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## Knowledge and Skills Needed by Speech-Language Pathologists for Diagnosis, Assessment, and Treatment of Autism Spectrum Disorders Across the Life Span

*Ad Hoc Committee on Autism Spectrum Disorders*

*This knowledge and skills document is an official statement of the American Speech-Language-Hearing Association (ASHA). It was developed by ASHA's Ad Hoc Committee on Autism Spectrum Disorders. Members of the committee were Amy Wetherby (chair), Sylvia Diehl, Emily Rubin, Adriana Schuler, Linda Watson, Jane Wegner, and Ann-Mari Pierotti (ex officio). Celia Hooper, vice president for professional practices in speech-language pathology, 2003–2005, served as the monitoring officer. The ASHA (2001) Scope of Practice in Speech-Language Pathology states that the practice of speech-language pathology includes providing services for individuals with disorders of pragmatics and social aspects of communication, which would include individuals with autism spectrum disorders. This also includes individuals with severe disabilities and language disabilities in general. The ASHA (2004b) Preferred Practice Patterns are statements that define universally applicable characteristics of practice. It is required that individuals who practice independently in this area hold the Certificate of Clinical Competence in Speech-Language Pathology and abide by the ASHA (2003) Code of Ethics, including Principle of Ethics II, Rule B, which states that "individuals shall engage in only those aspects of the profession that are within the scope of their*

*competence, considering their level of education, training, and experience." This document (LC\_SLP/SLS\_3-2006) was approved by ASHA's Speech-Language Pathology/Speech or Language Science Assembly of the Legislative Council on February 3, 2006.*

This document outlines the knowledge and skills that are needed to implement the roles and responsibilities of speech-language pathologists in serving individuals with autism spectrum disorders (ASD). It is consistent with the position statement (American Speech-Language-Hearing Association [ASHA], 2006b) and guidelines (ASHA, 2006a) documents and recognizes the central role that speech-language pathologists play in screening, diagnosing, assessing for program planning, enhancing, and monitoring social communication in individuals with ASD. On the basis of the roles and responsibilities delineated in the technical report and guidelines, speech-language pathologists serving individuals with ASD and their families are expected to have knowledge and skills in the following 11 broad areas:

### 1: Core Characteristics and Challenges of ASD

#### Knowledge required:

- 1.a. typical developmental achievements that influence the ability to form relationships, function effectively, and actively participate in everyday life, including:
  - social communication
  - language and related cognitive skills, and
  - behavior and emotional regulation

Reference this material as American Speech-Language-Hearing Association. (2006). *Knowledge and skills needed by speech-language pathologists for diagnosis, assessment, and treatment for autism spectrum disorders across the life span*. Available from <http://www.asha.org/members/deskref-journal/deskref/default>

Index terms: autism, autism spectrum disorders, pervasive developmental disorders, family roles, screening, diagnosis, social communication, assessment, intervention

Associated documents: Position statement, technical report, guidelines

- 1.b. the critical impact of ecological factors, including communication partners and social/cultural context, on typical development
- 1.c. etiological factors (biological or genetic) and their complex interaction
- 1.d. patterns of gender differences specific to communication development
- 1.e. characteristics and challenges of individuals with ASD in social communication, including joint attention (e.g., social orienting, establishing shared attention, monitoring emotional states, and considering another's intention) and social reciprocity (e.g., initiating bids for interaction, maintaining interactions by taking turns, and responding contingently to bids for interaction initiated by others)
- 1.f. characteristics and challenges of individuals with ASD in language, literacy, and related cognitive skills (e.g., understanding and using nonverbal and verbal communication, symbolic play, literacy, and executive functioning)
- 1.g. characteristics and challenges of individuals with ASD in behavior and emotional regulation (e.g., effectively regulating one's emotional state and behavior while focusing attention to salient aspects of the environment and engaging in social interaction)
- 1.h. challenges faced by the communication partners of individuals with ASD in modifying their interactive style and the environment to ensure successful communicative exchanges
- 1.i. awareness of cultural variances and the influence of culture upon communication
- 2.b. cultural, linguistic, and socioeconomic factors that affect families' beliefs about disability, social interactions, and their access to and participation in services
- 2.c. implications of biological and genetic etiological factors for the broader phenotype of ASD characteristics that may occur in other family members of individuals with ASD
- 2.d. parent stress and adjustment and supports to promote coping
- 2.e. sibling relations and adjustment
- 2.f. family dynamics and psychosocial development in relation to social communication development and effectiveness
- 2.g. methods to conduct family education and support activities
- 2.h. role of alternative medicines and treatments

