



NTACT

National Technical Assistance Center on Transition

Assistive Technology Annotated Bibliography

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What is Assistive Technology?

The term 'assistive technology device' is defined in the Individuals with Disabilities Education Act (2004) as "any item, piece of equipment, or product system, whether acquired commercially, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities" (20 U.S.C. § 1400 [602]).

A history of reauthorizations exist related to assistive technology such as the Technology-Related Assistance for Individuals with Disabilities Act of 1988 which provided financial assistance to states for developing and implementing consumer-responsive statewide programs of technology-related assistance for people of all ages with disabilities. Then 10 years later, the Assistive Technology Act replaced the former act with the focus on addressing the assistive-technology needs of individuals with disabilities. Most recently, the Assistive Technology Act of 2004 was reauthorized with the Assistive Technology program administered by the Department of Education.

Why is Assistive Technology in Transition Planning Important?

Social and communicative skills represent critical student development skills in a transition-focused education (Kohler & Field, 2003). Social competence is central to navigating each of Halpern's (1994) educational outcome areas: vocational pursuits, postsecondary education, relationships with others, community participation, and maintaining a home. Bouck, Maeda, and Flannagan (2012) found evidence-indicating students with high incidence disabilities who reported receiving assistive technology in school had more positive post-school outcomes in terms of a paid job, wages, and participation in postsecondary education.

Despite this history, there is limited research and sustainability related to assistive technology procedures in secondary transition for adolescents with disabilities transitioning

into postsecondary education, work environments, and independent living situations (Houchins, 2001).

What Does the Literature Say About Assistive Technology in Transition Planning?

Assistive technology is often described in the literature through disciplines that these technologies support. Augmentative and alternative communication is one area with countless studies utilizing various assistive technologies to support communication growth. Miranda (2014) noted the state of communication for students with severe intellectual disability needed (a) an expansion of the range of assistive technologies and techniques available, (b) getting students with disabilities into their neighborhood schools, (c) into their communities, and (d) into real jobs. Additionally, Behrmann and Schepis (1994) suggested a critical time for examining an individual's assistive technology needs occurs during the transition from the school environment to a work environment. The introduction of AT services and supports may facilitate opportunities for students with disabilities to participate in work placements and may be critical in maximizing their employment opportunities.

The purpose of this annotated bibliography is to summarize relevant research and Internet resources to update families, special education professionals, and researchers on what is currently known related to assistive technology and secondary transition procedures. Information is provided on the following topics assistive technology and transition, assistive technology and postsecondary education, assistive technology and employment, assistive technology and independent living, and Augmentative and Alternative Communication (AAC) and transition. Finally, additional resources on the topic are provided.

References

Assistive Technology Act of 2004, Pub. L. No. 108-364.

Behrmann, M. M., & Schepis, M. M. (1994). Assistive technology assessment: A multiple case study review of three approaches with students with physical disabilities during the transition from school to work. *Journal of Vocational Rehabilitation, 4*, 202-210.

Bouck, E. C., Maeda, Y., & Flanagan, S. M. (2012). Assistive technology students with high incidence disabilities: Understanding the relationship through the NTL-2. *Remedial and Special Education, 33*, 298-308.

Halpern, A. S. (1994). Quality of life for students with disabilities in transition from school to adulthood. *Social Indicators Research*, 33, 193-236.

Houchins, D. E. (2001). Assistive technology barriers and facilitators during secondary and postsecondary transitions. *Career Development for Exceptional Individuals*, 24, 73-88.

Individuals with Disabilities Education Improvement Act of 2004, 20 U.S.C. 1400 et seq. (2004).

Kohler, P.D., & Field, S. (2003). Transition-focused education foundation for the future. *The Journal of Special Education*, 37, 174-183.

Mirenda, P. (2014). Revisiting the mosaic of supports required for including people with severe intellectual or developmental disabilities in their communities. *Augmentative and Alternative Communication*, 30, 19-27.

Assistive Technology and Transition

Alper, S., & Raharinirina, S. (2006). Assistive technology for individuals with disabilities: A review and synthesis of the literature. *Journal of Special Education Technology*, 21, 47-56.

