - Person-centered planning for each student and his/her family
  - Ongoing assistance (i.e., career exploration activities such as information interviews, job shadowing, online or in-person investigation of postsecondary options, unpaid or paid work experiences) from planning facilitators for 4 to 6 months

Design:

- Randomized control trial design

Results:

- Year 1 participants showed significant increases in autonomy, self-regulation, psychological empowerment, and self-realization as measured by the Arc Self-Determination Scale
- Year 2 participants showed no significant increases in the variables listed above indicating that a combination of maturation over time and exposure to the

models of transition assistance currently provided to students with ASD are not sufficient to accomplish these goals

**Holwerda, A., van der Klink, J. J., Groothoff, J. W., & Brouwer, S. (2012). Predictors for work participation in individuals with an autism spectrum disorder: A systematic review. *Journal of Occupational Rehabilitation, 22*, 333-352. doi: 10.1007/s10926-011-9347-8 (Literature review)**

Purpose:

- Systematic review of longitudinal studies in biomedical and psychological databases identified factors facilitating or hindering work participation of individuals with ASD

Results:

- 17 factors were identified and categorized into disease-related, personal, or external factors
- Limited cognitive ability was the only significant predictor consistently found for work outcome
- Functional independence and institutionalization were both reported by one study to be significantly related to work outcome
- Inconsistent or non-significant findings were reported for the other 14 factors

Implications:

- These findings emphasize the need for more high-quality cohort studies focusing on work participation as the main outcome for individual with ASD

**Kim, N. H., & Park, J. (2012). The effects of the family-involved SDLMI on academic engagement and goal attainment of middle school students with disabilities who exhibit problem behavior. *International Journal of Special Education, 27*, 117-127. (Experimental)**

Purpose:

- To explore the efficacy of the Family-Involved Self-Determination Learning Model (SDLMI) to teach academic engagement and goal attainment

Participants:

- 24 middle school students with their families and special education teachers in Korean language classes

Design:

- Group experimental design

Results:

- Participants in the experimental group had significantly higher academic engagement than that of the control group.
  - Goal attainment of the experimental group also improved significantly compared to the control group.

**Mechling, L. C., & Ayres, K. M. (2012). A comparative study: Completion of fine motor office related tasks by high school students with autism using video models on large and small screen sizes. *Journal of Autism and Developmental Disorders, 42*, 2364-2373. doi 10.1007/s10803-012-1484-1 (Experimental)**

Purpose:

- To compare fine motor task completion (i.e., office related tasks) when using video models presented on a small screen (PDA) compared to larger laptop screen

Participants:

- Four young adults ages 19-21, with a diagnosis of ASD

Design:

- Adapted alternating treatments design with extended baseline, comparison, and final treatment conditions

Results:

- Independent completion of fine motor tasks increased under both conditions; however, use of video models on the larger laptop screen resulted in a higher percentage of correct responses across all four students

**Powers, L. E., Geenen, S., Powers, J., Pommier-Satya, S., Turner, A., Dalton, L. D., ... & Swank, P. (2012). My Life: Effects of a longitudinal, randomized study of self-determination enhancement on the transition outcomes of youth in foster care and special education. *Children and Youth Services Review, 34*, 2179-2187. Retrieved from <https://doi.org/10.1016/j.childyouth.2012.07.018> (Experimental)**

Purpose:

- To investigate the effectiveness of the *TAKE CHARGE* model on the self-determination and transition outcomes for youth who were both in foster care and special education

Participants:

- 61 youth with disabilities ages 16.5 to 17.5
- Three students with ASD were included in the intervention group

Procedures:

- Participants in the intervention group received coaching in applying self-determination skills to achieve their goals and participated in group mentoring workshops with successful adult alumni of foster care

Design:

- longitudinal, randomized, two-independent groups x three repeated measures

Results:

- indicated moderate to large effect sizes post-intervention and at one-year follow-up for the differences between groups in self-determination, quality of life, and utilization of community transition services

- Youth in the intervention group completed high school, were employed, and carried out independent living activities at higher rates than the comparison group
- Self-determination was a partial mediator of enhanced quality of life
- Results were not disaggregated by disability category

**Rowe, D., & Test, D. (2012). Effects of simulation to teach students with disabilities Basic Finance Skills. *Remedial and Special Education, 34*, 237–248. doi: 10.1177/0741932512448218 (Experimental)**

Purpose:

- To investigate the effectiveness of simulation to teach students to make a debit card purchase and track expenses and deposits in a check register

Participants:

- Four students with disabilities (Autism and Emotional/Behavioral Disorder, n=1)

Design:

- Multiple probe across participant design

Results

- There was a functional relation between simulated instruction and participants' ability to complete a 20-step task analysis of basic finance skills
- All participants generalized the skills of making a debit card purchase to four untrained debit machines in four separate community settings and maintained the skills of tracking expenses and deposits maintained up to five weeks following the intervention

**Van Laarhoven, T. V., Winiarski, L., Blood, E., & Chan, J. M. (2012). Maintaining vocational skills of individuals with autism and developmental disabilities through video modeling. *Education and Training in Autism and Developmental Disabilities, 47*, 447-461. (Experimental)**

- The purpose of this study was to determine the effectiveness of video modeling to teach vocational skills (i.e., portioning food, panning cookies, recycling, loading dishwasher, loading washing machine).
- Participants included six high school students ranging in age from 15 to 17, with ASD and/or DD; four participants had a diagnosis of autism.
- Each participant was assigned two vocational tasks (one assigned to the video modeling condition, the other task served as the control) at their employment site where their independence was measured prior to and following a 2-week break.
- Using a modified pre/posttest control group design, results indicated all students increased their independence with both tasks following the video modeling procedure.

**Alexander, M., Dummer, G., Smeltzer, A., & Denton, S. (2011). Developing the social skills of young adult special olympics athletes. *Education and Training in Autism and Developmental Disabilities, 46*, 297–310. Retrieved from <https://www.jstor.org/stable/23879699> (Experimental)**

Purpose:

- To determine the effectiveness of the Social Skills and Sports Program (S<sup>3</sup>) to teach contributing relevant information to a conversation, turn taking in a conversation, and making appropriate eye contact
- The S<sup>3</sup> was developed specifically for this study to teach adolescents and young adults who qualify for Special Olympics

Participants:

- Four students including one 15-year old with autism and intellectual disability

Design:

- ABCA quasi-experimental repeated measures design

Results:

- Social skills can be taught in an environment that is interactive and where participants are having fun
- Findings support previous research that suggests the need for both direct instruction and practice in natural environments

**Lee, Y., Wehmeyer, M. L., Palmer, S. B., Williams-Diehm, K., Davies, D. K., & Stock, S. E. (2011). The effect of student-directed transition planning with a computer-based reading support program on the self-determination of students with disabilities. *The Journal of Special Education, 45*, 104-117. doi: 10.11770022466909358916 (Experimental)**

Purpose:

- This study examined the effects of student-directed transition planning with a computer-based reading support program to teach self-determination of students with disabilities in middle school classrooms

Participants:

- 168 junior high/middle school students, between the ages of 12 and 16, with disabilities who required reading supports. Seven students were identified as having autism

Procedures:

- Teachers were trained to implement *Whose Future Is It Anyway?*, a student directed transition planning process and *Rocket Reader*, a cognitively accessible text reader
- Measures of self-determination used included the *Arc's Self-Determination Scale*, the *AIR Self-Determination Scale*, the *Whose Future Knowledge* scale, and the *Self-Efficacy and Outcome Expectancy for Educational Planning* scale

Design:

- Randomized trial, including control group with pretest/posttest design

Results:

- Self-determination, self-efficacy, and outcome expectancy for education planning improved the application of Rocket Reader

**Marshak, L., Mastropieri, M. A., & Scruggs, T. E. (2011). Curriculum enhancements in inclusive secondary social studies classrooms. *Exceptionality, 19*, 61-74. doi: 10.1080/09362835.2011.562092 (Experimental)**

Purpose:

- To evaluate the implementation of peer tutoring with embedded mnemonic pictures to teach strategic information and supplemental practice of important social studies content delivered over 10 weeks of instruction

Participants:

- 186 seventh grade students of whom 42 qualified for special education services, five were identified as having autism

Procedure:

- Students in the experimental condition used the same materials as those in the control group along with additional supplemental tutoring materials
  - Ten cards were created for each unit (30 cards total)
  - One side of the card had pictures of the interactive strategy, and the other side of the card had directions for peer tutoring and listed the questions, answer, and mnemonic strategy students should use to remember the content

Design:

- Group pre/posttest design with random assignment

Results:

- Students with and without mild disabilities who engaged in class-wide peer tutoring with mnemonic strategies significantly outperformed student provided with more traditional activities

**Richter, S., & Test, D. (2011). Effects of multimedia social stories on knowledge of adult outcomes and opportunities among transition-aged youth with significant cognitive disabilities. *Education and Training in Autism and Developmental Disabilities, 46*, 410-424. Retrieved from <https://www.jstor.org/stable/23880595> (Experimental)**

Purpose:

- To determine the effectiveness of multimedia social stories on knowledge of adult outcome areas and opportunities

Participants:

- Three students ages 17-21, with significant cognitive disabilities of whom one was identified with autism and moderate ID

Design:

- Multiple probe across participants design

Results:

- There was a functional relation between the multimedia social stories intervention and students' knowledge of adult outcome areas and opportunities
- After receiving the intervention, participants demonstrated improved ability to express preferences for adult life and participate in transition planning activities in comparison to preintervention assessments and students who did not receive the intervention

**Waters, H. E., & Boon, R. T. (2011). Teaching money computation skills to thigh school students with mild intellectual disabilities via the TouchMath program: A multi-sensory approach. *Education and Training in Autism and Developmental Disabilities, 46*, 544-555. Retrieved from <https://www.jstor.org/stable/24232365> (Experimental)**

Purpose:

- To determine the effects of the TouchMath, a multi-sensory mathematics program, on the acquisition of subtracting 3-digit money computational problems with regrouping

Participants:

- Three students ages 14-16, with mild ID of whom two also had a diagnosis of autism

Design:

- Multiple probe across participants design

Results

- There was a functional relation between the touch-point strategy and acquisition of subtracting 3-digit money computational problems with regrouping

**Allen, K. D., Wallace, D. P., Greene, D. J., Bowen, S. L., & Burke, R. V. (2010). Community-based vocational instruction using videotaped modeling for young adults with autism spectrum disorders performing in air-inflated mascots. *Focus on Autism and Other Developmental Disabilities, 25*, 186-192. doi: 10.1177/1088357610377318 (Experimental)**

Purpose:

- To determine the effectiveness of video modeling to teach a unique vocational skill set (i.e., how to perform in an air-inflated mascot costume; specific target behaviors of waving and jumping, shaking hands and wiggling the ears, giving high fives, and shaking the body)

Participants

- Three individuals with ASD (ages 17, 19, 22)

Results:

- There was a functional relation between the video modeling intervention and participants' ability to perform a vocational task that required the use of multiple skills in a social setting
- Maintenance data showed two participants maintained skills at high levels at 1-month follow-up
- Generalization data indicated all three of the participants generalized skills to an actual work environment several months later

**Chappel, S. L., & Somers, B. C. (2010). Employing persons with autism spectrum disorders: A collaborative effort. *Journal of Vocational Rehabilitation, 32*, 117-124. doi: 10.3233/JVR-2010-0501 (Discussion)**

Purpose:

- To describe strategies school systems and their vocational rehabilitation partners could use to work cooperatively to improve outcomes for student with ASD

Outcomes:

- Strategies included (a) linking with VR and other community agencies early, (b) considering the student's strengths and passions, (c) teaching self-advocacy, (d) teaching the social skills needed in the work place, (d) providing work experiences prior to graduation, and (e) choosing suitable work environments and educate the employers and employees

**Fletcher, D., Boon, R. T., & Cihak, D. F. (2010). Effects of the TOUCHMATH program compared to a number line strategy to teach addition facts to middle school students with moderate intellectual disabilities. *Education and Training in Autism and Developmental Disabilities, 45*, 449-458 Retrieved from [www.jstor.org/stable/23880117](http://www.jstor.org/stable/23880117). (Experimental)**

Purpose:

- To investigate the efficacy of the TouchMath program to teach addition of single-digit mathematics problems

Participants:

- Three middle school students with moderate ID, of whom two were also diagnosed with autism

Design:

- Alternating treatments design across participants

Results:

- TouchMath touch-points strategy was more effective and efficient than the use of the number line in teaching participants to add single-digit math problems

**Geller, L.L., & Greenberg, M. (2010). Managing the transition process from high school to college and beyond: Challenges for individuals, families, and society. *Social Work in Mental Health, 8*, 92-116. doi: 10.1080/15332980902932466 (Discussion)**



Purpose:

- To address the challenges of the transition to adulthood from various perspectives and provided a structure for individuals, families, and supporting professionals to foresee challenges and develop positive solutions

Outcomes:

- The authors proposed that transition planning is specific to the strengths and needs of the individual and should include:
  - Social Skill Development
  - Social Thinking Skills Development
  - Steady Development of life skills including:
    - Money Management
    - Hygiene
    - Housekeeping
    - Maintenance of Health
    - Personal Organization
    - Traveling or Driving
    - A better understanding of varying demands across job settings
    - Plans for further education

**Hendricks, D. (2010). Employment and adults with autism spectrum disorders: Challenges and strategies for success. *Journal of Vocational Rehabilitation, 32, 125-134.* doi: 10.3233/JVR-2010-0502 (Discussion)**

Purpose:

- To review evidence-based research related to employment for individuals with ASD including (a) benefits of employment, (b) state of employment, (c) obstacles to employment, (d) current service options, and (e) in depth review of supports needed for employment

Outcomes:

- Strategies for employment success included; finding good job matches; supportive supervisors and co-workers; on-the-job training; work place modifications (e.g., environmental assessments, clearly defined work tasks, restructured job duties, a consistent schedule, use of organizers to structure work, activity schedules, down time alternatives); and extended long-term support as needed.