## 2: Working With Families

### Knowledge required:

- 2.a. the multiple roles assumed by family members of individuals with ASD, including that of investigators of information on characteristics of autism, causes, and effective interventions; advocates for services; collaborators in assessment and diagnosis as they attempt to define their child's symptoms; cotherapists involved in organized intervention programs; service coordinators; financiers of nonpublicly funded services; and lobbyists for change

### Skills required:

- 2.1. formation of partnerships with families of individuals with ASD, including professional-family collaborations in assessment and intervention
- 2.2. effective communication with family members, including counseling and education and instruction in specific skills
- 2.3. coordination of services, advocacy for families, and promotion of self-advocacy
- 2.4. demonstration of sensitivity to cultural, linguistic, and socioeconomic diversity in interactions and clinical decision making

## 3: Screening

### Knowledge required:

- 3.a. diagnostic criteria
- 3.b. prevalence
- 3.c. etiology and related medical conditions
- 3.d. importance of early identification and the role of the speech-language pathologist
- 3.e. red flags of ASD for early identification
- 3.f. broadband and autism-specific screening tools
- 3.g. when to make referrals to other professionals and professional teams experienced in assessment and differential diagnosis of individuals with ASD
- 3.h. how to share screening information with parents

- 3.i. the needs of culturally and linguistically diverse populations, including the selection and/or adaptation of screening instruments (ASHA, 2004b)
- 3.j. cultural variances including verbal and nonverbal behavior that may impact characteristics of ASD such as eye gaze, directness, sense of humor

**Skills required:**

- 3.1. observation, recognition, and interpretation of indicators and characteristics of ASD
- 3.2. selection and use of validated broadband and autism-specific screening tools in collaboration with primary care providers and other health care and child care providers
- 3.3. documentation and communication of screening findings to family members
- 3.4. effective, delicate, and empathic communication when informing family members that the child is at risk for ASD
- 3.5. decision making about:
  - the referral to determine eligibility for early intervention,
  - the need for a diagnostic evaluation to identify or rule out ASD, and
  - the appropriate diagnostic path or referral to an experienced speech-language pathologist, other experienced professional, or appropriate interdisciplinary team

**4: Diagnosis**

**Knowledge required:**

- 4.a. federal and state laws and regulations regarding scope of practice, referral, and placement procedures
- 4.b. diagnostic criteria for ASD and related conditions
- 4.c. prevalence
- 4.d. how to obtain information regarding etiology and related medical conditions
- 4.e. importance of early diagnosis and the role of the speech-language pathologist
- 4.f. how to evaluate the validity of diagnostic tools
- 4.g. the necessary information to gather in a diagnostic evaluation about the child's health, developmental and behavioral history, past

intervention and academic history, and medical history of the family

- 4.h. other related diagnostic categories and when to make appropriate referrals to identify or rule out related conditions
- 4.i. how to rule out or confirm hearing loss while working with an audiologist
- 4.j. the types of speech and language impairments that can co-occur with ASD, including features of specific language impairment, apraxia, and dysarthria
- 4.k. how to share information about diagnosis with parents
- 4.l. the challenges of determining eligibility for services for individuals with ASD, especially high-functioning individuals
- 4.m. the needs of culturally and linguistically diverse populations, including the selection and/or adaptations of diagnostic instruments (ASHA, 2004b)

**Skills required:**

- 4.1. observation, recognition, and interpretation of diagnostic characteristics of ASD
- 4.2. selection and correct use of valid diagnostic tools for ASD
- 4.3. appropriate referrals to other professionals to identify or rule out related conditions
- 4.4. diagnosis of the types of speech and language impairments that can co-occur with ASD, including features of specific language impairment, apraxia, and dysarthria
- 4.5. integration of findings from diagnostic tools for ASD, diagnostic evaluation, and information from other professionals or members of an interdisciplinary team, to determine diagnosis
- 4.6. documentation and communication of findings about diagnosis to family members, individually or in conjunction with a collaborative team
- 4.7. effective, delicate, and empathic communication when informing family members that the child has ASD
- 4.8. decision making about eligibility for services
- 4.9. appropriate recommendations and referrals for services and assistance to families in navigating the educational and health care systems, as well as promotion of self-advocacy