- The purpose of this systematic review of literature was to synthesize reports of assistive technology use with individuals with disabilities and the resulting benefits and obstacles.
- The authors reviewed 60 articles containing 68 studies, rated the articles independently and checked for interrater reliability using 9 of those articles.
- Of the articles which met the inclusion criteria, including those with participants with disabilities, participants ages 3 and up, and those published in English refereed journals between 1988 and 2003, 32 used a group experimental design.
- Results indicated that closer alignment to the recommendation of the Tech Act is necessary, with an emphasis on family involvement with goal setting, skill maintenance, and generalization across settings.
- Maintenance and generalization of skills in school are important in supporting post school services, which can be fragmented and difficult to access.

Bouck, E. C., Maeda, Y., & Flanagan, S. M. (2012). Assistive technology students with

high incidence disabilities: Understanding the relationship through the NTLs-2. *Remedial and Special Education, 33, 298-308.*

- The purpose of this study was to conduct a secondary analysis of data collected as part of the NLTS-2 to determine assistive technology use among students with high-incidence disabilities in both secondary education and postsecondary education.
- Using descriptive analyses, the authors explored the relationship between the receipt of assistive technology in school and post-school outcomes.
- Results indicated students with high incidence disabilities who reported receiving assistive technology in school had more positive post-school outcomes in terms of a paid job, wages, and participation in postsecondary education overall.
- However, assistive technology was not a statistically significant factor in the logistic regression model for any dependent variable (i.e., post-school outcomes), thus it was not a predictor of a positive post-school outcomes.
- Implications for practice and suggestions for future research were discussed.

Kelly, S. M. (2011). The use of assistive technology by high school students with visual impairments: A second look at the current problem. *Journal of Visual Impairment & Blindness, 105, 235-239.*

- The purpose of this report was to describe the state of assistive technology use by high school students with visual impairments through a secondary analysis of the National Longitudinal Study-2 (NLTS2).
- Using a survey design, researchers analyzed the data acquired using a binary outcome measure for the use of assistive technology, and three covariates were assessed including parental involvement, school placement, and likelihood of youth eventually getting a paid job.
- Results indicated (a) placement was a significant factor in determining the likelihood of both primary and secondary students with visual impairments using assistive technology, (b) the use of assistive technology significantly predicted the likelihood of youths eventually getting paid jobs, and (c) having parent involvement was a significant factor in the likelihood of students using assistive technology.
- Limitations, implications for practice, and recommendations for future research were discussed.

Messinger-Willman, J., & Marino, M. T. (2010). Universal design for learning and assistive technology: Leadership considerations for promoting inclusive education in today's secondary schools. *NASSP Bulletin, 94, 5-16.*

- The purpose of this article was to describe how the Universal Design for Learning theoretical framework can be used with assistive technology to enhance educational opportunities for secondary students with learning disabilities.
- Authors identified potential solutions for barriers that prevent secondary teachers from effectively selecting, adopting, implementing, and assessing assistive technology devices.
- Recommendations for enhancing secondary teachers' professional development opportunities were discussed.

Nochajski, S. M., Oddo, C., & Beaver, K. (1999). Technology and transition: Tools for success. *Technology and Disability, 11*, 93-101.

- The purpose of this paper was to describe the concepts of using the Technology and Transition model as best practices for transition including (a) using collaborative teaming, (b) using an ecologic curriculum, and (c) establishing and using interagency linkages.
- Authors indicated the need for assistive computer technology and how it can be incorporated into an IEP or transition plan.
- Additionally, authors included assistive computer technology tools for success such as lending libraries, evaluation and training, coordination and collaboration, and transition websites.
- The role of occupational therapists as experts in assessment and training with assistive technology was discussed.

Parette, P. (1999). Transition and assistive technology planning with families across cultures. *Career Development for Exceptional Individuals, 22*, 213-231.