**McDonough, J. T., & Revell, G. (2010). Accessing employment supports in the adult system for transitioning youth with autism spectrum disorders. *Journal of Vocational Rehabilitation, 32, 89-100.* doi: 10.3233/JVR-2010-0498 (Case study)**

Purpose:

- To describe primary employment and related service systems students with ASD, their parents, and school transition teams need to know about when transitioning from school to adult service providers

Outcomes:

- Two case studies of individuals with ASD illustrated the importance of being well-informed about resources at the community and state level and of learning how to network effectively among these resources

**Roberts, K.D. (2010). Topic areas to consider when planning transition from high school to postsecondary education for students with autism spectrum disorders. *Focus on Autism and Other Developmental Disabilities, 25*, 158-162. doi: 10.1177/1088357610371476 (Discussion)**

Purpose:

- To provide educators and transition support personnel with a variety of topics to consider when working with students with ASD and their families to develop an all-inclusive transition plan
- The topic areas include:
  - Career Exploration
  - Academic Goal Setting and Preparation
  - Assessing and Knowing Learning Styles
  - Self-advocacy Skills
  - Reasonable Accommodations
  - Academic Support
  - Interagency Collaboration
  - Technology
  - Time Management Skills

**Schall, C. M. (2010). Positive behavior support: Supporting adults with autism spectrum disorders in the workplace. *Journal of Vocational Rehabilitation, 32*, 109-115. doi: 10.3233/JVR-2010-0500 (Discussion)**

Purpose:

- Reviewed evidence-based positive behavior support (PBS) practices for supporting individuals with ASD in supported and competitive workplaces
- Discussed the challenges of providing PBS in the workplace including (a) the public context, (b) smaller number of paid support staff available to implement the intervention, (c) limited access to staff with behavioral expertise, and (d) lower tolerance to invest time and resources to implement PBS intervention
- PBS strategies including (a) antecedent strategies and ecological modifications, (b) replacement behaviors and new skills, and (c) consequential strategies were also discussed

Future Research:

- Questions posed by the authors for future research included: (a) what assessments and types of work supports are most likely to increase success in the work place without disruption? (b) what array of supports will lead to

independence/interdependence at work? (c) what types of assessments, interventions, and data collection procedures are most acceptable to employers? (d) what work support models result in the highest level of successful placement for individuals with ASD?

**Schall, C. M., & McDonough, J. T. (2010). Autism spectrum disorders in adolescence and early adulthood: Characteristics and issues. *Journal of Vocational Rehabilitation, 32*, 81-88. doi: 10.3233/JVR-2010-0503 (Case study)**

Purpose:

- Case studies highlight some of the unique challenges faced by transition teams while students with ASD are in school (e.g., the need for self-determination skills rather than compliance and career awareness), as well as the supports needed after leaving school (e.g., positive behavior supports at work and on-going, intensive social skill instruction)

**McDuffie, K. A., Mastropieri, M. A., & Scruggs, T. E. (2009). Differential effects of peer tutoring in co-taught and non-co-taught classes: Results for content learning and student-teacher interactions. *Exceptional Children, 75*, 493-510. doi: 10.1177%2F001440290907500406 (Experimental)**

Purpose

- To determine the effects of peer tutoring to teach science

Participants:

- 203 middle school students with and without disabilities
  - Sixty-two of the students were identified as eligible for special education
  - Six students had autism

Procedure:

- Instruction in the peer tutoring condition differed in the warm-up activities during the first 10 minutes of each class when students participated in peer tutoring

Design:

- Two condition (i.e., peer tutoring vs. traditional instruction), by two settings (i.e., co-teaching vs. non-co-teaching), by two types of students (with vs. without disabilities) analysis of variance with pretests as covariates

Results:

- Participants in the peer tutoring condition outperformed participants receiving traditional instruction on unit tests, but no differences were observed on the overall cumulative posttest
  - Of significance, when identification and production questions were examined in the overall cumulative posttest, positive effects were found for peer tutoring on the identification items only
  - Participants in co-taught settings statistically outperformed participants non-co-taught settings on unit tests and the overall cumulative posttest

- Again, when identification and production questions were examined in the overall cumulative posttest, students in the co-taught settings outperformed students in non-co-taught settings on identification settings only
- Effect sizes (Cohen's *d*) indicated medium effect size on unit tests for the peer tutoring condition and a small to medium effect size for the co-teaching setting
  - Cumulative posttest effect sizes were much lower
- There was no interaction between co-teaching and peer tutoring
- Students with disabilities received more (teacher-initiated interactions), (b) individual interactions, (c) interactions of greater length, and (d) behavior-oriented interactions than students without disabilities
- Instructional methods used did not differ in co-taught and non-co-taught classes

**Higgins, K. K., Kocha, L. C., Boughfmana, E. M., & Vierstrab, C. (2008). School to work transition and Asperger's Syndrome. *Work, 31, 291-298. (Discussion)***

Purpose:

- To identify psychosocial and vocational characteristics of people with Asperger's Syndrome, supports needed to be successful in the workplace, and specific work related challenges of Asperger's Syndrome

Outcomes:

- Research indicates career education should have a dual focus to increase awareness of career opportunities compatible with abilities and interests of people with Asperger's Syndrome and provide them with practice opportunities to improve their general employment skills and enhance self-confidence

Implications:

- For transition teams: (a) emphasizing avenues of relevant work experiences such as part-time jobs, internships, service learning, and community-based work experiences; (b) assisting students in writing resumes highlighting their skills and relevant experience; (c) providing students with scripts, role-play scenarios, and immediate constructive feedback; (d) assisting in stress management training, tutoring, peer supports, faculty mentorships, career counseling, and referral to campus resources; and (e) providing job coach services that should include vocational training, restructuring of job duties, ensuring that employees complete job duties in appropriate manner and provide appropriate follow-up services
- For practice: (a) assisting and remedying problematic behaviors; (b) assisting employees with concentration by purchasing noise-cancelling headsets, relocating employee's office space away from audible and visual distractions, and installing cubicle walls to reduce visual distractions; and (c) communicating with employers about the advantages of hiring individuals with Asperger's

Syndrome such as cognitive abilities, attention to detail, loyalty, and dependability

**Lee, S.-H., Wehmeyer, M. L, Palmer, S. B., Soukup, J. H., & Little, T. D. (2008). Self-determination and access to the general education curriculum. *The Journal of Special Education, 42*, 91-107. doi: 10.1177/0022466907312354 (Experimental)**

Purpose:

- To examine the effectiveness of the SDLMI to teach students self-regulation

Participants:

- 45 high school students with disabilities of whom one student with autism was included in the experimental group

Procedures:

- Implementation of the model included a three-phase instructional process
- Two measures, the Arc's Self-Determination Scale and the AIR Self-Determination Scale, were used to determine student self-determination
- Momentary time-sampling method was used to measure student access to the general education curriculum
- Goal attainment scaling was used to assess student attainment of educational goals linked to core content areas in the general education curriculum

Design:

- Pretest-posttest randomized trial control group design

Results:

- The potential positive impact of promoting self-determination on access to the general education curriculum for students with disabilities
- Self-regulation had a positive relationship with academic response
- Although preliminary, results indicate student self-determination and self-regulation positively predicted student engagement and negatively correlated with competing behavior

**Palmen, A., Didden, R., & Arts, M. (2008). Improving question asking in high-functioning adolescents with autism spectrum disorders. *Autism: The International Journal of Research & Practice, 12*, 83-98. doi: 10.1177/1362361307085265 (Experimental)**

Purpose:

- To determine the efficacy of small group training consisting of feedback and self-management to teach question-asking skills during tutorial conversations adolescents with ASD

Participants:

- Nine adolescents diagnosed with high functioning autism between the ages of 17 and 25

Procedure:

- Training of question-asking skills consisted of verbal feedback and role-play during short simulated conversations and a table game

Design:

- Non-concurrent multiple baseline across groups design

Results:

- There was a functional relation between small-group training consisting of feedback and self-management was effective in improving question-asking skills during tutorial conversations of students with ASD

**Adreon, D., & Durocher, J. S. (2007). Evaluating the college transition needs of individuals with high-functioning autism spectrum disorders. *Intervention in School and Clinic, 42*, 271-279. doi: 10.1177/10534512070420050201 (Discussion)**

Purpose:

- Discussion of the related difficulties across various domains such as socialization, communication, academic functioning, independent daily living skills, choosing a college, and self-advocacy for individuals with high-functioning autism

Outcomes:

- Recommended strategies for a smooth transition from high school to postsecondary education for students with autism (e.g., reduced course loads, taking summer courses or courses while attending high school, avoiding classes back to back, taking time to participate in orientation activities to learn about the college campus and registration procedures)

**Hume, K., & Odom, S. (2007). Effects of an individual work system on the independent functioning of students with autism. *Journal of Autism and Developmental Disorders, 37*, 1166-1180. doi: 10.1007/s10803-006-0260-5 (Experimental)**

Purpose

- To determine the effects of an individual work system on independent work and play skills

Participants:

- Three individuals ages 6-20 with autism

Design:

- ABAB withdrawal design

Results:

- Using an individual work was effective for increasing independent work or play functioning for all participants
- Independent functioning, as measured by on-task behavior and reduction of teacher prompting improved for all participants

**Lee, S. H., Simpson, R. L., & Shogren, K. A. (2007). Effects and implications of self-**

**management for students with autism: A meta-analysis. *Focus on Autism and Other Developmental Disabilities*, 22, 2-13. doi: <https://doi.org/10.1177/10883576070220010101> (Meta-analysis)**

Purpose:

- Reviewed of eleven peer-reviewed single-subject research studies conducted between 1992-2001 on self-management strategies and autism

Design:

- Meta-analysis

Procedures:

- Percentages of nonoverlapping data (PND) between treatment and baseline phases were calculated for overall self-management intervention effect

Results:

- 78 unique PND scores with an overall mean PND of 81.9% representing an effective treatment
- Findings provide preliminary generic support for the efficacy of self-management interventions on increasing appropriate behaviors among students with autism

**Stokes, M., Newton, N., & Kaur, A. (2007). Stalking, and social and romantic functioning among adolescents and adults with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, 37, 1969-1986. doi: [10.1007/s10803-006-0344-2](https://doi.org/10.1007/s10803-006-0344-2) (Descriptive)**

Purpose:

- To determine if participants with high-functioning autism/Asperger's Syndrome would (a) differ in their sources of learning social and romantic knowledge and skills, (b) differ in level of romantic and social functioning, (c) engage in more unacceptable behaviors, and (d) persist in pursuit of a romantic interest for longer periods of time

Participants:

- Parents of 25 adolescents and adults with high-functioning autism or Asperger's Syndrome (aged 13-36 years) and 38 typically developing adolescents and adults (aged 13-30)

Design:

- Survey

Results:

- The group with high-functioning autism/Asperger's syndrome:
  - Relied less upon peers and friends for social and romantic learning
  - Had lower levels of social and romantic knowledge
  - Were more likely to engage in inappropriate courting behaviors
  - Were more likely to focus attention on celebrities, strangers, colleagues, and ex-partners

- Pursued their target for longer periods of time
- Recommendations were made for providing social skills training and sex education for this population through the use of peers

**Arndt, S. A., Konrad, M., & Test, D. W. (2006). Effects of the self-directed IEP on student participation in planning meetings. *Remedial and Special Education, 27*, 194-207. doi: 10.1177/07419325060270040101 (Experimental)**

Purpose:

- To examine the effects of the self-directed IEP to teach participation in IEP meetings

Participants:

- Five high school students ages 14-18 in self-contained settings with intellectual disabilities, autism, behavioral-emotional disabilities, and/or nonverbal learning disabilities

Design:

- Multiple baseline design across behaviors

Procedure:

- Participants were taught how to direct their own IEP meetings through model-lead-test instructional procedures using the Self-Directed IEP

Results:

- There was a functional relation between the implementation of the Self-Directed IEP and increased student participation in IEP planning meetings
- Participants generalized their newly learned skills to a real IEP meeting

Implications:

- Future research is needed to examine the effectiveness of the Self-Directed IEP with more students with autism.