## 5: Assessment for Program Planning

### Knowledge required:

- 5.a. formal and informal strategies to assess an individual's current profile and the influence of the communication partner and the learning environment across everyday situations:
  - social communication, including joint attention, social reciprocity, and repertoire of conventional and unconventional communicative means and functions
  - language, literacy, and related cognitive skills, including understanding and using nonverbal and verbal communication, the communicative functions of echolalia, symbolic play, decoding and comprehension of written language, and executive functioning
  - functions of challenging behavior
  - augmentative and alternative communication (AAC) to potentially augment input and output
  - behavior and emotional regulation
  - contextual support
  - modeling and the quality of language input provided by communication partners
- 5.b. dynamic assessment strategies in which support is systematically provided to determine what factors influence and enhance an individual's current and emerging skills (ASHA, 2005b) and are used to identify which skills have been achieved, which are emerging, and which are lacking and what contextual supports enhance communication skills
- 5.c. how to prioritize learning objectives within natural communication contexts, combining information from a developmental framework, family priorities, functional needs, and learning styles
- 5.d. differences in families, cultures and languages
- 5.e. anatomy and physiology underlying speech and language skills
- 5.f. oromotor function and its relationship to natural speech production
- 5.g. how to conduct and interpret the results of a comprehensive oral peripheral examina-

tion, including assessments of the primary subsystems of speech (i.e., respiration, phonation, articulation, and resonance)

- 5.h. potential to use/and or increase natural speech
- 5.i. prognostic indicators for functional natural speech and language performance in spoken and written modes
- 5.j. impact of neuropharmacological agents on communication performance

### Skills required:

- 5.1. use of formal and informal strategies to assess an individual's current profile and the influence of the communication partner and the learning environment across everyday situations:
  - social communication, including joint attention, social reciprocity, and repertoire of conventional and unconventional communicative means and functions
  - language, literacy, and related cognitive skills, including understanding and using nonverbal and verbal communication, the communicative functions of echolalia, symbolic play, decoding and comprehension of written language, and executive functioning
  - functional assessment of challenging and/or unconventional/idiosyncratic behavior (gathering information to determine when a behavior is very likely to occur and not occur and to identify the possible functions of the behavior)
  - emotional regulatory capacities (ability to attain and maintain an optimal state of attention and arousal)
  - AAC to potentially augment input and output
  - contextual support, including visual and environmental supports and modification of the environment for social engagement
  - modeling and the quality of language input provided by communication partners, including responsiveness to subtle communicative bids and idiosyncratic language
- 5.2. identification of achieved and emerging skills and contextual supports to enhance communication skills

- 5.3. prioritization of learning objectives within natural communication contexts, combining information from a developmental framework, functional needs, learning styles, and family priorities and preferences
- 5.4. respect of and adaptation to differences in families, cultures, languages, and resources

## 6: Characteristics of Evidence-Based Intervention Approaches and Strategies

### Knowledge required:

- 6.a. a framework for evaluating the quality of scientific evidence concerning the effectiveness of interventions for individuals with ASD
- 6.b. the critical components of effective, evidence-based practice for individuals with ASD
- 6.c. the impact of individual and caregiver preferences, cultural differences, and learning styles on intervention
- 6.d. meaningful outcome measures such as
  - gains in initiation of spontaneous communication in functional activities
  - generalization of gains across activities, interactants, and environments
  - ecological validity of gains
- 6.e. prioritization of intervention goals derived from the core characteristics and challenges of ASD (i.e., social communication, language, literacy, and related cognitive skills, and behavior and emotional regulation) as essential outcomes
- 6.f. evaluation of treatment outcomes related to improvements in social communication that affect the ability to form relationships, function effectively, and actively participate in everyday life
  - joint attention (e.g., social orienting, establishing shared attention, monitoring emotional states, and considering another's intentions)
  - social reciprocity (e.g., initiating bids for interaction, maintaining interactions by taking turns, and providing contingent responses to bids for interaction initiated by others)
- 6.g. evaluation of treatment outcomes related to improvements in language, literacy, and related cognitive skills that affect the ability to form relationships, function effectively, and actively participate in everyday life:
  - understanding and using nonverbal and verbal communication
  - engaging in functional and symbolic play
  - comprehending and using reading, writing, and technology skills
  - executive functioning (the ability to problem solve and self-monitor goal-directed behavior)
- 6.h. evaluation of treatment outcomes related to improvements in behavior and emotional regulation that affect the ability to form relationships, function effectively, and actively participate in everyday life:
  - effectively regulating one's emotional state and behavior
  - initiating and maintaining social engagement
  - focusing attention to salient aspects of the social environment
- 6.i. learning and processing styles in individuals with ASD and strategies to accommodate these styles and developmental needs of individuals with ASD
- 6.j. strategies to enhance self-determination:
  - activity/environmental supports or modifications
  - use of routines, social stories, and repeated learning opportunities to increase predictability
  - adjustment of social complexity
  - education of communication partners
  - peer- or adult-mediated social support
- 6.k. empirically supported strategies to promote initiation and generalization:
  - environmental arrangement (e.g., provide preferred materials, choice making)
  - interspersing preferred and nonpreferred activities
  - using natural reinforcers
  - time delay/waiting
  - following the child's attentional focus
  - structuring predictability and turn taking into activities
  - contingent imitation