- The purpose of this paper was to discuss effective assistive technology transition planning for adolescents and young adults with disabilities when considering family and cultural factors.
- Using IDEA, authors stated successful transition planning requires family participation, consideration of communication needs of adolescents and young adults with disabilities, and decisions regarding which assistive technology devices and services.
- Additionally, a range of issues were explored for transition planning including (a) independence for the adolescent or young adult desired by the family, (b) rules of acceptance, (c) need for information, (d) changes in family routines, and (e) family and child life experiences.

- Importance of assistive technology issues, family and cultural sensitivity, duration and intensity, and user-friendliness were discussed.

Parette, H. P., & Peterson-Karlan, G. R. (2007). Facilitating student achievement with assistive technology. *Education and Training in Developmental Disabilities, 42, 387-397.*

- The purpose of this study was to distinguish differences between assistive technology, instructional technology, and universal designs for learning.
- Authors discussed three distinct aspects of the educational process for students with developmental disabilities including: (a) IEP development, including placement alternatives; (b) instructional interventions; and (c) student progress monitoring
- Additionally, an overview of assistive technology outcomes reflected in a range of professional publications in recent years and how the role of assistive technology in relation to student achievement requires professionals to understand both how and why assistive technology works for students with disabilities was provided.

Stodden, R. A., Conway, M. A., & Chang, K. B. T (2003). Findings from the study of transition, technology and postsecondary supports for youth with disabilities: Implications for secondary school educators. *Journal of Special Education Technology, 18, 29-43.*

- The purpose of this article was to describe the current status of transition related supports for youth with disabilities in relation to postsecondary education, graduation rates, and employment opportunities.
- Authors discussed the disability-related supports in secondary and postsecondary education in relation to differences for utilization of technology and other supports (e.g., instructional supports, assistive technology supports).
- Additionally, they addressed instructional environments and legal mandates in relation to the current barriers that exist to transition from secondary to postsecondary settings (i.e., differences in regulations, lack of alignment supports, differences in personal responsibility being professional and parent driven versus student driven, focus on legality and cost rather than on individual needs and outcomes).
- Recommendations for improving transition and other supports between secondary and postsecondary schools included (a) increasing the use of postsecondary-type supports in secondary schools, (b) increasing carry-over of technology between secondary and postsecondary schools, (c) teaching students self-advocacy skills and educating them

about their responsibilities in postsecondary education, and (d) recognizing that supports are an investment in positive outcomes and productivity were provided.

Zabala, J., Blunt, M., Carl, D., Davis, S., Deterding, C., Foss, T.,...Reed, P. (2000). Quality indicators for assistive technology services in school settings. *Journal of Special Education, 15, 25-36.*

- The purpose of this article was to describe the activities of a national group of assistive technology professionals known as the Quality Indicators for Assistive Technology Services (QIAT) Consortium.
- Authors discussed the work of the consortium, the process for developing the indicators, and current set of quality indicators are included.
- Implications for practice and future development activities were discussed.

Assistive Technology and Postsecondary Education

Day, S. L., & Edwards, B. J. (1996). Assistive technology for postsecondary students with learning disabilities. *Journal of Learning Disabilities, 29, 486-492.*

- The purpose of this paper was to list types of assistive technology appropriate for students with learning disabilities at the postsecondary level.
- Authors reviewed legislation that has impacted assistive technology at the postsecondary level.
- Issues involving assistive technology programs at the secondary level were discussed.
- Lastly, postsecondary assistive technology program components, device selection, and training guidelines were outlined.

Houchins, D. E. (2001). Assistive technology barriers and facilitators during secondary and postsecondary transitions. *Career Development for Exceptional Individuals, 24, 73-87.*

- The purpose of this study was to identify technology barriers and facilitators of students with disabilities as they transition from secondary and postsecondary settings to adult life.
- Twenty-seven disability technology specialists from the United States participated in a three round modified Delphi study.
- They identified four top technology lists for secondary and postsecondary transition issues including (a) facilitators when moving from secondary to postsecondary, (b)

barriers when moving from secondary to postsecondary education settings, (c) facilitators when moving from postsecondary settings to adult life, and (d) barriers when moving from postsecondary settings to adult life.