**Todd, T., & Reid, G. (2006). Increasing physical activity in individuals with autism. *Focus on Autism and Other Developmental Disabilities, 21*, 167-176. doi: 10.1177/10883576060210030501 (Experimental)**

Purpose:

- To determine the effectiveness of self-management strategy instruction to teach leisure skills and physical activity

Participants:

- Three students between the ages of 15 and 20 diagnosed with autism and ID

Design:

- Changing conditions design

Procedure:

- The intervention included a self-monitoring board, edible reinforcement, and verbal directions and reinforcement

Results:



- the self-management strategy was associated with increased sustained participation in a snowshoe/walk/jog program.

**Stokes, M. A., & Kaur, A. (2005). High-functioning autism and sexuality: A parental perspective. *Autism: The International Journal of Research & Practice, 9*, 266-289. doi: <https://doi.org/10.1177/1362361305053258> (Descriptive)**

Purpose:

- Provided results of a study to determine if individuals with high-functioning autism would (a) display poorer social behaviors; (b) have poorer knowledge regarding privacy issues; (c) have less sex education; (d) display more inappropriate sexual behaviors; and (e) concerns would be greater for the parents of those with high-functioning autism

Design:

- Survey; compare sexual behaviors and determine whether specialized education is required using a sexual behavior scale

Participants:

- Parents of 23 adolescents/pre-adolescents with high-functioning autism and 50 typically developing adolescents/pre-adolescents (aged 10-15 years)

Results included:

- Displayed poorer social behaviors
- Had less knowledge of privacy issues and engaged in inappropriate behavior in public more often
- Had less sex education
- Displayed more inappropriate sexual behaviors such as touching others, touching self, and disrobing
- Parental concerns for those with high-functioning autism were higher than the control group

Implications:

- Recommended providing social skills training and sex education for this population

**Hammer, M. R. (2004). Using the self-advocacy strategy to increase student participation in IEP conferences. *Intervention in School & Clinic, 39*, 295-300. (Experimental)**

Purpose:

- to evaluate the Self-Advocacy Strategy to teach responses to IEP related questions and sharing of specific information

Participants:

- included three students ages 12-13 with learning disabilities, selective mutism, Tourette syndrome, obsessive compulsive disorder, attention-deficit disorder, and/or pervasive developmental disorder (n=1) from a private school setting in a self-contained classroom

Procedures:

- Students were taught how to respond to IEP related questions and share specific information with members of the IEP team through procedures such as IPLAN and SHARE Self-Advocacy Strategy CD-ROM

Design:

- Multiple baseline across subject design

Results:

- indicated using the Self-Advocacy Strategy has potential for future use by educators and students with varying disabilities and grade levels including autism.

Implications:

- Future research is needed to examine the effects of using the Self-Advocacy Strategy with generalization across disabilities, settings, and age groups.

**Mechling, L. C. (2004). Effects of multimedia, computer-based instruction on grocery shopping fluency. *Journal of Special Education Technology, 19, 23-34.* doi: 10.1177/016264340401900102 (Experimental)**

Purpose:

- to investigate the effectiveness of multimedia computer-based instruction (CBI) and constant time delay (CTD) to teach grocery shopping skills

Participants:

- Participants included three students ages 13-19 with mild to moderate intellectual disabilities, cerebral palsy, epilepsy, and/or autism

Procedures:

- Students were taught grocery shopping skills using CTD procedures and a CBI program

Results:

- Using a multiple probe across participants design, results indicated a functional relation between multimedia CBI, using a CTD visual prompt strategy, and increased grocery shopping fluency
  - The amount of time needed in the generalized setting to locate 12 times on the grocery shopping list decreased

**Orsmond, G. I., Krauss, M. W., & Seltzer, M. M. (2004). Peer relationships and social and recreational activities among adolescents and adults with autism. *Journal of Autism and Developmental Disorders, 34, 245-256.* doi: 10.1023/B:JADD.0000029547.96610.df (Descriptive)**

Purpose:

- Investigated (a) types of peer relationships, (b) frequency of participation in social and recreational activities, and (c) the individual and environmental factors that are predictive of having peer relationships

Participants:

- The social lives of 185 adolescents (ages 10-21) and 50 adults (ages 22-47) with autism spectrum disorders who lived at home were investigated by interviews of mothers of adolescents/adults

Results:

- Only a small percentage of the participants had at least one friend and almost half reported no peer relationships
- About 21% had at least one peer relationship that involved some activities outside of a prearranged setting
- About 24% had a peer relationship only in a prearranged setting
- Having peer relationships was predicted by individual characteristics including younger age and less impairment in social interaction skills
- Having peer relationships was not predicted by any environmental characteristics
- Greater participation in social and recreational activities was predicted by individual characteristics including greater functional independence, less impairment in social interaction skills, higher levels of internalizing behaviors
- Greater participation in social and recreational activities was predicted by environmental characteristics including greater maternal participation, greater number of services received, and inclusion in integrated settings while in school

**Mechling, L. C., & Gast, D. L. (2003). Multi-media instruction to teach grocery word associations and store location: A study of generalization. *Education and Training in Developmental Disabilities, 38, 62-76. (Experimental)***

Purpose:

- The purpose of this study was to determine the effects of multi-media instruction simulations with constant time delay (CTD) procedures to locate grocery items using aisle signs

Participants:

- included three students ages 11-18 with mild to moderate disabilities, cerebral palsy, and/or autism

Procedures:

- Students were taught to locate grocery items using aisle signs and multi-media instruction simulations with CTD procedures

Results:

- Using a multiple probe design across three sets of word pairs, replicated across three participants, a functional relation between a multi-media program of simulated instruction and ability to match words from a grocery list to grocery store aisle signs

- Participants also generalized skills to one other grocery store

**Nuehring, M. L., & Sitlington, P. L. (2003). Transition as a vehicle: Moving from high school to an adult vocational service provider. *Journal of Disability Policy Studies, 14*, 23-35. doi: 10.1177/10442073030140010401 (Case study)**

Purpose:

- To examine the transition of a high school senior with autism and a secondary diagnosis of severe mental retardation (age 21 years)

Participant:

- High school senior with autism and a secondary diagnosis of severe mental retardation (age 21 years)

Results:

- The steps the school and his educational team made to prepare him for the transition included:
  - Using the IEP to drive the transition
  - Using an outcomes-based approach
  - Using assessments to determine the individual's preferences, strengths, and needs
  - Using preferences, strengths, and needs to guide programming
  - Switching from an inclusion-based focus to a community-based focus
  - Providing functional academic instruction related to transition
- Described three other individuals and the vocational service programs provided
- Strengths of each program included:
  - Each program was fulfilling a critical community need
  - Each program provided choices and a transition specialist
  - One service utilized assessments
- Needs of each program included:
  - More education is needed for high school teachers and the staff of vocational service providers
  - Assessments should be utilized
  - Communication should be increased among the individual, his or her family, the school, and the service provider
  - Programming needs to be aligned between the school and the provider

**Mason, C. Y., McGahee-Kovac, M., Johnson, L., & Stillerman, S. (2002). Implementing student-led IEPs: Student participation and student and teacher reactions. *Career Development for Exceptional Individuals, 25*, 171-192. doi: 10.1177/088572880202500206 (Descriptive)**

Purpose:

- To determine the effectiveness of student-led IEPs to teach to students to lead their own IEP meetings

Participants:

- Participants included 43 students in grades 9-11 with learning disabilities, autism (n=1), Landau-Kleffner, mental retardation, traumatic brain injury, and/or physical disabilities

Procedures:

- Students were trained by teachers in how to lead their own IEP meetings using the Student-led IEPs: A Guide for Student Involvement over six instructional sessions

Results:

- Results from general and special educator interviews indicated that student led IEPs improved the overall process
- Results gathered from IEP meeting observations and interviews indicated that students could explain the IEP process and the importance; they understood their disability, strengths, weaknesses and accommodations; and they realized the benefits of leading the IEP meeting

**Mechling, L. C., Gast, D. L., & Langone, J. (2002). Computer-based video instruction to teach persons with moderate intellectual disabilities to read grocery aisle signs and locate items. *The Journal of Special Education, 35, 224-240.* doi: 10.1177/002246690203500404 (Experimental)**

Purpose:

- To determine the effectiveness of computer-based video instruction to teach sight word reading of aisle signs and the location of grocery items on the shelves

Participants:

- Four students ages 9-17 with moderate intellectual disabilities, cerebral palsy, Down syndrome, and/or autism

Procedures:

- Students were taught to decode words found in grocery store aisles and how to locate items using a task analysis with system of least prompts and computer-based video instruction

Results:

- Using a multiple probe design across three sets of word pairs, replicated across four participants, results indicated a functional relation between computer-based video instruction and generalized reading of grocery aisle heading words and location of grocery items within those aisles when using both photograph and typed word shopping lists

**Koning, C., & Magill-Evans, J. (2001). Social and language skills in adolescent boys with Asperger syndrome. *Autism, 5, 23-36.* doi: 10.1177/1362361301005001003 (Descriptive)**

Purpose:

- To assess 21 adolescent males with Asperger Syndrome and 21 males matched on age and IQ (aged 12-15) on social perception, social skills, number of close friends, contact with friends, and expressive and receptive language

Participants:

- 21 adolescent males with Asperger Syndrome and 21 males matched on age and IQ (aged 12-15)

Results:

- Those with AS showed differences in social perception and used fewer cues to infer emotional states
- Those with AS were rated lower in the areas of self-control and responsibility
- Those with AS were rated as having fewer friends, less frequent social contact, and lower social competence
- Differences emerged in the ratings provided by the individuals with AS, teachers, and parents

**Morrison, L., Kamps, D., Garcia, J., & Parker, D. (2001). Peer mediation and monitoring strategies to improve initiations and social skills for students with autism. *Journal of Positive Behavior Interventions*, 3, 237-250. doi: 10.1177/109830070100300405 (Experimental)**

Purpose:

- To determine the effectiveness of social skills instruction using peer mediation, self-monitoring, peer monitoring, and reinforcement to teach initiations to peers during game play

Participants:

- Four students ages 10-13 with autism selected from a group participating in a longitudinal study

Procedures:

- Students were taught social skills and monitoring for appropriately requesting, commenting, and sharing during leisure activities (e.g., games, activities)

Results:

- Using a multiple baseline across skills with a counterbalanced reversal design, teaching social skills using peer mediation, self-monitoring, peer monitoring, and reinforcement was effective in increasing initiations by students with autism to their peers during game play

**Fullerton, A., & Coyne, P. (1999). Developing skills and concepts for self-determination in young adults with autism. *Focus on Autism and Other Developmental Disabilities*, 14, 42-52. doi: 10.1177/108835769901400106 (Descriptive)**

Purpose:

- To describe the impact of a program (i.e., Putting Feet on My Dreams) to develop knowledge and skills of self-determination for young adults with autism

Participants:

- 23 students ages 16-28 with autism and/or Asperger's syndrome

Procedures:

- The program taught both parents and students about autism, communication skills, life planning, and goal setting

Results:

- Using a pretest-posttest interviews were conducted with students and parents, findings from students suggest that classes on self-determination topics related to autism were helpful, and interactions between other individuals with autism and their families were beneficial
- Findings from parents suggests that classes offered around communication skills had an impact on their child's development

Implications:

- Suggestions for supporting self-determination for individuals with autism included exploring the student's ways of thinking, expanding students' choices, and helping student's self-monitor their goal attainment

**Stowitschek, J. J., Laitinen, R., & Prather, T. (1999). Embedding early self-determination opportunities in curriculum for youth with developmental disabilities using natural teaching incidents. *Journal for Vocational Special Needs Education, 21, 15-26. (Experimental)***

Purpose:

- To determine the effectiveness of the Transition Choices Program (TCP) using a naturalistic teaching approach to teach choice making and preference awareness

Participants:

- Five junior high and seven high school students ages 12-17 with developmental delay, mental retardation, multiple handicaps, and/or autism (n=1)

Procedures:

- Students were taught to make appropriate choices in asking for assistance and respecting the preferences of others in daily school routines using the TCP

Results:

- Using small group nonparametric design, results indicated students' performance with choice making and preference awareness increased with TCP instruction

Implications:

- Future research is needed to follow up with students that have received TCP instruction in order to assess how this instruction influences lifelong transition skills.

