THE NATIONAL PROFESSIONAL DEVELOPMENT CENTER ON
AUTISM SPECTRUM DISORDERS

Evidence-Based Practices for Children and Youth with ASD

Practice	Description
Computer-aided Instruction	Computer-aided instruction includes the use of computers to teach academic skills and to promote communication and language development and skills. It includes modeling appropriate skills and behaviors and providing competent tutors.
Differential Reinforcement of Other Behaviors	Differential reinforcement involves using praise and/or other rewards for desired behaviors and appropriate communication, while ignoring inappropriate behaviors. Reinforcement can be provided: (a) when the learner is not engaging in the interfering behavior, (b) when the learner is engaging in a specific desired behavior other than the inappropriate behavior, or (c) when the learner is engaging in a behavior that is physically impossible to do while exhibiting the inappropriate behavior.
Discrete Trial Training	Discrete trial training (DTT) is a one-to-one instructional approach used to teach appropriate behavior and communication skills in a planned, controlled, and systematic manner. DTT is appropriate for skills that can be taught in small repeated steps. Each trial or teaching opportunity has a definite beginning and end. The use of antecedents and consequences is carefully planned and implemented. Positive praise and/or tangible rewards are used to reinforce desired skills or behaviors. Data collection provides teachers/practitioners with information about beginning skill level, progress and challenges, skill acquisition and maintenance, and generalization of learned skills or behaviors.
Extinction	Extinction is used to reduce or eliminate unwanted behavior. Extinction involves withdrawing or terminating the positive reinforcer that maintains an interfering behavior. This withdrawal results in the stopping or extinction of behavior. The interfering behavior is likely to increase in frequency and intensity (extinction burst) before it is extinguished as learners try to elicit the reinforcers previously provided. Extinction is often used with differential reinforcement to increase appropriate behaviors and communication skills while discouraging the use of inappropriate behaviors.
Functional Behavioral Assessment	Functional Behavioral Assessment (FBA) is a systematic way of determining the underlying communicative function or purpose of a behavior, so that an effective intervention plan can be developed. FBA consists of describing the interfering or problem behavior, identifying antecedent or consequent events that control the behavior, developing a hypothesis of the function of the behavior, and testing the hypothesis. Data collection is an important part of the FBA process. Often, teachers/practitioners use functional communication training (FCT), differential reinforcement, response interruption/redirection, extinction, and stimulus control/environmental modification to address interfering behaviors in learners with ASD.

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Functional Communication Training	Functional communication training is a systematic practice to replace inappropriate behavior or subtle communicative acts with more appropriate and effective communicative behaviors or skills. First the interfering behavior is analyzed to determine its communicative function through functional behavioral assessment, and then a replacement behavior is taught to take its place.
Naturalistic Intervention	Naturalistic intervention is a collection of practices including environmental arrangement, interaction techniques, and behavioral strategies that are used to promote appropriate communication and social skills. These practices encourage specific target behaviors based on learner's interests and build more elaborate learner behaviors that are naturally reinforcing and appropriate to the interaction.
Parent-implemented Intervention	With parent-implemented intervention, parents are taught to provide individualized intervention to their child to improve/increase a wide variety of skills and/or to reduce interfering behaviors. Parents learn to implement practices in their home and/or community through a structured parent training program.
Peer-mediated Instruction and Intervention	Peer-mediated instructional approaches are used to teach typically developing peers ways to interact with and help children and youth with ASD acquire new behavior, communication, and social skills by increasing social opportunities within natural environments. PMII is also a useful strategy for promoting positive transitions across settings. Peers are carefully and systematically taught strategies for engaging children and youth with ASD in positive and extended social interactions in both teacher-directed and learner-initiated activities.
Picture Exchange Communication System (PECS)	The Picture Exchange Communication System (PECS) was developed at the Delaware Autistic Program (DAP) to teach young children to communicate in a social context (Bondy & Frost, 1994; Frost & Bondy, 2002). PECS has also been used to decrease inappropriate behaviors. Using PECS, learners are taught to give a picture of a desired item to a communicative partner in exchange for the item. There are six phases of PECS instruction, with each phase building on the previous phase.
Pivotal Response Training	Pivotal Response Training (PRT) is a method of systematically applying the scientific principles of applied behavior analysis. PRT builds on learner initiative and interests and is particularly effective for developing communication, language, play, and social behaviors. This practice promotes more efficient and effective intervention by enhancing four pivotal learning variables that provide the foundational skills upon which other skills are based: motivation, responding to multiple cues, self-management, and self-initiations.