- Results indicated common themes of increasing professional knowledge, improving student self-determination, using best transition practices when using assistive technology, and establishing a technology infrastructure to support transitions from school to postsecondary and adulthood settings.

Lamb, P. (2003). The role of the vocational rehabilitation counselor in procuring technology to facilitate success in postsecondary education for youth with disabilities. *Journal of Special Education Technology, 18, 53-62.*

- The purpose of this study was to examine specific roles and responsibilities of four rehabilitation counselors for acquiring technology for students with disabilities.
- Using interviews, researchers investigated the roles of vocational rehabilitation counselors in assisting students in procuring assistive technology needed to be successful in postsecondary education.
- Results indicated vocational rehabilitation counselors have four major responsibilities that include: (a) collaborating with special educators to assist in the transition process; (b) serving as a vocational counseling resource for teachers and students; (c) fostering students self-determination and self-advocacy skills; and (d) using school resources to assist students in overcoming barriers to postsecondary education/training, and employment through assistive technology.
- Additionally, common themes related to dilemmas with assistive technology emerged including (a) determining which assistive technology is most appropriate and necessary for students' success in education and training programs, (b) limited knowledge about assistive technology and the devices and software program availability, and (c) limited funding and access to monetary resources related to assistive technology for supporting students with disabilities.
- Implication for policy and practice were discussed including guidelines for purchasing assistive technology and joint training opportunities between high schools and universities.

Martinez-Marrero, I., & Estrada-Hernandez, N. (2008). Assistive technology: An instructional tool to assist college students with written language disabilities. *TechTrends, 52, 56-62.*

- The purpose of this paper was to provide an overview of assistive technology and legal mandates such as the Assistive Technology Act signed (1988), American with Disabilities Act (1990), Individuals with Disabilities Act (1997), Rehabilitation Act (1992), and Telecommunications Act (1996).
- The paper described examples of specific input, output, and process devices (e.g., standard or large print keyboards, touch-screen devices, screen magnification, large print, keyboarding, or reading programs).
- The authors defined learning disabilities and described the need for college students to use assistive technology as an instructional tool (e.g., graphic organizers, speech recognition software).
- Recommendation of instructional design strategies included (a) being AT savvy, (b) making it worth the effort, (c) focusing on strengths, (d) ensuring AT availability and built-in capabilities of existing hardware, (e) determining if there is a need for training for technical support, (f) exploring flexibility and evaluating AT devices, and (g) consulting AT experts as needed are provided.

Mull, C. A., & Sitlington, P. L. (2003). The role of technology in the transition to postsecondary education of students with learning disabilities: A review of the literature. *The Journal of Special Education, 37*, 26-32.

- The purpose of this review was to identify specific technology recommendations found in literature, identify issues related to using these recommendations in the transition to postsecondary education, and provide recommendations for transition planning to postsecondary education.
- Articles from 1966 to 2000 using terms such as: assistive technology, auxiliary aids, adaptive technology, technological accommodations, and transition or postsecondary education were used.
- They identified common recommendations and issues with AT and transition to postsecondary education including: (a) AT can provide more individualized fits for learners and measure student progress simultaneously; (b) AT devices can be costly for institutions and funding sources are often limited; (c) AT devices must be used for what they are intended to be used for and maintenance must be performed by trained technicians; (d) to maximize the use of AT devices, students and personnel must be trained on how to properly use the devices; and (e) there is controversy with eligibility for assistive technology for students with learning disabilities.
- Recommendations were provided including (a) earlier identifications of funding sources for AT in postsecondary education, (b) AT devices should be based on current

assessment of the student needs and demands in their postsecondary education environment, (c) training for students must occur for maximized use of equipment, and (d) careful consideration must be examined before removing a student from eligibility of special education services which includes assistive technology services and devices at the postsecondary level.