**Frea, W. D. (1997). Reducing stereotypic behavior by teaching orienting responses to environmental stimuli. *Research and Practice for Persons with Severe Disabilities, 22, 28-35. doi: 10.1177/154079699702200103 (Experimental)***

Purpose:

- To determine the effectiveness of an external prompt (i.e., watch chime) to teach orienting responses (verbal comments about their environment while on a walk) to decrease stereotypic behavior

Participants:

- Two students ages 15 and 23 with autism functioning within the mild-severe range of intellectual disabilities

Procedures:

- Participants were taught to increase orienting responses and comment on external stimuli in community settings using gesturing and verbal prompting

Results:

- Results indicated an increase in verbal responding to environmental stimuli and decreases in stereotypic behaviors

**Haring, T. G., Breen, C. G., Weiner, J., Kennedy, C. H., & Bednersh, F. (1995). Using videotape modeling to facilitate generalized purchasing skills. *Journal of Behavioral Education*, 5, 29-53. doi: 10.1007/BF02110213 (Experimental)**

Purpose:

- To determine the effectiveness of videotape modeling to teach generalized purchasing skills

Participants:

- Participants included six students ages 10-16 with mental retardation and autism (n=3)

Procedures:

- Students were taught purchasing skills using videotape modeling across three stores and in vivo instruction in one store

Results:

- Using a multiple probe across settings design, results indicated a functional relation between direct community instruction combined with videotape modeling in promoting generalization of shopping skills.
  - There was a greater frequency of independent purchases for all participants across multiple stores after vivo training in one store and video training in one to three additional stores

**Lasater, M.W., & Brady, M.P. (1995). Effects of video self-modeling and feedback on task fluency: A home based intervention. *Education and Treatment of Children*, 18, 389-407. (Experimental)**

Purpose:

- To determine the effectiveness of video modeling to teach food preparation

Participants:

- Two students ages 14 and 15, one was identified with pervasive developmental disorder and the other with autism

Results:

- Using a multiple baseline across tasks design, results indicated (a) increased task fluency, (b) generalized increases in task fluency to other tasks, and (c) decreased task interfering behavior.



**Luce, S. C., & Dyer, K. (1995). Providing effective transitional programming to individuals with autism. *Behavioral Disorders, 21*, 36-52. doi: 10.1177/019874299502100105 (Discussion)**

Purpose:

- Discussed the implementation of transitional programming for individuals with severe and pervasive disabilities, including autism
  - Stated that transitional programming is designed to correspond with the ever increasing lifestyle expectations for individuals and to move them towards greater independence and less support
  - Suggested an organizational process for developing an effective transition program which includes: (a) ensuring organizational support; (b) establishing program objectives; (c) ensuring measurement, reliability, and validity; (d) providing feedback to program staff; and (e) developing action plans to improve transitional services
  - Provided an example of a wide-scale conversion of an agency that resulted in a more progressive transition program

**Carr, E. G., & Carlson, J. (1993). Reduction of severe behavior problems in the community using a multicomponent treatment approach. *Journal of Applied Behavior Analysis, 26*, 157-172. (Experimental)**

Purpose:

- To determine the effects of a multicomponent intervention (i.e., choice embedding, functional communication training, building tolerance for delay of reinforcement, and presentation of discriminative stimuli for non-problem behaviors to teach completion of a shopping expedition (measured by percentage of task steps completed and latency)

Participants:

- Three individuals ages 16-18 with autism living in a group home who exhibited a history of serious behavior problems in community settings including aggression, property destruction, self-injurious behaviors, and tantrums which led to being excluded from participating in community activities (e.g., shopping expeditions)

Procedures:

- The intervention taught individuals to reduce severe behaviors using a multicomponent treatment intervention consisting of five procedures which included choice embedding, functional communication training, building tolerance for delay of reinforcement, and presentation of discriminative stimuli for non-problem behaviors

Results:

- Using a multiple baseline across subjects design, results indicated a functional relation between the multicomponent intervention and completion of a shopping expedition in the community

**Koegel, R. L., & Frea, W. D. (1993). Treatment of social behavior in autism through the modification of pivotal social skills. *Journal of Applied Behavior Analysis, 26*, 369-377. doi: 10.1901/jaba.1993.26-369 (Experimental)**

Purpose:

- To determine the effects of a self-management procedure with modeling to teach individual social communicative behaviors

Participants:

- Two students ages 13 and 16 with autism functioning within the mild range of intellectual disabilities

Results:

- Using a multiple baseline design, results indicated participants were able to modify their social communicative behaviors during conversational interactions with peers
  - Additionally, it was noted the behaviors appeared to be part of a response class because changes also occurred in untreated behaviors.

**MacDuff, G. S., Krantz, P.J., & McClannahan, L. E. (1993). Teaching children with autism to use photographic activity schedules: Maintenance and generalization of complex response chains. *Journal of Applied Behavior Analysis, 26*, 89-97. (Experimental)**

Purpose:

- To determine the effects of pictorial schedules and graduated guidance to teach on-task and on-schedule behaviors

Participants:

- Four students ages 9-14 with autism and long histories of disruptive behavior (e.g., aggression, tantrums, running away)

Procedures:

- Individuals were taught to use pictorial schedules along with graduated guidance to increase their on-task and on-schedule behaviors in a community-based Teaching-Family Model group home

Results:

- Using a multiple baseline across participants design, results indicated that photographic schedules enabled participants to exhibit lengthy (e.g., up to one hour) and complex chains of on-task behavior (e.g., home living, recreational)

**Winterling, V., Gast, D. L., Wolery, M., & Farmer, J. A. (1992). Teaching safety skills to high school students with moderate disabilities. *Journal of Applied Behavior Analysis, 25*, 217-227. doi: 10.1901/jaba.1992.25-217 (Experimental)**

Purpose:

- To determine the effectiveness of a multicomponent intervention (i.e., orientation lecture, pre-task demonstration, 5-s constant time delay) to teach safety skills

Participants:

- Three students ages 17 to 21, with moderate and severe ID and autism

Procedures:

- Participants were taught to remove and discard broken materials (e.g., plates, glasses) from safely from a sink containing dish water, a countertop, and a floor

Results:

- Using a multiple probe across participants design, results indicated the intervention was effective in teaching the safety skills

**Burt, D. B., Fuller, S. P., & Lewis, K. R. (1991). Competitive employment of adults with autism. *Journal of Autism and Developmental Disorders*, 21, 237-242. (Case study)**

Purpose:

- To provide a case study of four adults with autistic disorder

Participants:

- Four adults with autistic disorder (aged 21-29) who were enrolled in a work-training program utilizing a behavioral social interaction approach and were subsequently competitively employed

Procedures:

- Participants participated in a 4-month individualized training program in order to address the following goals: (a) facilitate generalization of effective communication and socially acceptable skills, (b) decrease dependence on prompts, and (c) enhance the ability to internalize control over his/her behavior

Results:

- Employment success was associated with the following factors:
  - Appropriate communication
  - Interpersonal skills
  - Gradual fading of supervision
  - Family support

**Haring, T. G., Kennedy, C. H., Adams, M. J., & Pitts-Conway, V. (1987). Teaching generalization of purchasing skills across community settings to autistic youth using videotape modeling. *Journal of Applied Behavior Analysis*, 20, 89-96. doi: 10.1901/jaba.1987.20-89 (Experimental)**

Purpose:

- To determine the effectiveness of videotape modeling to promote generalization of purchasing skills within the school and various community settings.

Participants:

- Three 20-year old students with autism and developmental delay.

Results:

- Using a multiple baseline across participants, results indicated a functional relation between videotape modeling procedures and generalization of purchasing skills to tree community stores

## Secondary Transition Predictors

### Introduction

Information in this section is provided for secondary predictors. Predictors are macro level variables that influence systems, programs, and general practices and skills students need to be successful after high school. References are in reverse chronological order starting with the most recent ones and the type of experimental design is noted in parenthesis after each citation.

**Nye-Lengerman, K. (2017). Vocational rehabilitation service usage and outcomes for individuals with Autism Spectrum Disorder. *Research in Autism Spectrum Disorders, 41*, 39-50. doi: 10.1016/j.rasd.2017.08.003 (Correlational)**

Purpose:

- To explore the relationships of participant characteristics and service delivery patterns on vocational rehabilitation (VR) employment outcomes for individuals with ASD

Participants:

- Participant data were extracted and analyzed from the Rehabilitation Service Administration Case Service Report (FY 2013 database) and included 10,209 individuals who had a primary or secondary impairment source listed as Autism and received at least one VR service in FY 2013

Results:

- Descriptive and inferential statistics showed:
  - the types of ASD impairment (e.g., psychosocial, cognitive, communicative, other mental) was not predictive for the most common VR services (e.g., assessment, vocational rehabilitation counseling and guidance, job search, job placement, and on-the-job support) with the exception of assessment.
  - the type of service received was related to likelihood of experiencing case closure in integrated employment.
  - additional variables related to gender, race, and state system decreased the likelihood of receiving certain VR services or achieving integrated employment in some cases

**Kaya, C., Chan, F., Rumrill, P., Hartman, E., Wehman, P., Iwanga, & Avellone, L. (2016). Vocational rehabilitation services and competitive employment for transition-age youth with autism spectrum disorders. *Journal of Vocational Rehabilitation, 45*, 73-83. 10.3233/JVR-160812 (Correlational)**

Purpose:

- To explore the relationships between participant characteristics, Social Security disability benefits, and VR services and competitive employment outcomes for transition-age youth with ASD

Participants:

- Participant data were extracted and analyzed from the Rehabilitation Service Administration Case Service Report (FY 2011 database) and included 4,322 VR clients with a primary diagnosis of autism, between the ages of 16 to 25 at the time of application for VR services, and were unemployed at the time of application for VR services

Results:

- Purposeful selection multivariate logistic regression analysis showed:
  - When individuals with ASD received on-the-job support, job placement services, rehabilitation technology, occupational/vocational training, job search assistance, vocational counseling and guidance, and job readiness training from VR they were more likely to obtain competitive employment
  - The strongest predictors of competitive employment were on-the job support and job placement services
  - Individuals with ASD are not consistently accessing these services

**Kirby, A. V. (2016). Parent expectations mediate outcomes for young adults with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 46*, 1643-1655. doi: 10.1007/s10803-015-2691-3 (Correlational)**

Purpose:

- To confirm predictive relationships from family background to functional performance as well as family background and function performance variables to young adult outcomes

Participants:

- NLTS-S wave one parent expectations was tested as a mediator of outcomes.

Procedures:

- This study used existing empirical data on relationships between individual variables from the NLTS2 and incorporated latent variables to analyze broader longitudinal relationships

Results:

- Results indicated family background and functional performance variables significantly predicted parent expectations which significantly predicted outcomes. (Correlational)

Implications:

- Findings add context to previous studies examining the role of parent expectations on young adult outcomes and inform directions for family-centered interventions and future research.

**Zalewska, A., Migliore, A., & Butterworth, J. (2016). Self-determination, social skills, job search, and transportation: Is there a relationship with employment of young adults with autism? *Journal of Vocational Rehabilitation, 45*, 225-239. doi: 10.3233/JVR-160825 (Correlational)**

Purpose:

- To increase knowledge about the relationships between self-determination, social skills, job search, and employment of young adults with autism, within the same analytical context provided by the National Longitudinal Transition Study-2 (NLTS2)

Results:

- Findings did not confirm a relationship between employment and most of these factors.
- Only a subscale of self-determination (psychological empowerment) and transportation independence were associated with employment outcomes of young adults with autism.

Implications:

- The authors recommend transportation independence be a component of educational programs for students with autism in preparation for their professional careers.
- Additionally, the authors recommend improving instruments and data collection practices to accurately gauge self-determination, social skills, and job search practices before concluding that these factors are not associated with employment outcomes.

