COMPREHENSIVE EVIDENCE-BASED PROGRAMS
for Students with Autism

**Comprehensive Programs**
Address the Learning Characteristics of Students with Autism

- Impairments in communication
- Impairments in social interaction
- Restricted, repetitive patterns of behavior and/or interests
- Unusual responses to sensory experiences
- Difficulties with change of routine, schedule

U. S. Federal Education Definition: Section 300.8


**Consider Critical Life-Long Goals**
Oregon Regional Programs Autism Working Group

- To tolerate people and value interactions
- To communicate intentionally and effectively
- To organize information and learn meanings/purposes
- To tolerate change and accept new experiences
- To be independent of constant verbal directions
- To self-monitor and manage stress

**Children With Autism Are Unique**

Children with autism, like all children:
- Are unique in their strengths, abilities and preferences
- Learn at different rates.
- Some children with ASD need a lot of help in their daily lives; others need less

Children with autism often learn in different ways from children who are neurotypical.

- Reviewed and analyzed hundreds of international research articles

Evidence-Based Practices

- Pattern of findings suggest that treatments from the behavioral literature have the strongest research support at this time.
- Identified 14 established treatments.
- Comprehensive behavioral packages have the most evidence.

www.nationalautismcenter.org

National Standards Project
14 Established Treatments
- Comprehensive Treatment Packages
- ABA or Applied Behavior Analysis (Discrete Trial Training)
- The Links Curriculum is based on the principles of ABA
- Pivotal Response Training (PRT)
- Behavioral Interventions
- Schedules
- Self-Management (Promoting Independence)
- Language Training
- Parent Training
- Cognitive Behavioral Intervention
- Peer Training Package
- Modeling (Imitation of Target Behavior)
- Naturalistic Teaching Strategies (Child-directed to teach functional skills)
- Story-Based Intervention Package
- Social Skills Package
- Scripting

National Professional Development Center Report 2014

- Research has shown that children can learn when provided intensive research-based interventions.

Research Guides Practice
National Professional Development Center on ASD and National Standards Report: Comparison

What is Applied Behavior Analysis (ABA)?
ABA is an umbrella term for methods that change behavior in systematic and measurable ways.
- Teach new skills
- Reduce challenging behaviors
- Maintain skills across a variety of domains
COMPREHENSIVE EVIDENCE-BASED PROGRAMS
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National Standards Report
Established Treatments

- **Comprehensive Behavioral Treatment**
  - 0-9 age range
  - Examples: Discrete Trial Training, Incidental Teaching, Other ABA Interventions

- **Applied Behavior Analysis**
  - Early Intensive Behavioral Intervention

- **Established Treatments**
  - Focus on pivotal behaviors that impact a wide range of functioning
  - Self-management
  - Motivations
  - Self-initiations
  - Responsivity to multiple cues

- **Language Training**
  - Applied Behavior Analysis
  - Behavioral Psychology
  - Positive Behavior Supports
  - Examples: Discrete Trial Training, Verbal Language Training

- **Self-Management**
  - Promotes independence
  - Teaches students with ASD to regulate their own behavior
  - Self-reinforce
  - Examples: Task Analysis, Checklists, Wrist counters, Visual Prompts

- **Pivotal Response Training**
  - 3-9 age range
  - Focus on pivotal behaviors that impact a wide range of functioning
  - Self-management
  - Motivations
  - Self-initiations
  - Responsivity to multiple cues

- **Evidence-Based Strategies**
  - Video Examples and Progress Video
  - Pivotal Response Training
  - Discrete Trial Training
  - Self-Management
  - Progress: Two Years Later

COMPREHENSIVE EVIDENCE-BASED PROGRAMS for Students with Autism

National Standards Report
Established Treatments

Scripting
- 3-14 age range
- Language Training: Provides a script for students to follow during situations
- Examples: Verbal, written, visual scripts

National Standards Report
Established Treatments

Schedules
- 3-9 age range
- Presentation of a task list that communicates a series of activities
- Examples: Written words, pictures/photos, work stations, reinforcement strategies