- 6.l. the relationship between challenging behavior and communication and that challenging behavior can serve one or more communication and/or emotional regulatory functions
  - 6.m. the use of either punishment or extinction without the concurrent use of a reinforcement procedure to build desired behavior is not advisable to manage challenging behavior because the function is not being addressed
  - 6.n. positive behavior support as the most effective evidence-based treatment leading to long-term effectiveness in decreasing challenging behavior:
    - behavior hypotheses—purpose of the behavior, your best guess about why the behavior occurs
    - prevention strategies—ways to make events and interactions that trigger challenging behavior easier for the individual to manage
    - replacement skills—new skills to teach throughout the day to replace the challenging behavior and serve the same function
    - responses—what partners will do when the challenging behavior occurs to ensure that the challenging behavior is not maintained and the new skill is learned
  - 6.o. evaluating the long-term effectiveness of behavioral intervention aimed at decreasing challenging behavior
  - 6.p. the range of applications of AAC and their impact on social communication, language, literacy, and related cognitive behaviors and behavior and emotional regulation:
    - unaided approaches (e.g., gestures, manual signs, body language, and facial expressions)
    - aided approaches (e.g., picture/graphic symbols, communication books, assistive devices)
  - 6.q. the positive relationship of AAC to the development of the following:
    - speech
    - prevention of challenging behaviors
    - communication replacements of challenging behaviors
    - language comprehension
    - expressive language and social communication
  - 6.r. matching AAC approaches to learning style, motor skills, communication contexts, individual and caregiver preferences, cultural variables, and the individual's developmental level of social communication skills
  - 6.s. the relationship between play and shared positive affect, social reciprocity, rates and length of communicative interactions, and functional and symbolic object use
  - 6.t. evidence-based methods of promoting play with typically developing peers and the active ingredients of such models
  - 6.u. the critical importance of interactions with typically developing peers to promote social competence with peers
  - 6.v. the subtle and complex nature of language and sociocommunication difficulties in higher functioning individuals
- Skills required:**
- 6.1. evaluation of the quality of scientific evidence based on internal validity, external validity, and generalization of treatment outcomes concerning the effectiveness of interventions for individuals with ASD
  - 6.2. use of active ingredients of effective, evidence-based practice for individuals with ASD
  - 6.3. consideration of the social or ecological validity of interventions when incorporating individual and caregiver preferences, cultural differences, and learning styles into intervention planning and program design
  - 6.4. use of strategies that accommodate the learning and processing styles and developmental needs of individuals with ASD to promote social communication, language, literacy, and related cognitive behaviors and behavior and emotional regulation:
    - environmental arrangements and structure
    - visual cues and supports, including work systems and schedules
    - routines to support participation and learning
    - scripts and social stories
    - video modeling
    - previewing of learning context and activity