**Chiang, H.-M., Cheung, Y. K., Li, H., & Tsai, L. Y. (2013). Factors associated with participation in employment for high school leavers with autism. *Journal of Autism and Developmental Disorders, 43*, 1832–1842. doi: 10.1007/s10803-012-1734-2 (Correlational)**

Purpose:

- To identify the factors associated with participation in employment for high school leavers with autism

Procedures:

- A secondary data analysis of NLTS2 data was performed including 4,167 students with autism.

Results:

- Of the total number of students with autism, 2,333 (56%) had participated in employment since leaving high school

- High school leavers with autism who participated in employment worked across 20 different types of jobs.
- The top five types of jobs were material recording, scheduling, dispatching, and distribution, information and record clerks, building cleaning and pest control, retail sales, and other production occupations.
- The mean hourly wage for high school leavers with autism who participated in employment was \$7.90.
- Weighted multivariate logistic regression analysis showed:
  - High school leavers with autism from low income families are less likely to participate in employment compared to those from medium and high income families.
- Being without an intellectual disability, having a high school diploma, having high social skills, receiving career counseling, school contact with postsecondary vocational training programs/potential employers, and being female were factors significantly associated with participation in postsecondary employment for high school leavers with autism

**Berry, H. G., Ward, M., & Caplan, L. (2012). Self-determination and access to postsecondary education in transitioning youths receiving supplemental security income benefits. *Career Development and Transition for Exceptional Individuals, 35*, 68–75. doi: 10.1177/0885728811422230 (Correlational)**

Purpose:

- To examine data from the NLTS2 in relation to receipt of SSI benefits, levels of self-determination, and engagement in postsecondary education

Procedures:

- Data were collected on a subset of 1,697 students with disabilities who were receiving SSI benefits.
  - Students with autism n=207.

Results:

- Logistic regression analysis, results indicated:
  - students with orthopedic impairments, intellectual disability, or autism were more likely to receive SSI when compared with all transition-age students with disabilities.
  - higher levels of self-determination were associated with increased likelihood of participant in postsecondary education in transition-age youth with disabilities who were receiving SSI benefits.
  - Higher levels of empowerment and autonomy were associated with higher likelihood of participation in both 2-year and 4-year colleges.

**Carter, E. W., Austin, D., & Trainor, A.A. (2012). Predictors of postschool employment outcomes for young adults with severe disabilities. *Journal of Disability Policy Studies, 23*, 50–63. doi: 10.1177/1044207311414680 (Correlational)**

Purpose:

- To determine the effect of student demographics, student skills (e.g., social communication, and self-care), family factors (e.g., family resources and parent expectations), and high school career development programming on the early post-employment outcomes of young adults with severe disabilities.

Procedures:

- Data were analyzed using a small subsample from multiple waves of the NLTS2 that included 450 students with severe disabilities (i.e., autism n=160, intellectual disability, and multiple disabilities).

Results:

- Logistic regression analyses showed:
  - Paid work experiences during high school were strongly associated with post-school work status during students' first 2 years after leaving high school for students with severe disabilities.
  - Expectations of parents regarding the capacity of their child to obtain a post-school job or eventually become self-supporting were strongly associated with whether that child was working shortly after exiting the school system.

**Chiang, H., Cheung, Y. K., Hickson, L., Xiang, R., & Tsai, L.Y. (2012). Predictive factors of participation in postsecondary education for high school leavers with autism. *Journal of Autism and Developmental Disorders, 42*, 685–696. doi: 10.1007/s10803-011-1297-7 (Correlational)**

Purpose:

- To explore the factors predictive of participation in postsecondary for high school leavers with autism

Procedures:

- A secondary analysis was conducted on data from the NLTS2 and included 830 secondary school students whose primary disability was autism

Results:

- Backward logistic regression analysis showed:
  - The high school's primary post-high school goal for the student, parental expectations, high school type, annual household income, and academic performance were significant predictors of participation in postsecondary education

**Doren, B., Gau, J., & Lindstrom, L. (2012). The relationship between parent expectations and postschool outcomes of adolescents with disabilities. *Exceptional Children, 79*, 7-23. (Correlational)**



Purpose:

- To examine the main effects of parent expectations on the high school graduation and post-school outcomes achieved, demographic moderators, and adolescent autonomy as a mediator of parent expectations and outcomes of adolescents with disabilities who have been out of school for 4 years

Results:

- Linear logistic regression analysis showed:
  - parent expectations regarding graduating from high school with a standard diploma, obtaining a paid job, and attending a postsecondary education after high school or both obtaining a job and attending postsecondary education were both significantly and positively associated with individuals with disabilities achieving these outcomes.
  - Parents of adolescents with learning disabilities held higher expectations for in-school and post-school achievement than parents of adolescents with intellectual disability, autism, or multiple disabilities

**Baer, R. M., Flexer, R. W., Beck, S., Amstutz, N., Hoffman, L., Brothers, J., ... & Zechman, C. (2003). A collaborative followup study on transition services utilization and post-school outcomes. *Career Development for Exceptional Individuals, 26, 7-25. (Correlational)***

- The purpose of this study was to develop a cost-effective way to evaluate transition services and post-school outcomes of students with disabilities.
- Data were collected on 140 randomly selected special education graduates who were one and three years post-graduation.
- The study sample included two students with ASD.
- Logistic regression analysis showed:
  - vocational education, work study participation, attending a rural school, and having a learning disability were the best predictors of full-time employment after graduation.
  - participation in regular academics and attending a suburban school were the best predictors of postsecondary education.

**Repetto, J. B., Webb, K. W., Wilson, C. G., & Washington, T. (2002). Connecting student outcomes with transition practices in Florida. *Career Development of Exceptional Individuals, 25, 123-139. doi:10.1177/088572880202500203 (Correlational)***

Purpose:

- To explore the relationships between transition program characteristics of local school districts and the post-school outcomes of individuals with disabilities

Participants:

- Participant data were extracted from the transition services database from all 67 Florida school districts over the past seven years

Procedures:

- Statistical analyses showed:
  - emerging trends that are the same as best practices identified in the literature
- However, findings could not be determined as a distinct, defining data set

Implications:

- The authors suggested findings of this exploratory research need further investigation with more rigorous analysis and consistent use of common terminology related to transition.

**Benz, M. R., Yovanoff, P., & Doren, B. (1997). School-to-work components that predict postschool success for students with and without disabilities. *Exceptional Children, 63*, 151-165. doi: 10.1177/001440299706300201 (Correlational)**

Purpose:

- To investigate the extent to which instructional programs and skill outcomes seen as important components of school-to-work transition programs predict the outcomes of students with and without disabilities

Participants:

- Data were collected on 327 students (with disabilities n=218, without disabilities n=109)
  - There were 16 students reported to have autism, multiple disabilities or a traumatic brain injury.

Results:

- Logistic regression analysis showed:
  - career awareness skills were strongly predictive of whether students with and without disabilities were productively engaged for their entire first year out of school but was unrelated to better competitive employment outcomes for students in this study.
  - students with disabilities who exited school with high reading, writing, and math skills were twice as likely to be competitively employed as those with low skills.
  - participation in two or more work experiences during the last two years of school, as well as achievement of job search skills at the time of leaving school, were strong predictors of competitive employment one year out of school for students with and without disabilities.

**Heal, L. W., Khoju, M., & Rusch, F. R. (1997). Predicting quality of life of youths after they leave special education high school programs. *The Journal of Special Education, 31*, 279-299. (Correlational)**

Purpose:

- To identify the background characteristics associated with elevated quality of life for high school leavers with disabilities

Procedures:

- Data analyzed were from a subset of NLTS data and included 713 students with disabilities

Results:

- Three quality of life composites (i.e., esteem, independence, and support) were constructed from conventional item analyses.
- These composites were related to 28 geo-economic, demographic, cognitive, disability, and school program variables using a regression
  - analyses for each quality of life domain and a canonical correlation for all three.
- Hierarchical multiple regression analysis was used to identify the significant predictors of each of the three composites.
  - The three canonical dimensions were labeled general competence, sensory disability, and valued support because of the quality of life variables and predictor variables with which they were correlated.
  - There were very few quality of life variables that were not related to competence.

**Halpern, A. S., Yovanoff, P., Doren, B., & Benz, M. R. (1995). Predicting participation in postsecondary education for school leavers with disabilities. *Exceptional Children, 62*, 151-164. doi: 10.1177/001440299506200205 (Correlational)**

Purpose:

- To examine predictors of participation in postsecondary education for high school leavers with disabilities

Participants:

- Data analyzed included 563 students with disabilities of whom 11 were identified with autism, multiple disabilities, or traumatic brain injury

Results:

- Multivariate logistic regression analysis found six predictors associated with participation in postsecondary education for students with disabilities (a) high scores on a functional achievement inventory, (b) completing instruction successfully in certain curricular areas, (c) participating in transition planning, (d) parent satisfaction with instruction received by the student, (e) student satisfaction with instruction received, and (f) parent perception that the student no longer needed help in certain critical skill areas

**Heal, L. W., & Rusch, F. R. (1994). Prediction of residential independence of special education high school students. *Research in Developmental Disabilities, 15*, 223-243. doi: 10.1016/0891-4222(94)90013-2 (Correlational)**

Purpose:

- To identify community, family, study, and school program characteristics associated with residential placement independence for high school leavers with disabilities

Procedures:

- A secondary regression analysis of NLTS data featured 37 community, family, student, and program characteristics

Results:

- Student problem behavior, student competences, and family characteristics contributed significantly to the prediction of post-school residential independence

## Post-School Outcomes

### Introduction

The purpose of this section of the annotated bibliography is to summarize relevant research on the post-school outcomes of individuals with ASD and provide practitioners, families, special education professionals, and researchers information on current literature related to post-school outcomes this population.

#### **What are the current post-school outcomes for individuals with autism?**

Individuals with disabilities continue to achieve lower post-school outcomes in the areas of education, employment, and independent living compared to their peers without disabilities (Lipscomb et al., 2017; Newman et al., 2011). Specifically, data from the National Longitudinal Transition Study-2, indicate individuals with autism spectrum disorder (ASD) attend and complete postsecondary education programs at lower rates, experience lower rates of employment, earn less money, work fewer hours, are less engaged in their communities, and live independently less often than their peers without disabilities. For example, only 43.9% of students with ASD ever attended any type of postsecondary education (i.e., 2-year or community colleges, vocational, business, or technical schools, 4-year colleges or universities) compared to 67.4% of students without disabilities. In addition, only 37.2% of individuals with ASD were employed compared to 66.1% of their peers without disabilities. According to the National Longitudinal Transition Study (NLTS, 2012), students with ASD had less paid work experience in the past year compared to their peers with other disabilities (23% vs. 40%). In addition, data from the NLTS (2012) indicates individuals with ASD struggle more with daily living skills than their peers in other disability categories. For example, only 17% of student with ASD perform daily living activities well compared to an average of 46% of youth in other disability categories (Lipscomb et al., 2017). Lastly, for students with ASD their parents had lower expectations of them living independently by the age of 30 compared to parents of students with other disabilities (49% vs. 78%).

#### **Why are understanding post-school outcomes for individuals with autism important for transition planning?**

The Individuals with Disabilities Education Act (IDEA, 2004) mandates transition services be part of students' individualized education program (IEP) to help them develop the skills needed to achieve their post-school goals. IDEA (2004) indicates that the purpose of special education is to equip students with disabilities for further education, employment, and independent living. In order to improve post-school outcomes for individuals with ASD, several studies have identified some practices for increasing the likelihood of better post-school outcomes. For example, Wei et al. (2016) found among students with ASD, participation in their transition planning and the identification of a transition goal focused on enrolling in college or postsecondary education during high school was associated with an increased likelihood of attending postsecondary education. Additionally, Wehman et al. (2014) suggested that in order to help individuals prepare for their post-school lives, transition services focused on post-school goals should take place before students exit high school. Early services can provide a longer timeframe for students with ASD to develop and prepare for post-school environments. For example, Cimera et al. (2014) conducted a study to analyze four years of vocational rehabilitation data and results indicated individuals with ASD who received transition services at age 14 were significantly more likely to be employed than those who did not receive transition services until age 16. Lastly, Test, Smith, and Carter (2014) reviewed important elements of transition education for students with ASD and discussed a framework focused on three aspects of high school including access to rigorous learning experiences, instruction relevant to life after high school, and increasing supportive relationships.