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Prompting	Prompting procedures include any help given to learners to assist them in using a specific skill. Prompts are generally given by an adult or peer before or as a learner attempts to use a skill. Prompting procedures that have been shown to be effective with learners with ASD include least-to-most-prompts, simultaneous prompting, and graduated guidance and can include verbal, gestural, and model prompts.
Reinforcement	Reinforcement describes an association between learner behavior and a consequence that follows the behavior. If a consequence increases the probability that a behavior will occur again, it can be said to be a reinforcer. Positive reinforcement involves offering incentives to reward behavior. An example of positive reinforcement is a token economy. Negative reinforcement involves removing an aversive stimulus to reward behavior so that learners will use the targeted skill or will not engage in interfering behaviors.
Response Interruption/ Redirection	Response interruption/redirection (RIR) is used to decrease interfering behaviors, predominantly those that are repetitive, stereotypical, and/or self-injurious. RIR is particularly useful with persistent interfering behaviors that occur in the absence of other people, in a number of different settings, and during a variety of tasks. These behaviors often are not maintained by attention or escape. Instead, they are more likely maintained by sensory reinforcement and are often resistant to intervention attempts. RIR is particularly effective with sensory-maintained behaviors because teachers/practitioners interrupt learners from engaging in interfering behaviors and redirect them to more appropriate, alternative behaviors. RIR has also been shown to be effective in teaching desired academic skills/responses.
Self-management	Self-management interventions help learners with ASD learn to independently regulate their own behaviors and act appropriately in a variety of home, school, and community-based situations. With these interventions, learners with ASD are taught to discriminate between appropriate and inappropriate behaviors, accurately monitor and record their own behaviors, and reward themselves for behaving appropriately. As learners with ASD become more fluent with the self-management system, some of the implementation responsibilities shift from teachers, families, and other practitioners to the learners themselves.
Social narratives	Social narratives are interventions that describe social situations in some detail by highlighting relevant cues and offering examples of appropriate responding. They help learners adjust to changes in routine and adapt their behaviors based on the social and physical cues of a situation, or are used to teach specific social skills, communication skills, or behaviors. Social narratives are individualized according to learner needs and typically are quite short, perhaps including pictures or other visual aides. Sentence types that are often used when constructing social narratives include descriptive, directive, perspective, affirmative, control, and cooperative.

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Social skills training groups	Social skills groups are used to teach individuals with autism spectrum disorders (ASD) ways to appropriately interact with typically developing peers. Social skills groups typically involve small groups of two to eight individuals with disabilities and a teacher or adult facilitator. Most social skill group meetings include instruction, role-playing or practice, and feedback to help learners with ASD acquire and practice communication, play, or social skills to promote positive interactions with peers.
Stimulus Control	Stimulus control is an antecedent-based intervention in which environmental modifications are used to change the conditions in the setting that prompt a learner with ASD to engage in an interfering behavior. The goal of stimulus control is to identify factors that are reinforcing the interfering behavior and then modify the environment or activity so that the factor no longer elicits the interfering behavior. Common stimulus control procedures include using highly preferred activities/items to increase interest level, changing the schedule/routine, implementing pre-activity interventions, offering choices, altering the manner in which instruction is provided, and enriching the environment so that learners with ASD have access to sensory stimuli that serve the same function as the interfering behavior. Stimulus control has been demonstrated to be effective in improving academic, behavior, and play skills. Stimulus control strategies often are used in conjunction with other evidence-based practices such as functional communication training, extinction, and reinforcement.
Structured work systems and Activity Organization	Structured work systems are an element of structured teaching that emphasizes visual supports that are used to increase and maximize independent functioning and reduce the frequent need for teacher correction and reprimand. An individual work system is defined as a visually organized space where learners independently practice skills that have been previously mastered under the direct supervision of an adult and are frequently used for academic tasks, as well as vocational tasks. A work system visually communicates at least four pieces of information to learners: (1) the tasks they are supposed to do, (2) how much work there is to be completed, (3) how learners know they are finished, and (4) what to do when finished.
Task Analysis	Task analysis is the process of breaking a skill into smaller, more manageable steps in order to teach the skill. Other practices, such as reinforcement, video modeling, or time delay, can be used to facilitate acquisition of the smaller steps. As smaller steps are mastered, learners become more independent in performing more complex, including physical or routine (e.g., self-care, work tasks) tasks, as well as academic, behavior, communication, play, social and transition related skills.

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Time Delay	Time delay focuses on fading the use of prompts during instructional activities and has been demonstrated to be effective with skills in the academic, communication, play and social domains. A brief delay is provided between the initial instruction and any additional instructions or prompts. With progressive time delay, teachers and other practitioners gradually increase the waiting time between an instruction and any prompts that might be used to elicit a response. With constant time delay, a fixed amount of time is always used between the instruction and the prompt as learners become more proficient at using the new skill.
Video Modeling	Video modeling uses video recording and display equipment to provide a visual model of the targeted behavior or skill (typically in the behavior, communication, play or social domains). Types of video modeling include basic video modeling, video self-modeling, point-of-view video modeling, and video prompting. Basic video modeling involves recording someone other than the learner engaging in the target behavior or skill. The video is then viewed by the learner at a later time. Video self-modeling is used to record the learner displaying the target skill or behavior and is reviewed later. Point-of-view video modeling is when the target behavior or skill is recorded from the perspective of the learner. Video prompting involves breaking the behavior skill into steps and recording each step with incorporated pauses during which the learner may attempt the step before viewing subsequent steps. Video prompting may be done with either the learner or someone else acting as a model.
Visual supports	Visual supports are any tool presented visually that supports an individual as he or she moves through the day and are applicable to many skill domains. Visual supports might include, but are not limited to, pictures, written words, objects within the environment, arrangement of the environment or visual boundaries, schedules, maps, labels, organization systems, timelines, and scripts. They are used across settings to support individuals with ASD.
VOCA/Speech generating devices	Speech generating devices (SGD) are electronic devices that are portable in nature and can produce either synthetic or digital speech for the user. SGD may be used with graphic symbols, as well as with alphabet keys. A variety of skills can be targeted for intervention, including initiation, expressive language (verbal), joint attention/gestures (non-verbal), and pragmatics (conversation skills). Reading and math skills can also be addressed using SGD.