National Standards Report
Established Treatments

Peer Training Packages
- 3-14 age range
- Teaching students without disabilities strategies for facilitating play and social interactions
- Examples: Peer networks, circle of friends, peer-mediated social interactions

National Standards Report
Established Treatments

Modeling
- 3-18 age range
- Demonstration of target behavior that results in an imitation of the target behavior
- Live modeling, video modeling

National Standards Report
Established Treatments

Social Skills
- 13-18 age range
- Socially appropriate behavior with others, builds foundational skills for learning
- Examples: Sharing, taking turns, social rules

COMPREHENSIVE EVIDENCE-BASED PROGRAMS
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Peer Tutoring, Social Skills and Modeling

National Standards Report
Established Treatments

- **Story-based intervention package**
  - 3-14 age range
  - Written description of the situation in which specific behaviors are expected
  - Answer the "who", "what", "when", "where" and "why"

- **Naturalistic Teaching Strategies**
  - Child directed interactions within natural environment
  - Examples: Inclusion, Teaching Mileu teaching, Embedded teaching

- **Cognitive Behavioral Intervention**
  - 6-14 age range
  - Focuses on interpersonal skills and personal responsibility
  - Emotional Regulation
  - Manualized Cognitive Behavioral Programs

National Standards Report
Established Treatments

- **Parent Training Package**
  - 0-18 age range
  - Train parents to implement evidence-based practices
  - Individual training
  - Group training

- **Evidence Base**
  - Cognitive Behavioral Strategies
  - Social Skills Strategies

COMPREHENSIVE EVIDENCE-BASED PROGRAMS
for Students with Autism

Curriculum Content

Intensive Instruction in:
- Receptive Language
- Expressive Language
- Academic Skills
- Social Interaction Skills

- Functional Routines
  - Preschool Routines
  - Snack, circle, centers
  - Transition
  - Elementary School Routines
  - Large group instruction
  - Transition between classes
  - Middle HS Routines
  - School and Community

Curricula – ABA Examples

STAR Program - Links Curriculum - Picture Exchange Communication System - VB Mapp (assessment only)

Research on the STAR Program

  - Students made significant progress in the areas of expressive language, receptive language, social skills, academics, and independence on functional routines.
- Randomized, Controlled Trial of a Comprehensive Program for Young Students with Autism Spectrum Disorder. (Young, Falco and Makato, 2015).
- Training Teachers to Use Evidence-Based Practices for Autism: Examining Procedural Implementation Fidelity. (Fidelity of implementation of the ABA practices used in the STAR Program was found to be adequate following training in a larger urban school district.

For more information, visit www.starautismsupport.com/curriculum/research

Intensity of Instructional Time

1. Research indicates the need for sufficient daily 1:1 instruction to learn new skills
2. ABA principles can be integrated throughout the student’s day
3. Skill instruction should occur within daily routines to ensure generalization of skills learned

Curriculum Components

Assessment
Lesson Plans
Data Collection

Example Outcome Studies Using the STAR Program

*References are at the end of the ppt

Outcome Study (2003)

Measuring Outcomes study (2014)

EXPLORE Study Results 2008-2011

Average Expression Age Equivalence in Months

**Curriculum for Middle and High School Students**

**Independence - Self-management - Social Skills**

- **SCHOOL**
- **COMMUNITY**
- **VOCATIONAL**

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**Example of Evidence-Based Program for Secondary Students: Links Curriculum**

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**Parent Involvement**

- National Autism Center (2009): The values and preferences of parents, care providers, and the individual with ASD should be considered.
- National Research Council (2004): Characteristics of effective interventions include inclusion of a family component, including parent training.
- Manualized Parent Training Programs:
  - Teaching Social Communication to Children with Autism (Ingersoll and Dvortcsak, 2010)
  - Parent Training for Disruptive Behaviors (Blears, Johnson, Handen, Butler, Lacavalier, 2015)