#### References for Introduction

- Cimera, R. E., Burgess, S., & Wiley, A. (2014). Does providing transition services early enable students with ASD to achieve better vocational outcomes as adults? *Research and Practice for Persons with Severe Disabilities, 38*, 88–93.
- Lipscomb, S., Haimson, J., Liu, A.Y., Burghardt, J., Johnson, D.R., & Thurlow, M.L. (2017). *Preparing for life after high school: The characteristics and experiences of youth in special education. Findings from the National Longitudinal Transition Study 2012. Volume 2: Comparisons across disability groups: Full report* (NCEE 2017-4018). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance.
- Newman, L., Wagner, M., Knokey, A. M., Marder, C., Nagle, K., Shaver, D., & Swarting, M. (2011). *The post-high school outcomes of young adults with disabilities up to 8 years after high school* (A report from the National Longitudinal Transition Study–2 [NLTS2; NCSE 2011-3005]). Menlo Park, CA: SRI International.

Test, D. W., Smith, L. E., & Carter, E. W. (2014). Equipping youth with autism spectrum disorders for adulthood: Promoting rigor, relevance, and relationships. *Remedial and Special Education, 35*, 80-90.

Wehman, P., Schall, C., Carr, S., Targett, P., West, M., & Cifu, G. (2014). Transition from school to adulthood for youth with autism spectrum disorder: What we know and what we need to know. *Journal of Disability, Policy Studies, 25*, 30–40.

Wei, J., Yu, J. W., Shattuck, P., McCracken, M., & Blackorby, J. (2013). Science, technology, engineering, and mathematics (STEM) participation among college students with an autism spectrum disorder. *Journal of Autism and Developmental Disorders, 43*, 1539–1546. doi:10.1007/s10803-012-1700-z

### **Annotated Bibliography on Post-School Outcomes for Individuals with ASD**

**Shattuck, P. T., Lau, L., Anderson, K. A., & Kuo, A. A. (2018). A national research agenda for the transition of youth with autism. *Pediatrics, 141* (Supplement 4), S355-S361. (Report)**

Purpose:

- To outline a national research agenda to improve the transition from school to adulthood for youth with autism

Results:

- Results from the following five activities were synthesized to inform the research agenda:
  - A review of autism research and research priority statements from funding and advocacy organizations
  - A series of interviews with stakeholders recruited for having extensive knowledge of autism and transition issues
  - A National Research Agenda meeting in Washington, DC
  - A modified Delphi survey of the Health Care Transitions Research Network for Autism Spectrum Disorder and other Developmental Disabilities
  - Two formal reviews of published literature on autism and transition

Implications:

- A top research priority that emerged was the need for more studies to combine focus on community- and systems-level approaches to measuring outcomes with population-level approaches to measuring outcomes.
- A second priority was the need to increase involvement of individuals on the autism spectrum in establishing research priorities, designing research studies, and producing findings and recommendations from studies.

**Hong, E. R., Davis, J. L., Neely, L., Ganz, J. B., Morin, K., Ninci, J., & Boles, M. B. (2017).**

**Functional living skills and adolescents and adults with autism spectrum disorder: A meta-analysis. *Education and Training in Autism and Developmental Disabilities*, 52, 268 - 279. (Literature review)**

Purpose:

- To systematically review and meta-analyze peer-reviewed research pertaining to the functional living skills of individuals with ASD.

Procedures:

- Thirty-two single-case studies across 86 participants were included in this analysis

Results:

- Educational interventions for teaching functional living skills to adolescents and young adults (were analyzed to determine magnitude of effects
- Variables investigated:
  - Four independent variables (a) audio cueing, (b) video modeling, (c) behavioral in-vivo, and (d) visual cues
    - All variables had strong effects. However, audio cueing, behavioral in-vivo, and visual cues had seven or fewer studies, and results should be viewed with caution
    - There is a strong literature base to support using video modeling as an intervention to teach functional living skills to adolescents and adults with ASD
  - Participant diagnoses
    - Strongest effects were for individuals with autism and intellectual disability and for individuals with ASD or autism
  - Four dependent variables, type of functional living skill taught (a) employment skills (b) self-help skills, (c) house chores, and (d) community access skills
    - Employment skills was most often investigated
- Additional analysis indicated video modeling is a viable intervention to teach functional living skills to adults and adolescents with diagnosed with autism and comorbid intellectual disability; video modeling is moderately effective for teaching employment skills, house chores, and community access skills to adolescents and adults with ASD and strongly effective for teaching self-help skills to this population

**Nasamran, A., Witmer, S. E., & Los, J. E. (2017). Exploring predictors of postsecondary outcomes for students with autism spectrum disorder. *Education and Training in Autism and Developmental Disabilities*, 52, 343-356. (Correlational)**

Procedures:

- Logistic regression analyses, using NLTS2 data, were conducted to explore the extent to which academic skills and social skills predict postsecondary outcomes for students with ASD

Results:

- Results indicated academic achievement was significantly related to postsecondary education and overall success
- Social skills significantly predicted all three postsecondary outcomes (i.e., education, employment, independent living) for students with ASD

**Alverson, C. Y., & Yamamoto, S. H. (2016). Employment outcomes of vocational rehabilitation clients with autism spectrum disorders. *Career Development and Transition for Exceptional Individuals, 40*, 1-12. doi: 10.1177/2165143416629366 (Descriptive)**

Purpose:

- To better understand employment outcomes of individuals with ASD

Procedures:

- Data spanning 10 years from the Rehabilitation Services Administration 911 database were analyzed to identify characteristics of VR clients with ASD and the services they received

Results:

- The percent of individuals who achieved competitive employment averaged 37% across the 10 years
- Those who achieved an employment outcome participated in twice as many services as those who did not achieve an employment outcome

**Kaya, C., Chan, F., Iwanaga, K., Rumrill, P., Avellone, L., Hartman, E., Wehman, P., ... Pai, C.H. (2016). Vocational rehabilitation services and competitive employment for transition-age youth with autism spectrum disorders. *Journal of Vocational Rehabilitation, 45*, 73-83. (Correlational)**

Purpose:

- investigated the effects of demographic characteristics, Social Security disability benefits, and vocational rehabilitation services on competitive employment outcomes for transition-age youth with ASD.

Results:

- indicated participants who received on-the-job support, job placement services, rehabilitation technology, occupational/vocational training, other services, job search assistance, vocational counseling and guidance, and job readiness training from the state-federal VR program were significantly more likely to achieve competitive employment than were participants who did not receive those services.
- In addition, higher levels of educational attainment, receiving a greater number of VR services, and not receiving Social Security disability benefits were positively associated with competitive employment outcomes.
- In contrast to findings reported in other studies of VR participants with ASD, gender was not associated with competitive employment outcomes.



**Wehman, P., Brooke, V., Brooke, A. M., Ham, W., Schall, C., McDonough, J., ... & Avellone, L. (2016). Employment for adults with autism spectrum disorders: A retrospective review of a customized employment approach. *Research in Developmental Disabilities, 53*, 61-72. (Literature review)**

Purpose:

- to provide a retrospective review of 64 individuals with ASD who participated in a university based employment service organization that exclusively provides competitive integrated employment (CIE) and is certified by the Commission on Accreditation of Rehabilitation Facilities.

Participants:

- were all male, between the ages of 19 to 59 (mean age 24), and were referred between 2009 to 2014 for supported employment services.

Results:

- All vocational rehabilitation clients with ASD served during this time successfully secured CIE, and maintained their employment with ongoing supports, with intensity of support time decreasing over time.
- The majority (63/64, 98.4%) of individuals successfully secured CIE through the use of supported employment, in 72 unique employment positions.

**Zalewska, A., Migliore, A., & Butterworth, J. (2016). Self-determination, social skills, job search, and transportation: Is there a relationship with employment of young adults with autism? *Journal of Vocational Rehabilitation, 45*, 225-239. doi:10.3233/JVR-160825 (Correlational)**

Purpose:

- To increase knowledge about the relationships between the factors of self-determination, social skills, job search, and transportation and employment

Participants:

- Students ages between 13 and 16 at the beginning of the study and 22-25 years old by the end

Results:

- Findings did not indicate a relationship between employment and most of these factors
- Psychological empowerment (a subscale of self-determination) and transportation independence were the only factors associated with employment outcomes of young adults with ASD

**Chen, J. L., Leader, G., Sung, C., & Leahy, M. (2015). Trends in employment for individuals with autism spectrum disorder: A review of the research literature. *Review Journal of Autism and Developmental Disorders, 2*, 115-127. doi:10.1007/s40489-014-0041-6 (Literature review)**

Purpose:

- Provided an overview of employment-related research in individuals with ASD
- Topics explored were:
  - Employment outcomes revealed from adult outcome studies and national datasets
  - Internal and external challenges experienced by individuals with ASD in finding and maintaining employment

Results:

- Social difficulties, comorbidity, education level, family support, employers' attitudes, access to services, and disability incentives have been implicated as factors that play an important role in predicting employment
- Existing research evidence for specific employment training programs and strategies to successful employment were also introduced in regards to supported employment, transition services, assistive technology, and multidisciplinary collaboration

**Myers, E., Davis, B. E., Stobbe, G., & Bjornson, K. (2015). Community and social participation among individuals with autism spectrum disorder transitioning to adulthood. *Journal of Autism and Developmental Disorders, 45*, 2373-2381. doi:10.1007/s10803-015-2403-z (Correlational)**

Purpose:

- Described community and social participation in adolescents with ASDs as they transitioned from adolescence to adulthood, and identified adolescent factors associated with community and social participation outcomes in adulthood

Results:

- Using data from the National Longitudinal Transition Study 2, a significant decrease in community participation from adolescence to adulthood (63 to 46 %) was observed whereas social participation remained stable
- The presence of case management in adolescence was associated with increased community and social participation in adulthood indicating case management maybe crucial for optimal levels of participation among adults with ASD

**Cimera, R., & Burgess, S. (2011). Do adults with autism benefit monetarily from working in their communities? *Journal of Vocational Rehabilitation, 34*, 173-180. doi:10.3233/JVR-2011-0545 (Correlational)**

Purpose:

- To report on employment outcomes achieved by 19,436 adults with autism spectrum disorder, who lived throughout the United States and had their cases closed by vocational rehabilitation agencies from 2002-2007

Results:

- Individuals with autism working in the community generated more monetary benefits than monetary cost
- However, the rates of employment, hours worked, and wages earned per month were low throughout the United States

**Taylor, J. L., & Seltzer, M. M. (2011). Employment and post-secondary educational activities for young adults with autism spectrum disorders during the transition to adulthood. *Journal of Autism and Developmental Disorders, 41*, 566-574. doi:10.1007/s10803-010-1070-3 (Causal comparative)**

Purpose:

- To describe the post-school educational and occupational activities of adults with ASD

Participants:

- Sixty-six young adults with ASD, who were from a sub-sample (drawn from a larger longitudinal study of families of adolescents and adults with ASD) who had recently exited high school (mean age 22.98)

Results:

- Low rates of employment in the community, with the majority of young adults (56%) spending time in sheltered workshops or day activity centers
- Young adults with ASD without an intellectual disability were three times more likely to have no daytime activities compared to adults with ASD who had an intellectual disability
- Differences in behavioral functioning were observed by employment/day activity group

Implications:

- The current service system may be inadequate to accommodate the needs of youth with ASD who do not have intellectual disabilities during the transition to adulthood

**McDonough, J.T., & Revell, G. (2010). Accessing employment supports in the adult system for transitioning youth with autism spectrum disorder. *Journal of Vocational Rehabilitation, 32*, 117-124. doi:10.3233/JVR-2010-0498 (Case study)**

Purpose:

- To view the current research on employment outcomes for persons with ASD
- To overview employment services and supports in the adult system and to identify keys for successful transitions to adult services

Implications:

- The authors emphasized that the specific services that might be available to each youth with ASD and his or her family through the local Adult Service System need to be determined for each individual's own state and community

**Hendricks, D. R., & Wehman, P. (2009). Transition from school to adulthood for youth with autism: Review and recommendations. *Focus on Autism and Other Developmental Disabilities, 24, 77-88. doi:10.1177/1088357608329827* (Literature review)**

Purpose:

- To investigate the post-secondary outcomes for individuals with autism spectrum disorders and provided insight into the condition of the transition process in the areas of education, employment, community living, and community integration

Participants:

- included participants with autism, ASD, PDD-NOS, and Asperger's Syndrome
  - At least 50% of participants in the study had to be identified as having an ASD
  - Participants were 13 and older

Procedures:

- Articles selected for review were published between 1996 and 2008
- Studies with intervention designs were required to demonstrate a functional relation between the independent and dependent variable

Results:

- A summary of current outcome literature as well as supports and interventions that have been evaluated within each domain were included

**Cederland, M., Hagberg, B., Billstedt, E., Gillberg, I.C., & Gillberg, C. (2008). Asperger syndrome and autism: A comparative longitudinal follow-up study more than five years after original diagnosis. *Journal of Autism and Developmental Disorders, 38, 72-85. doi:10.1007/s10803-007-0364-6* (Causal comparative)**

Purpose:

- To provide a follow-up study of 70 males with Asperger's Syndrome and 70 males with autism more than 5 years after original diagnosis in Sweden

Procedures:

- To evaluate differences in multiple factors including:
  - Overall outcome
  - Diagnostic stability over time
  - Intellectual functioning
  - Education
  - Occupation

Results:

- Results indicated better overall outcomes for the Asperger’s syndrome group than the autism study group possibly due to the higher full scale intelligence quotient (FSIQ) in the Asperger’s syndrome group.