Webb, K. W., Patterson, K. B., Syverud, S. M., & Seabrooks-Blackmore, J. J. (2008). Evidenced based practices that promote transition to postsecondary education: Listening to a decade of expert voices. *Exceptionality, 16, 192-206.*

- The purpose of this review was to determine evidence-based practices that promote transition to postsecondary education.
- The search included articles from 1995 to 2006 and common themes emerged including (a) self-determination strategies, (b) social and interpersonal strategies, (c) academic preparation, (d) accommodations, and (e) assistive technology.
- Implications for practice included (a) using self-determination in conjunction with assistive technology, (b) teachers need to expand their knowledge of using various technologies in their classrooms, and (c) giving students opportunities to practice using technology to determine which assistive technology best fits each student's needs.

Assistive Technology and Employment

Behrmann, M. M., & Schepis, M. M. (1994). Assistive technology assessment: A multiple case study review of three approaches with students with physical disabilities during the transition from school to work. *Journal of Vocational Rehabilitation, 4, 202-210.*

- The purpose of this study was to examine assessment procedures used to determine assistive technology needs of individuals with physical disabilities during the transition process from school to work.
- Using a qualitative multiple case study design, five students with physical disabilities received three assessment protocols.
- Assessment protocols included (a) professional multidisciplinary model, (b) video screening model, and (c) job coach model.
- Results indicated advantages and disadvantages of assessment protocols and recommendations for students in the transition process.

Heller, K. W., Allgood, M. H., Ware, S., Arnold, S. E., & Castelle, M. D. (1996). Initiating

requests during community-based vocational training by students with mental retardation and sensory impairments. *Research in Developmental Disabilities, 17, 173-184.*

- The purpose of this study was to investigate the effects of using communication boards to investigate requests on students ability to initiate requests during community-based vocational training.
- Using a multiple probe across participants design with four high school students ages 17-21 with mild to severe intellectual disabilities who participated in community-based instruction, authors examined the effectiveness of teaching students to request assistance (e.g., "I need...") using dual communication boards.
- Results indicated all four participants mastered the criteria for initiating requests using gestures and dual communication boards
- Future research is needed to see if requests can be initiated using communication boards at job training sites to acquire new skills and increase job performance, productivity, and independence

Riffel, L. A., Wehmeyer, M. L., Turnbull, A. P., Lattimore, J., Davies, D., Stock, S., & Fisher, S. (2005). Promoting independent performance of transition-related tasks using a palmtop PC-based self-directed visual and auditory prompting system. *Journal of Special Education Technology, 20, 5-14.*

- The purpose of this study was to investigate the performance of transition related tasks using a palmtop PC-based self-directed video and auditory prompting system.
- Using a multiple probe across participants design with four high school students with mild to moderate intellectual disabilities, authors investigated the effects of the Visual Assistant computer program on increasing productivity and task completion with vocational and independent living tasks.
- Results indicated three out of four students increased independence with tasks and reduced the total number of support statements and prompting needed to complete tasks and increase productivity.
- Future research is needed to examine the impact of using technology to promote positive transition outcomes and greater independence levels for students with disabilities.

Wehmeyer, M. L., Palmer, S. B., Smith, S. J., Parent, W., Davies, D. K., & Stock, S. (2006).

Technology use by people with intellectual and developmental disabilities to support employment activities: A single-subject design meta analysis. *Journal of Vocational Rehabilitation, 24, 81-86.*

- The purpose of this meta-analysis was to identify single-subject studies from 1977-2003 on the use of technology by individuals with intellectual disabilities.
- From the 411 articles that fit the search criteria, 13 single subject design studies were selected for inclusion in the meta-analysis.
- These studies included students with intellectual disabilities ranging in age from 12-37 who encompassed vocational and rehabilitation-related activities for transition aged students through adulthood.
- The mean Percentage Non-Overlapping Data (PND) scores for all 95 cases was 93% indicating that employment and rehabilitation outcomes resulted in "fair" effects for individuals with intellectual or developmental disabilities.
- Findings indicated technology use can contribute to more positive vocational and employment related outcomes for youth and young adults with disabilities.