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**Effective Parent Communication**

**Parent Training Information and Supports-STAR Series**

- Session 1: First step: Identifying Strategies that Work
- Session 2: Behavior Principals: Why Does My Kid Do That?
- Session 3: Behavior Principals: Challenging Behavior and Taming the Tantrum
- Session 4: Teaching and Reinforcing Receptive Language Skills
- Session 5: Teaching Kids Appropriate Communication and Language Skills
- Session 6: Same Stuff, Different Day: Teaching Skills Through Functional Routines
- Session 7: Visualize It: Using Supports Effectively
- Session 8: Map It Out: Writing Effective Behavior Support Plans
- Session 9: The Fun Part: Facilitating Play and Social Skills
- Session 10: Overcoming Mealtime Challenges
- Session 11: The Small Stuff: Mastering Fine Motor Skills
- Session 12: Bathroom Break: Tools for Toilet Training
References


Note: The Outcome Study article and full report is available on the OrPATs.org website.
STAR Program Research Validation

**The Autism Outcome Study:** Enrolled over 122 children in public pre-school and school-age programs over a five year period. These programs included rural, suburban and urban schools. The project staff provided training in the STAR Program and a separate team of researchers conducted assessments of the students to monitor their progress. The students made significant progress in all areas of instruction. In particular, students made significant progress in the areas of expressive language, receptive language, social interaction skills, academics and independence on functional routines. (Arick, Young, Falco, Loos, Krug, Gense, & Johnson, 2003; Arick, Young, Falco, Loos, Krug, Gense and Johnson, 2004). Ninety-one percent of the students made progress in the expressive language area. The project has continued to evaluate student progress and has found consistent results as those obtained in the initial Autism Outcome Study (Arick, Willis, Nakada, 2011).

**The Autism Instructional Methods Study (AIMS):** The AIMS project was a comprehensive study of effective educational practices in a large urban school district. The STAR Program, and training in the curriculum, composed the core elements for a three-year study involving thirty-four K-3 classrooms for students with autism. This study was a randomized control trial funded by the National Institute of Health (NIH) and the Institute of Education Sciences (IES). The study was conducted by the University of Pennsylvania’s Center for Autism Research and the Children’s Hospital of Philadelphia. Students in the STAR Program showed significantly greater gains than the experimental group when program fidelity was obtained (Mandell, 2010, 2011).

**Measuring Outcome in Early Intervention Program for Toddlers with Autism Spectrum Disorder:** Results of this study found that students who were provided early intervention using the STAR Program made significant progress over a two year period of time. The study also found that the STAR Student Learning Profile correlated highly with other standardized measures and provided additional useful information about student skills learned (Bacon, Dufek, Schreibman, Stahmer, Pierce and Courchesne, 2014).

*The STAR Program is research-validated by multiple independent randomized control trials (including IES and NIH Grants).*

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Links Curriculum Research Validation

A major field test was conducted in the state of Oregon during 1999-2000 to determine the reliability and validity of the measurement system that is utilized in the Links Curriculum. Thirty school districts, 133 instructors, and 478 students with moderate to severe disabilities participated in the study (Arick, Nave, & Hoffman, 2000). Extensive reliability and validity studies were conducted. Test-retest and inter-observer reliability were found to be high. Assessment validity correlated with the Vineland Adaptive Behavior Scales. It was found to measure independence levels in students with significant disabilities including students with autism. Further information can be found in the implementation guide.

A study was implemented by a group of instructors residing in several areas of the U.S. A pre-post single subject design was utilized. At the conclusion of the study, an analysis of the pre-post results was conducted. Data from the study indicated that 90% of the students improved across all routines selected. This indicates that 90% of the students made progress on their selected routines. Further information on this study can be found in the implementation guide.
### Evidence-based Practices as Suggested by the National Professional Development Center and National Standard Project

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<thead>
<tr>
<th>Practice</th>
<th>STAR</th>
<th>LINKS</th>
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<td>Discrete Trial Training</td>
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### References