- meaningful structured learning activities to support the acquisition of generative language use
  - explicit instruction on integrating information
  - use of salient cues, including adjusting intensity of input and reducing level of irrelevant stimulation
  - generalization activities for all goals—plan for experiences in varied contexts with varied partners
- 6.5. teaching individuals with ASD to use self-assessment and problem-solving strategies to enhance self-awareness, self-management, self-reliance, self-advocacy, and self-esteem:
- providing choices
  - acknowledging preferences
  - teaching appropriate strategies to end or refuse activities
  - providing control over stimulation
- 6.6. observation and interpretation of the communication and/or emotional regulatory functions of challenging behavior
- 6.7. use of positive behavior support to address challenging behavior:
- formulation of behavior hypotheses—determining the purpose of the behavior or the range of possible reasons why the behavior occurs
  - prevention strategies—implementation of ways to make events and interactions that trigger challenging behavior easier for the individual to manage, environmental arrangement, use of adaptive equipment etc., that prevent the behavior from occurring in the first place by eliminating the triggers
  - replacement skills—enhancing new skills throughout the day to replace the challenging behavior and serve the same function
  - responding in a positive manner—assist partners in identifying and encouraging the replacement skill and ensure that the challenging behavior is not maintained
- 6.8. evaluating the long term effectiveness of behavioral intervention aimed at decreasing challenging behavior
- 6.9. incorporation of a range of AAC applications to promote social communication, language, literacy, and related cognitive behaviors and behavior and emotional regulation
- 6.10. selection of appropriate modalities of AAC approaches based on learning style, communication contexts, individual and caregiver preferences, cultural variables, and the individual’s developmental level of social communication skills
- 6.11. observation and evaluation of play with typically developing peers in terms of levels of symbolic representation, peer interaction, language use, and positive affect
- 6.12. promotion of peer-mediated play in inclusive settings by collaborating with others in home, school, and community settings
- 6.13. promotion of peer-mediated play by recruiting and coaching suitable peers
- 6.14. design and implementation of peer-mediated play by building on identified cultural, ecological, developmental, and instructional supports
- 6.15. assistance to communication partners in recognizing the potential communication functions of challenging behavior and designing environments to support positive behavior; embracing a broad view of communication, speech-language pathologists should assess and enhance the following:
- initiation of spontaneous communication in functional activities across social partners and settings
  - comprehension of verbal and nonverbal communication in social, academic, and community settings
  - communication for a range of social functions that are reciprocal and promote the development of friendships and social networks
  - verbal and nonverbal means of communication, including natural gestures, speech, signs, pictures, written words, and other AAC systems
  - access to literacy and academic instruction and curricular, extracurricular, and vocational activities

## 7: Transition and Advocacy

### Knowledge required:

- 7.a. current laws and policies and affecting services for persons with ASD

- 7.b. the process of developing and adopting new policies, laws, and regulations for services
- 7.c. networks and organizations for persons with ASD
- 7.d. transitions critical to independence for persons with ASD
- 7.e. communication, social interaction, and cognitive and adaptive function needs to ensure successful educational, employment, residential, recreation, and leisure opportunities

#### **Skills required:**

- 7.1. collaboration with families and community providers to plan transition from school to work, to achieve community participation
- 7.2. advocacy for services for persons with ASD, including recreation and leisure
- 7.3. preparation of persons with ASD for educational, work, and community transitions
- 7.4. support of communication, social interaction, cognitive, and adaptive function needs in educational, employment, recreational, and residential settings
- 7.5. selection, scheduling, coordination, and evaluation of services
- 7.6. contribution to the development of policy, legislation, and regulations that will enhance services for persons with ASD

### **8: Service Delivery Models**

#### **Knowledge required:**

- 8.a. variables related to service delivery, including frequency of service, providers and their respective roles, settings in which intervention will take place, classroom-based intervention, curriculum-based intervention, and supports for inclusion (e.g., educational, work, and leisure)
- 8.b. different service delivery models and their associated advantages and disadvantages
- 8.c. matching service delivery to meaningful outcomes
- 8.d. strategies to deliver family- and person-centered practices
- 8.e. importance of family involvement and working with a variety of partners
- 8.f. facilitation of peer-mediated learning

#### **Skills required:**

- 8.1. support of communication for individuals with ASD in a variety of settings
- 8.2. delivery of family- and person-centered practices
- 8.3. choice of the most appropriate service delivery model or models
- 8.4. provision of services in natural learning environments that are connected with functional and meaningful outcomes and provision of pull out services only when repeated opportunities do not occur in natural learning environments or to work on functional skills in more focused environments
- 8.5. ensuring that any pull-out services are tied to meaningful, functional outcomes
- 8.6. advocacy for individuals with ASD in promoting social communication skills that lead to greater independence in home, school, work, and community environments and greater participation in social networks

### **9: The Collaborative Role of the Speech-Language Pathologist**

#### **Knowledge required:**

- 9.a. skills and potential contributions of other team members to the intervention program
- 9.b. roles of other professionals and skill in making referrals to appropriate professionals, agencies, and services
- 9.c. identification and measure of the desired outcomes in collaboration with family and other team members
- 9.d. current and potential resources (e.g., other speech-language pathologists, physical therapists, occupational therapists, psychologists, rehabilitative engineers, cultural brokers, interpreters as needed, friends, peers, teachers, coworkers, and employers) along with levels of support required
- 9.e. effective collaboration methods including identifying role within a team structure
- 9.f. available audiovisual materials, printed and electronic materials, curriculum guides, and presenters with knowledge of ASD
- 9.g. caregiver systems
- 9.h. strategies for consultation, collaboration, and advocacy for individuals with ASD