Assistive Technology and Independent Living

Johnson, K. L., Dudgeon, B., Kuehn, C., & Walker, W. (2007). Assistive technology use among adolescents and young adults with spina bifida. *Research and Practice, 97, 330-336.*

- The purpose of this study was to examine data on assistive technology use of adolescents and young adults with spina bifida and their participation in the community.
- Authors examined historical longitudinal data from children's hospitals and medical centers for adolescents and young adults with spina bifida and their use of assistive technology in relation to their community participation
- Participant record reviews were selected for individuals between the ages of 13-27 years old with a diagnosis of myelomeningocele and their use of assistive technology.
- Results indicated individuals with spina bifida have a greater need for assistive devices such as wheelchairs, braces, walking aids, digital organizational devices, and personal care adaptations in order to increase their independence in the areas of education, employment, and independent living.

Mechling, L. C. (2007). Assistive technology as a self-management tool for prompting students with intellectual disabilities to initiate and complete daily tasks: A literature review. *Education and Training in Developmental Disabilities, 42, 252-269.*

- The purpose of this study was to review the literature on the use of assistive technology as a self-management tool for individuals with intellectual disabilities.
- This review identified empirical literature from 1990-2005 on the use of assistive technology as a self-management tool for individuals with intellectual disabilities.
- Authors used the following inclusion criteria (a) use of experimental design, (b) publication in peer-reviewed journal, (c) evaluation of assistive technology for self-management, and (d) participants had intellectual disabilities.
- Forty studies meeting the inclusion criteria were identified and arranged into four categories (a) picture prompts, (b) palmtop personal computers, (c) tactile prompting, and (d) auditory prompting
- Findings from these studies indicated positive results for students when using assistive technology as an antecedent prompt for eliciting a target response and reducing the need for instructor prompts.
- Future research is still needed on how to best use assistive technology and how it can continue to be improved.

Augmentative and Alternative Communication and Transition

Alwell, M., & Cobb, B. (2009). Social and communicative interventions and transition outcomes for youth with disabilities: A systematic review. *Career Development for Exceptional Individuals, 32, 94-107.*

- The purpose of this study was to explore the relationship between social and communicative interventions and transition related outcomes for secondary-aged youth with disabilities through a systematic review.
- Thirty studies including 316 youth with a range of disability levels (high and low incidence disabilities) were included in the review.
- Additional analyses were done on original research in the areas of (a) augmentative and alternative communication (AAC), (b) conversation skills, (c) decreasing behavior, and (d) social skills training (SST).
- Results indicated little support for AAC, modest support for increasing conversation skills and SST, and they were unable to determine support for reducing behavior due to effect size calculation issues.
- Recommendations for future research and implications for practice were discussed.

Atanasoff, L.M., McNaughton, D., Wolfe, P.S., & Light, J. (1998). Communication demands of university settings for students using augmentative and alternative

communication. *Journal on Postsecondary Education and Disability, 13, 32-47.*

- The purpose of this study was to learn directly from the experiences of successful college students who use AAC and determine how to anticipate and respond to the demands of postsecondary education.
- Seven college students who use AAC participated in the survey and described their communication experiences in college.
- Results indicated students were successful in communicating on a variety of topics with a wide variety of methods, particularly many expressed email as one of the most effective ways they were understood by others.
- Survey results were used to discuss strategies for successful participation by AAC users in university settings as well as directions for future research.

Baxter, S., Enderby, P., Evans, P., & Judge, S. (2012). Barriers and facilitators to the use of high-technology augmentative and alternative communication devices: A systematic review and qualitative synthesis. *International Journal of Language & Communication Disorders, 47, 115-129.*

- The purpose of this review was to examine the various factors influencing the use AAC as a component of the practitioner's decision-making and intervention process.
- The review included 27 studies published between 2000 and 2010, which described high tech device AAC use and reported restrictions and facilitators for use. No quality indicators were used; as this synthesis was meant to be inclusive of all design types, including qualitative studies.
- Studies were evaluated by a thematic review of influential factors, including ease of use; reliability; availability of technical support; the voice and language of the device; the device decision-making process; time taken to generate a message; family attitudes; perceptions and roles; other people interacting with the AAC user; use of available services; and the knowledge, skills and attitudes of staff.
- Results indicated that each of these factors warrants consideration by practitioners if implementation and use of the AAC are to be successful for long-term outcomes.