**VanBergeijk, E., Klin, A., & Volkmar, F. (2008). Supporting more able students on autism spectrum: College and beyond. *Journal of Autism & Developmental Disorders*, 38, 1359-1370. doi:10.1007/s10803-007-0524-8 (Discussion)**

Purpose:

- To provide recommendations for families, educators, and students who are on the autism spectrum in areas of academics, independent living, social, vocational, and counseling for a smooth high school to college transition

Implications:

- Provides recommendations to universities for providing training to students in the areas of communication, social skills, and independent living through social skills groups, psychoeducational groups, directive counseling

**Barnhill, G. P. (2007). Outcomes in adults with Asperger syndrome. *Focus on Autism and Other Developmental Disabilities*, 22, 116-126. doi:10.1177/10883576070220020301 (Discussion)**

Purpose:

- To provide a parent’s perspective on current research of adult outcomes for individuals with Asperger syndrome

Results:

- Areas discussed included: (a) employment issues; (b) comorbid mental health conditions; (c) physical health conditions and neurological/sensory issues; (d) social cognition; (e) problems in the legal system; (f) mortality rates; (g) increased public awareness, education, recognition; and (h) gaps in education services and employment opportunities

Implications:

- Future research is needed on assisting individuals with AS so they can be successful in the workforce and various available housing options

**Jennes-Coussens, M., Magill-Evans, J., & Koning, C. (2006). The quality of life of young men with asperger syndrome: A brief report. *Autism*, 10, 403-414. doi:10.1177/1362361306064432 (Descriptive)**

Purpose:

- To describe a study with 12 men with Asperger’s Syndrome (mean age = 20.3 years) and 13 without Asperger’s Syndrome (mean age = 20.5 years) who completed assessments and a semi-structured interview
- To explore the quality of life of young men with and without Asperger’s Syndrome; the differences in the perceived support network; and the described independence, friendships, dating relationships, and leisure activities

Results:

- Twelve men with Asperger's Syndrome reported a significantly lower physical quality of life than those in the control group, reporting less satisfaction with pain, discomfort, dependence on medical treatment, activities of daily living, work capacity, fatigue, mobility, sleep, and rest
- Twelve men with Asperger's Syndrome reported a significantly lower social quality of life than those in the control group, reporting a lack of necessary social skills

**Wagner, M., Newman, L., Cameto, R., & Levine, P. (2006). The academic achievement and functional performance of youth with disabilities. A report from the National Longitudinal Transition Study-2 (NLTS-2). Menlo Park, CA: SRI International. (Report)**

Purpose:

- This report was part of the National Longitudinal Transition Study-2 (NLTS2), a 10-year study funded by the Office of Special Education Programs (OSEP) of the U.S. Department of Education

Procedures:

- Data were gathered from direct assessments to generate information regarding the academic performance of youth in secondary school, including:
  - How well do youth achieve in language arts, mathematics, science, and social studies
  - How does their achievement compare with the general population
  - What factors are statistically associated with higher academic achievement

Results:

- Results for those with autism, included:
  - Scores were highest in the areas of mathematics calculation, synonyms/antonyms, and science knowledge and lowest in applied problem solving, social studies knowledge, and passage comprehension
  - Many performed more than six standard deviations below the mean on the measure of broad independence

**Billstedt, E., Gillberg, C., & Gillberg, C. (2005). Autism after adolescence: Population-based 13 to 22-year follow-up study of 120 individuals with autism diagnosed in childhood. *Journal of Autism and Developmental Disorders*, 35, 351-360. doi:10.1007/s10803-005-3302-5 (Correlational)**

Purpose:

- To provide a follow-up study of 120 individuals with autistic disorder and a comparison group of individuals with autistic-like characteristics in Sweden for 13-22 years until ages 17-40 years

- Evaluated multiple factors

Results:

- *Overall outcome*- 57% had very poor outcomes
- *Independence*-only four participants in the follow-up study were living independently
- Presence of psychiatric disorders-eight individuals were diagnosed with psychiatric disorders
- *Use of medication*- 32% of the individuals were prescribed neuroleptic medications
- *Presence of self-injurious behaviors*- 50% of the individuals had engaged in moderate to severe degrees of self-injurious behaviors
- *Presence of hyperactive behaviors*- 33% were perceived as hyperactive
- *Presence of violent behaviors*- 19% reported extreme violent behaviors
- *Presence of epilepsy*-43% had epileptic seizures at the time of the follow-up study
- *Presence of other medical disorders*-23% had syndromal medical disorders (e.g., tuberous sclerosis)
- *Presence of catatonia*- 12% had been clinically diagnosed with catatonia with severe motor initiation problems
- *Intellectual functioning*-downward shift of IQ level between the diagnostic and follow-up studies
- *Characteristics during puberty*-38% had remarkably problem-free adolescent periods, 31% had shown major problem during puberty
- *Male-female differences*- no statistically significant differences between gender

**Howlin, P., Alcock, J., & Burkin, C. (2005). An 8 year follow-up of a specialist supported employment service for high-ability adults with autism or asperger syndrome. *Autism: The International Journal of Research & Practice, 9, 533-549.* doi:10.1177/1362361305057871**  
(Descriptive)

Purpose:

- To examine the United Kingdom National Autistic Society (NAS) supported employment program over an 8 year period (1995-2003) and explored how effective the service had been in finding work for and supporting individuals in employment.

Procedures:

- The following was evaluated (a) the changes in the numbers and types of jobs found since the inception of the program in 1995; (b) a comparison of the characteristics of current clients with those originally enrolled in the program; (c) the economic costs and benefits; and (d) assessments of satisfaction among the clients, employers, and employment specialists

Results:

- Over 68% of all clients found employment
- Of the 192 jobs found, the majority were permanent contracts
- Most of the jobs were technical, administrative, and professional in nature
- Assessment of current clients found that IQ, language skills, and educational attainments were high
- Employed individuals had a rise in salaries
- Satisfaction with service delivery was high among the clients, employers, and employment specialists
- A cost-benefit analysis demonstrated a decrease in the cost per job found over time.

**Krauss, M. W., Seltzer, M. M., & Jacobson, H. T. (2005). Adults with autism living at home or in non-family settings: Positive and negative aspects of residential status. *Journal of Intellectual Disability Research, 49*, 111-124. doi:10.1111/j.1365-2788.2004.00599.x (Descriptive)**

Purpose:

- To explore (a) how mothers describe the positive and negative aspects of their child's current residential setting, (b) how much contact mothers have with their child living in an out-of-home setting, and (c) what changes for their own lives do mothers attribute to this residential arrangement

Participants:

- Mothers from 133 families of adults (aged 22 years and older) with autism spectrum disorder regarding the positive and negative aspects of their child's residential arrangement

Results:

- A third of the children with autism currently lived with their mothers
- Mothers co-residing with their child felt this arrangement provided the greatest possible benefit to the family
- Mothers living apart from their child felt this arrangement provided the greatest possible benefit to the son or daughter with ASD
- There were several negative aspects to co-residing including the child not being pushed towards independence, social isolation, and lack of services
- There was a high level of contact and involvement between the mothers and the child in out-of-home placements
- Mothers reported having more free time and less fatigue since the child moved out of the home

**Schaller, J., & Yang, N. K. (2005). Competitive employment for people with autism: Correlates of successful closure in competitive and supported employment. *Rehabilitation Counseling Bulletin, 49*, 4-16. doi:10.1177/00343552050490010201 (Correlational)**

Purpose:



- To examine quantitative employment outcomes for individuals with autism using the Rehabilitation Service Administration national database of 2001.

Participants:

- 450 clients with autism who received services for competitive employment and 365 clients with autism who received supported employment

Procedures:

- The following was investigated:
  - differences in clients who received competitive versus supported employment services
  - customer demographic and case service variables related to successful closure for competitive and supported employment

Results:

- Clients who received supported employment versus competitive employment services were significantly different on successful closure rates, hours worked per week, earnings, and average cost of service provision.
- Client demographic variables related to successful competitive employment included age, years of education, and presence of a secondary disability.
- Case service variables related to successful competitive employment included job finding, job placement, and maintenance
- Client demographic variables related to successful supported employment included race.
- The case service variable related to successful competitive employment included job placement.

**Wagner, M., Newman, L., Cameto, R., Garza, N., & Levine, P. (2005). After high school: A first look at the postschool experiences of youth with disabilities. A report from the National Longitudinal Transition Study-2 (NLTS-2). Menlo Park, CA: SRI International. (Report)**

Purpose:

- This report was part of the National Longitudinal Transition Study-2 (NLTS2), a 10-year study funded by the Office of Special Education Programs (OSEP) of the U.S. Department of Education; this report focuses on young adults out of secondary school and ages 15-19

Participants:

- The NLTS2 involved a nationally representative sample of more than 11,000 youth who were ages 13-16 and receiving special education services under any of the twelve federal special education disability categories including autism

Results:

- Results for those with autism, included:
  - Most finished high school with a regular diploma
  - Many were scored low in functional abilities

- Engagement in out-of-school activities is low
- Job training, employment, and postsecondary education are low
- Parents of those with autism were less positive about future prospects than other disability categories

**Cameto, R., Levine, P., & Wagner, M. (2004). Transition planning for students with Disabilities. A Special Topic Report from the National Longitudinal Transition Study-2 (NLTS-2). Menlo Park, CA: SRI International. (Report)**

Purpose:

- This report was part of the National Longitudinal Transition Study-2 (NLTS2), a 10-year study funded by the Office of Special Education Programs (OSEP) of the U.S. Department of Education

Procedures:

- Data were gathered from parents and school staff to generate information needed to assess the achievements of youth with a variety of disabilities including autism in their secondary school years in multiple domains, including:
  - Age of initiation of transition planning
  - Student's transition goals
  - Participants in transition planning
  - Planned courses of study and instruction in transition planning
  - Identification of needed post-school services
  - Contact with agencies on behalf of the student
  - Post-school service information provided to the parents
  - Parent perceptions regarding the transition process

Results:

- Results for those with autism included:
  - Most had a transition plan and had received instruction towards meeting goals
  - Those with autism were more likely to be working towards supported or sheltered employment than postsecondary education or competitive employment
  - Few students participate in transition planning
  - Team member participation in transition planning meetings varies considerably
  - Parents rated the usefulness of the transition planning process poorly
  - School staff rated the suitability of the educational program poorly

**Howlin, P., Goode, S., Hutton, J., & Rutter, M. (2004). Adult outcome for children with autism. *Journal of Child Psychology and Psychiatry*, 45, 212-229. (Correlational)**

Purpose:

- To provide a follow-up study of 68 individuals with autistic disorder with a performance IQ of 50 or above in childhood in the United Kingdom; participants were followed until ages 21-48 years
- To review outcomes in terms of multiple factors including:
  - Diagnostic stability over time
  - Social functioning per assessment measures
  - Autistic-type behaviors in adulthood
  - Cognitive abilities
  - Linguistic abilities
  - Educational attainment
  - Employment
  - Friendships
  - Living arrangements
  - Overall social outcome
  - Autism-related problems
  - Epilepsy
- To evaluate:
  - Associations among adult outcome measures including social, cognitive, and language functioning
  - Associations between childhood measures and adult outcomes including the relationship between performance IQ and speech and language, ritualistic behaviors, social functioning, and employment
  - Gender differences in outcome

Results:

- Overall findings indicated: (a) 34% of the individuals in the study were employed, (b) 4% of the individuals lived by themselves while 38% of the individuals still lived at home, and (c) there were no statistically significant differences with gender

**Hurlbutt, K., & Chalmers, L. (2004). Employment and adults with Asperger syndrome. *Focus on Autism and Other Developmental Disabilities, 19*, 215-222. doi:10.1177/10883576040190040301 (Descriptive)**

Purpose:

- To provide results from a study with six adults with Asperger Syndrome (ages 25-56) who were interviewed about their experiences regarding employment.