- 9.i. culturally and linguistically diverse populations (e.g., disparity of services, prevalence, cultural beliefs, variances within nonverbal behaviors; ASHA, 2004b)
- 9.j. current laws and policies affecting services

**Skills required:**

- 9.1. ability to hold workshops, lectures, seminars, and in-service programs
- 9.2. development of continuing education products, including Web-based media
- 9.3. identification and coordination of the participation of other team members throughout the assessment and intervention process
- 9.4. identification of the need for, and then referral to, professionals from other disciplines to conduct a comprehensive and integrated assessment and intervention program
- 9.5. effective collaboration with other team members in all phases of assessment and intervention
- 9.6. teaching other professionals, family members, employers, and others how to support the individual's communication
- 9.7. management and interpretation of individuals' records, including correspondence, team reports, and daily logs
- 9.8. establishment of partnerships with families and others
- 9.9. participation in group problem solving and consensus building
- 9.10. demonstration of sensitivity to cultural and linguistic diversity
- 9.11. advocacy for, and with, families and individuals with ASD
- 9.12. demonstration of positive, effective interpersonal communication

**10: Professional Development of Speech-Language Pathologists to Work Effectively With the Population With ASD**

**Knowledge required:**

- 10.a. methods for acquiring initial knowledge and skills and remaining current in evidence-based practices relevant to individuals with ASD
- 10.b. awareness of one's own personal, professional, and cultural assumptions and the

ways in which they may affect practice in serving individuals with ASD

- 10.c. professional organizations, community resources, print materials, and online resources relevant to serving individuals with ASD
- 10.d. principles for evaluating, selecting, and contributing to evidence-based practices in serving individuals with ASD
- 10.e. informed-consent procedures to ensure that individuals and significant others make informed choices when considering unvalidated instructional procedures and techniques
- 10.f. how to support individuals with ASD to communicate their technical, educational, career, recreational, and housing needs to advocate for increased responsiveness from community, regional, government, and educational agencies
- 10.g. how to provide information to the public about the communication needs of children with ASD
- 10.h. how to provide testimony to various government, legal, or education agencies in support of services for individuals with ASD
- 10.i. how to advocate for timely, quality services that are directed by individuals with ASD and their families
- 10.j. funding and referral sources
- 10.k. current reimbursement policies and practices
- 10.l. advocacy, legal, and regulatory procedures that affect individuals with ASD
- 10.m. laws/regulations regarding the rights of individuals with ASD
- 10.n. a variety of media to design and disseminate information about ASD
- 10.o. the health care system as it impacts treatment and funding for treatment

**Skills required:**

- 10.1. integration of new evidence relevant to ASD into clinical practice to achieve optimal outcomes
- 10.2. assessment of one's own effectiveness in clinical services to individuals with ASD to achieve optimal outcomes
- 10.3. ability to access resources relevant to ASD for ongoing professional development

- 10.4. development, evaluation, and sharing of new information, strategies, materials, and/or technologies to improve clinical services to individuals with ASD
- 10.5. participation in preservice and continuing education designed to prepare and enhance the knowledge and skills of professionals who provide services for individuals with ASD
- 10.6. ability to follow informed-consent procedures when considering unvalidated instructional procedures or techniques
- 10.7. support of individuals with ASD in self-advocacy measures
- 10.8. ability to give testimony when needed to various government, legal, or education agencies in support of services for individuals with ASD
- 10.9. ability to locate referral and/or funding sources related to the communication functioning of individuals with ASD including funding of speech-generating devices (ASHA, 2005a)
- 11.2. collaboration in larger research studies to add to the knowledge base of ASD
- 11.3. development and evaluation of new methods, materials, and technologies to improve assessment and intervention practices in ASD
- 11.4. reporting and dissemination of results of clinical research tailored to a variety of audiences (clinicians, other professionals, consumers, employers, administrators, policymakers, and others)
- 11.5. write reports capable of obtaining funding for speech-generating devices

## 11: Research Related To Individuals With ASD

### Knowledge required:

- 11.a. current research and/or ways to participate in and advance the knowledge base of the nature of the disability, screening, diagnosis, prognostic indicators, assessment, treatment, and service delivery of individuals with ASD
- 11.b. implications of current research findings for clinical practice with individuals with ASD
- 11.c. how to critically evaluate the research literature in ASD

### Skills required:

- 11.1. design and implementation of single-subject experiments to address questions related to ASD and interventions

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