Blackstone, S. W., Williams, M. B., & Wilkins, D. P. (2007). Key principles underlying research and practice in AAC. *Augmentative and Alternative Communication, 23, 191-203.*

- The purpose of this paper was to describe the six principles of assistive technology and augmentative and alternative communication.

- Principle 1 requires active participation of individuals with complex communication needs (CCN) in all AAC activities.
- Principle 2 seeks to ensure theoretical constructs underlying research and development in AAC are grounded, widely accepted, and clearly defined.
- Principle 3 underscores the need to use ergonomics in the design and development of AAC technologies and instructional strategies.
- Principle 4 highlights communication partners and the unique roles they play in AAC.
- Principle 5 accentuates the need to focus on societal roles, relationships, and opportunities made possible by AAC technologies and services.

Hamm, B., & Mirenda, P. (2006). Post-school quality of life for individuals with disabilities who use AAC. *Augmentative and Alternative Communication*, 22, 134-147.

- The purpose of this study was to examine post-school outcomes of individuals with complex communication needs and their quality of life in the areas of: (a) education, employment and independent living; (b) how they perceived their quality of life; and (c) how they are communicating with others and their satisfaction with that mode of communication.
- Using a survey design, researchers examined the relationship between communication, outcomes, and perceived quality of life.
- Results indicated a high positive correlation between quality of life and quality of communication scores, and participants who achieved relatively better outcomes showed evidence of higher communicative competence.
- Additionally, the majority of participants were dissatisfied with the lack of AAC and other services available to them as young adults.
- Implications for practice, suggestions for future research, and advocacy efforts related to transition planning were discussed.

McNaughton, D., & Light, J. (2015). What we write about when we write about AAC: The past 30 years of research and future directions. *Augmentative and Alternative Communication*, 31, 261-270.

- The purpose of this review of literature was to identify trends in the field of AAC research.
- The authors examined publications from 1985 to 2014 that appeared in the AAC journal.
- Of the four types of interventions noted (i.e., intervention, descriptive, experimental, and instrument/measurement development), the most common type was intervention studies with younger individuals with complex communication needs.

- Future research is needed with post-school-aged participants and on the needs of communication partners.

Mirenda, P. (2014). Revisiting the mosaic of supports required for including people with severe intellectual or developmental disabilities in their communities. *Augmentative and Alternative Communication, 30, 19-27.*

- The purpose of this article was to examine the progress that has been made over the past 20 years in providing opportunities for community living, inclusive schooling, and integrated employment for people with severe intellectual or developmental disabilities that rely on Augmentative and Alternative Communication (AAC).
- Analyzing research and data, trends were determined in the areas of independent living, education, leisure activities, and community access.
- Results indicated progress in the past 20 years in the area of AAC for students with disabilities and provided recommendations for future research.

Odom, A., & Upthegrove, M. (1997). Moving toward employment using AAC: A case study. *Augmentative and Alternative Communication, 13, 258-262.*

- The purpose of this case study was to describe the journey of one man, with multiple disabilities who uses AAC, toward supported employment.
- Using a case study design, authors outline the development of employment for an individual who used a high technology assistive communication device for communication and for employment.
- Issues discussed include a history of experience with AAC, technology support at the worksite, and the benefits of support employment.
- Results indicated the importance of a belief system that considers employment as an expectation for all people.
- The goal of AAC as a way to increase quality of life including employment was discussed.

Parette, H. P., & Angelo, D. H. (1996). Augmentative and alternative communication impact on families: Trends and future directions. *The Journal of Special Education, 30, 77-98.*

- The purpose of this study was to review the literature regarding three emerging trends related to AAC impact, including the prescription of appropriate AAC devices, implementation of AAC across multiple contexts, and maintenance of AAC use and anticipation of transition needs.