Results:

- Several themes emerged:
  - All interviewed had difficulty finding work commensurate with their ability levels
  - Difficulty maintaining a job was the biggest problem for each participant
  - Several factors affect employability, including social skills, communication, sensory issues, and stress and anxiety

Implications:

- The following recommendations to increase success in the workplace were made:
  - Providing an on-site job mentor
  - Describing job duties, responsibilities, expectations, and rules clearly and proactively
  - Determining whether to disclose the disability based on personal feelings
  - Educating employers and co-workers on autism
  - Taking into account the individual's strengths, interests, need for flexibility, as well as the job complexity when making a job match

**Levine, P., Marder, C., & Wagner, M. (2004). Services and supports for secondary school students with disabilities. A Special Topic Report from the National Longitudinal Transition Study-2 (NLTS-2). Menlo Park, CA: SRI International. (Report)**

Purpose:

- This report was part of the National Longitudinal Transition Study-2 (NLTS2), a 10-year study funded by the Office of Special Education Programs (OSEP) of the U.S. Department of Education

Procedures:

- Data were gathered from parents to generate information regarding the services and supports students received, including:
  - What related services and other supports are provided to secondary-school-age student with disabilities and to what degree are they provided by the schools
  - What is involved in parents acquiring services
  - What is the unmet need for services, according to parents

Results:

- Results for those with autism, included:
  - Related services varied considerably among students
  - Parents reported investing considerable effort to obtain services
  - Parents reported numerous barriers to obtaining services
  - Parents reported that that many needed services are not available or are poor quality
  - Parents often relied on help outside of school
  - Parents reported dissatisfaction with services

**Müller, E., Schuler, A., Burton, B. A., & Yates, G. B. (2003). Meeting the vocational support needs of individuals with asperser's syndrome and other autism spectrum disabilities. *Journal of Vocational Rehabilitation*, 18, 163-175. (Descriptive)**

Purpose:

- To provide results from a study with 18 adults with autism spectrum disorder with no diagnosis of mental retardation (Asperger’s Syndrome n=13, high-functioning autism n=2, pervasive developmental disorder-not otherwise specified n=1) who were interviewed about their experiences in the workplace

Participants:

- All participants were over 18 years of age and had been in the work force for at least one year
- Participants were asked to (a) describe positive and negative aspects of their vocational experiences, (b) identify major obstacles to successful employment, and (c) recommend appropriate vocational supports to be provided

Results:

- Themes regarding positive and negative aspects of their vocational experiences included:
  - Individuals have diverse vocational interests
  - Unemployment and underemployment are common
  - Majority of work experiences are negative
  - Most experience isolated instances of vocational success
- Themes regarding major obstacles to successful employment included:
  - Job matching
  - Mastering the job application process
  - Acclimating to new job routines
  - Communication
  - Navigating the social interactions with supervisors and co-workers

Implications:

- Recommended vocational supports include the provision of:
  - Individualized ASD-specific job supports
  - Communication supports
  - Autism awareness training
  - Attitudinal supports

**Wagner, M., Marder, C., Blackorby, J., Cameto, R., Newman, L., & Levine, P., et al. (2003). The achievements of youth with disabilities during secondary school. A report from the National Longitudinal Transition Study-2 (NLTS-2). Menlo Park, CA: SRI International.**  
(Report)

Purpose:

- This report was part of the National Longitudinal Transition Study-2 (NLTS2), a 10-year study funded by the Office of Special Education Programs (OSEP) of the U.S. Department of Education

Procedures:

- Data were gathered from parents and school staff to generate information regarding the achievements of youth in secondary school, including:

- School engagement (the extent to which a student identifies with the school environment as measured through feelings about school and participation in his education)
- Grades
- Expectations to keep up in class
- Reading and mathematics performance
- Management of self-care activities
- Use of functional cognitive skills
- Mobility (ability to get around outside of house)
- Self-advocacy
- Persistence
- Participation in transition planning meetings
- Progress toward independent living goals
- Progress toward vocational goals
- Progress toward self-advocacy goals
- Household responsibilities
- Driver's license

Results:

- Results for those with autism, included:
  - School enjoyment is low
  - School engagement is low in comparison to other disability categories
  - Few are on grade level in math and reading
  - Many have low social skills and demonstrate poor behavior in the classroom
  - Students are less likely to belong to a group or see friends outside of school
  - Many have low functional skills and mobility

**García-Villamizar, D., Wehman, P., & Navarro, M. D. (2002). Changes in the quality of autistic people's life that work in supported and sheltered employment. A 5-year follow-up study. *Journal of Vocational Rehabilitation, 17*, 309-312. (Causal comparative)**

Purpose:

- To compare two modalities of employment: sheltered workshop versus supported employment between 1996 and 2000.
- To determine the difference regarding quality of life for 26 individuals with autism employed in a sheltered workshop (mean age = 21.07) and twenty-one individuals with autism employed through a Supported Work Project (mean age = 21.64) in three sites in Europe.

Results:

- In 1996, there was no difference between the sheltered work group and the supported work group on quality of life scores

- In 2000, the sheltered work group had a lower quality of life score than the supported work group
- The sheltered work group did not change its quality of life level between 1996-2000
- The supported work group improved its global quality of life from 1996-2000.

**Hurlbutt, K., & Chalmers, L. (2002). Adults with autism speak out: Perceptions of their life experiences. *Focus on Autism and Other Developmental Disabilities, 17*, 103-111. doi:10.1177/10883576020170020501 (Descriptive)**

Purpose:

- To provide qualitative findings from three adults with high-functioning autism (ages 31, 35, and 61) who were interviewed over a 9-month period of time in order to investigate their life experiences

Results:

- Emerging themes:
  - Adults with high-functioning autism identify with their own unique culture
  - Positive family involvement and support systems contribute to their feelings of self-worth and help them be successful
  - Adults with high-functioning autism have a strong opinion about what makes a difference in the lives of individuals with autism: group living arrangements and activities are dehumanizing, unemployment and underemployment are significant problems, they need support to develop skills, and behavior issues need to be addressed individually and positively

**Ruef, M. B., & Turnbull, A. P. (2002). The perspectives of individuals with cognitive disabilities and/or autism on their lives and their problem behavior. *Research and Practice for Persons with Severe Disabilities, 27*, 125-140. doi:10.2511/rpsd.27.2.125 (Descriptive)**

Purpose:

- To provide results from a study with five adults with cognitive disabilities and four adults with autism with no diagnosis of cognitive impairment participated in face-to-face focus groups and individual interviews to evaluate perceptions regarding barriers and solutions they have experienced related to problem behavior
- To explore (a) the conditions/barriers that have caused behavioral challenges, (b) suggestions on areas viewed as most helpful in increasing quality of life while reducing or eliminating problem behavior, and (c) types of useful informational products that would be most helpful in building positive, practical solutions to behavioral challenges

Results:

- Themes emerged regarding conditions/barriers:
  - Communication difficulties
  - Environmental dislikes, including lack of personal freedom, privacy, and personal decision making
  - Programs that do not address individual needs

Implications:

- Suggestions were made regarding solutions:
  - Employment
  - Living situations
  - Recreation and leisure preferences
  - Relationships
  - Self-help
- Suggestions made regarding informational products:
  - Informational formats should consist of oral presentation of information and hands on application including role playing
  - Informational sources vary according to the individual and are based on the living arrangements as well as support needs

**McClannahan, L. E., MacDuff, G. S., & Krantz, P. J. (2001). Behavior analysis and intervention for adults with autism. *Behavior Modification, 26, 9-26.***

**doi:10.1177/0145445502026001002**

*(Discussion)*

Purpose:

- To discuss an Adult Life-Skills Program at the Princeton Child Development Institute (PCDI) that provides services to adults with autism in the areas of employment, home, and community skills
- To discuss the stringent program standards of the Adult Life-Skills Program
- Discussed program parameters including instructional content, format, and context; staff responsibilities; curriculum; supported employment services; and program evaluation procedures
- To discuss the success of 15 adults (ages 15-25) who have participated in the program

Implications:

- Recommended that programs for adults should have a comprehensive curriculum and rigorous evaluation criteria and that data on adult repertoires should inform the curriculum for young children

**Howlin, P. (2000). Outcome in adult life for more able individuals with autism or asperger syndrome. *Autism: The International Journal of Research & Practice, 4, 63-83.* doi:10.1177/1362361300004001005 (Literature review)**

Purpose:



- To review the outcomes in adult life for more able individuals with ASD, including both high-functioning autism and Asperger Syndrome

Procedures:

- Focused predominantly on long-term follow-up research
- Reviewed outcomes in terms of multiple factors including:
  - Cognitive functioning
  - Linguistic functioning
  - Academic functioning
  - Adaptive functioning
  - Educational history
  - Employment history
  - Independence
  - Social relationships
  - Behavioral concerns
  - Psychiatric disorders
  - Stability of IQ over time
- Identified areas of concern in adulthood including:
  - Deterioration
  - Epilepsy
  - Mortality
  - Psychiatric illness
  - Forensic issues

Results:

- Results were extremely variable across the six studies with the proportion in work ranging from 5 to 44 percent; the proportion living independently from 16 to 50 percent; assessments of 'good' outcome from 16 to 44 percent; and rates of psychiatric disturbance from 11 to 67 percent

Implications:

- Recommended improving outcomes in adulthood including appropriate educational programs, access to supported employment programs, specialized social groups, and improvements in diagnostic provisions

**Howlin, P., Mawhood, L., & Rutter, M. (2000). Autism and receptive language disorder – A follow-up comparison in early adult life II: Social, behavioral, and psychiatric outcome. *Journal of Child Psychology & Psychiatry & Allied Disciplines, 41, 561-578. (Causal comparative)***

Purpose:

- To provide a follow-up study of 19 males with autism (AS) and 20 males with developmental receptive language disorders in the United Kingdom with participants diagnosed between the ages of 7-8 years and followed until 21-28 years

Procedures:

- Compared multiple factors related to outcomes including:
  - Cognitive functioning
  - Linguistic functioning
  - Social relationships, interactions, and competence
  - Employment
  - Independence
  - Living arrangements
  - Educational attainment
  - Psychiatric disorders
  - Stereotyped behavior patterns
- Evaluated associations between childhood measures of early language ability and adult outcomes

Results:

- Results indicated greater impairments for individuals with autism over other disorders due to impaired social communication skills, poor daily living skills, major problems establishing friendships, and fewer individuals being able to live or work independently

**Mawhood, L., Howlin, P., & Rutter, M. (2000). Autism and developmental receptive language disorder-A comparative follow-up in early adult life. I: Cognitive and language outcomes. *Journal of Child Psychology and Psychiatry, 41, 547-559.* (Causal comparative)**

Purpose:

- To provide follow-up study of 19 males with autism (AS) and 20 males with developmental receptive language disorders in the United Kingdom with participants who were diagnosed between the ages of 7-8 years and followed until 21-28 years

Procedures:

- Compared multiple factors related to outcomes including:
  - Cognitive functioning
  - Linguistic functioning
  - Social relationships, interactions, and competence
  - Employment
  - Independence
  - Living arrangements
  - Educational attainment
  - Psychiatric disorders
  - Stereotyped behavior patterns
- Evaluated associations between childhood measures of early language ability and adult outcomes

Results:

- The autism group showed more impairments in almost every area of language assessed (i.e., verbal and nonverbal intelligence, expressive language, conversational skills, reading, spelling), but the differences often fell short of significance
- With the passage of time both the autism group and the language group moved closer in terms of language functioning
- In the autism group, individuals who tended to have the best linguistic outcome in adulthood were functioning at a higher cognitive level more generally

**Van Bourgondien, M., & Elgar, S. (1990). The relationship between existing residential services and the needs of adults with autism. *Journal of the Association for Persons with Severe Handicaps*, 16, 75-84. doi:10.1007/BF02206543 (Discussion)**

Purpose:

- To review the characteristics of autism that affect adaptation to residential settings
- To provide a number of considerations that should be taken into account when determining residential services

Procedures:

- Described existing residential options in both Great Britain and North Carolina
- Described how the needs of individuals with autism are currently not being met with existing residential services

Implications:

- Recommended developing residential programs specifically designed to meet the needs of individuals with autism

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