- Results indicated a failure to consider family issues may contribute to increased family stress and failure of children and families to use the devices.
- Implications for future AAC service delivery were summarized.

Sigafoos, J., & Drasgow, E. (2001). Conditional use of aided and unaided AAC: A review and clinical case study. *Focus on Autism and Other Developmental Disabilities*, 16, 152-161.

- The purpose of this article was to examine aspects of multi-model AAC and review instructional strategies for developing conditional use of aided and unaided AAC.
- The secondary purpose was to describe a case study of an adolescent boy with a developmental disability who acquired conditional use of aided and unaided AAC based on the presence or absence of an aided device.
- Results indicated a need for careful programming during intervention may promote conditional use of multiple modes of AAC.

Additional Resources

1. Bridging Apps <http://bridgingapps.org/>

- This site is a detailed and efficient Assistive Technology appsearch engine that allows users to search by age, targeted skills, and other criteria to find apps for Apple or Android. This is a great resource for educators, parents, and students.

2. Burkhart, L.J., *Simplified Technology*. Retrieved from <http://www.lburkhart.com/>, April, 1, 2016.

This website includes:

- Web resources for hand-outs, PowerPoint's and discussion of aided language learning environments supported by assistive technology.
- Information specific to Angelman Syndrome, Rhett's Syndrome, Cortical Visual Impairment (CVI) and Apraxia, as well as general information for learners with complex communication needs.
- Includes a variety of levels of support for light and high tech, creating communication communities, and practical instruction.
- Includes resources tailored to teachers, service providers, and parents.

3. Georgia Project for Assistive Technology. (Revised 2008, March, 12). *Assistive Technology Consideration Resource Guide.*

- Designed to provide a framework for the development of Individualized Education Plan assistive technology considerations.
- Includes instructional/access areas, standard tools, modifications and accommodations to tasks, tools and expectations, and assistive technology solutions in an easy-to-read table.

4. Hess, J., & Gutierrez, A. M. (2009). *Family transition guide to assistive technology and transition planning: Planned transitions are smooth transitions!* Retrieved from www.ftcd.info on April 1, 2016.

The FCTD Family Information Guide to Assistive Technology and Transition includes the following sections:

- An Introduction to Transition Planning and Assistive Technology
- How to Make a Successful Transition with Your Assistive Technology
- Laws Governing Accommodations and Transition in Birth-12 & Postsecondary Settings
- Glossary of AT and Transition Terms
- Additional AT and Transition Resources

5. Indiana AT Project: Authored by employees of an Indiana Easter Seals AT resource center. <http://www.eastersealstech.com>

- This site features AT news, Apps for college students, webinars on various topics, product reviews, and other resources for educators, students and parents.

6. National Center on Technology and Disability www.ctdinstitute.org/library

- This website is funded by the Offices of Special Education Programs (OSEP) through the U.S. Department of Education.
- This website includes resources for transition in the areas of assistive technology, independent living, postsecondary, technology tools, and transition to employment.
- Additionally, there are resources for early childhood, education K-12, family and student support, and state and local leaders.

7. National Center on Accessible Educational Materials <http://aem.cast.org>

- This center is funded by the Office of Special Education Programs (OSEP) through the U.S. Department of Education.
- This center provides resources and technical assistance for educators, parents, students, publishers, conversion houses, accessible media producers, and others interested in learning more about AEM and implementing AEM and the National Instructional Materials Accessibility Standard (NIMAS).

8. Quality Indicators For Assistive Technology (QIAT): Guiding the provision of quality AT services. <http://www.qiat.org/qiat-list.html>

- This website lists the quality indicators and their descriptions for Assistive Technology.
- Provides a resource bank with a variety of resources for parents, students, and educators including procedures for IEP teams related to AT, app comparisons, resource guides for specific disabilities (e.g., visual impairment), and other resources related to specific subject areas (e.g., reading).

9. Simon Technology Center <http://www.pacer.org/stc/>

- This site features a variety of resources including lending library, individualized training sessions, e-newsletter, workshops, videos, and other projects related to assistive technology for educators, students, and families.

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