

CONTINUING EDUCATION for Speech-Language Pathologists

SYSTEMATIC LANGUAGE INSTRUCTION FOR EARLY LEARNERS WITH AUTISM

PDH Academy Course #1903 | 2 CE HOURS



PDH Academy is approved by the Continuing Education Board of the American Speech-Language-Hearing Association (ASHA) to provide continuing education activities in speech-language pathology and audiology. **See course information for number of ASHA CEUs, instructional level and content area.** ASHA CE Provider approval does not imply endorsement of course content, specific products or clinical procedures.

This course is offered for .2 ASHA CEUs (Introductory level, Professional area).

Course Abstract

This Introductory level course presents evidence-based strategies that allow students with autism spectrum disorder (ASD), as well as other students who are limited verbally, to become more effective communicators. It opens with a review of the communication characteristics associated with autism, then introduces a six-step model for a systematic approach to intervention, incorporating specific examples and case studies spanning a variety of age groups from preschool through high school. Throughout, “Therapy Snippets” provide examples of this model in action.

NOTE: Links provided within the course material are for informational purposes only. No endorsement of processes or products is intended or implied.

Learning Objectives

By the end of this course, learners will be able to:

- Recognize characteristics associated with autism
- Differentiate between terms used in the field of applied behavior analysis
- Recall aspects of the six-step model
- Identify elements of the six-step model as applied to specific learners

Timed Topic Outline

- I. Introduction (15 minutes)
Vocabulary Refresher
- II. Collaboration (5 minutes)
- III. Assessment (10 minutes)
Standardized Measures, Non-standardized Measures, Naturalistic Observation
- IV. Goal Setting (5 minutes)
- V. Embedded Communication Intervention (5 minutes)
- VI. Robust Data Collection (10 minutes)
Data Binder Review
- VII. Specific Progress Reporting (5 minutes)
- VIII. Examples: Maverick and Hank (30 minutes)
- IX. Case Studies (20 minutes)
- X. Conclusion, References, and Exam (15 minutes)

Delivery Method

Correspondence/internet self-study with interactivity, including a provider-graded final exam. *To earn continuing education credit for this course, you must achieve a passing score of 80% on the final exam.*

Accessibility and/or Special Needs Concerns?

Contact customer service by phone at (888)564-9098 or email at support@pdhacademy.com.

Course Author Bio and Disclosure

Rosemarie Griffin, MA, CCC-SLP, BCBA, COBA, is a licensed speech-language pathologist, board certified behavior analyst, and product developer. She completed her Master's degree at Kent State University, her education specialist degree in school administration at Cleveland State University, and coursework leading to licensure as a board certified behavior analyst at the University of North Texas. Since 2003, Mrs. Griffin has worked as a speech-language pathologist and has held positions at the Cleveland Clinic Lerner School and at the STARS program (Specialized Teaching for students with Autism and Resources Services) with the Geauga County Educational Service Center. A move to Texas allowed Mrs. Griffin to become an autism facilitator and support specialist for Leander Independent School District in Austin, Texas. Currently she splits her time between KidsLink and a local public school system.

Mrs. Griffin is a member of the adjunct faculty at Kent State University in Kent, Ohio. She is fully licensed by both the Ohio Board of Speech Pathology and Audiology and the Ohio Department of Education, and she is a certified member of the American Speech-Language-Hearing Association (ASHA). She is also fully licensed by the Behavior Analyst Certification Board and by the Ohio Board of Psychology. Mrs. Griffin is passionate about lecturing on effective communication services for students with autism and has done so for many organizations, including the Ohio Speech-Language-Hearing Association, Milestones, and SpeechPathology.com. She is also the creator of the Action Builder Cards for systematic language instruction.

The material found in *Systematic Language Instruction for Early Learners with Autism* is © ABA Speech LLC, <http://www.abaspeech.org/>. It is licensed to PDH Academy for the purposes of continuing education.

DISCLOSURES: Financial – Rosemarie Griffin's work is available for purchase at SpeechPathology.com and ABA Speech LLC, and she received a stipend as the author of this course. Nonfinancial – No relevant nonfinancial relationship exists.

Introduction

Per the section of the American Speech-Language-Hearing Association (ASHA)'s Practice Portal discussing autism (n.d.), "autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by deficits in social communication and social interaction and the presence of restricted, repetitive behaviors. Social communication deficits include impairments in aspects of joint attention and social reciprocity, as well as challenges in the use of verbal and nonverbal communicative behaviors for social interaction. Restricted, repetitive behaviors, interests, or activities are manifested by stereotyped, repetitive speech, motor movement, or use of objects; inflexible adherence to routines; restricted interests; and hyper- and/or hypo-sensitivity to sensory input." This definition is consistent with the diagnostic criteria for ASD as described in the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5; American Psychiatric Association, 2013).

The U.S. Centers for Disease Control and Prevention (CDC, 2018) report finds the prevalence of ASD is at one in 59 children, and the range of communication impairment in children with autism varies widely. Whatever the level of impairment, autism will most likely have a significant impact on a learner's ability to communicate with the world.

This course focuses on the child who has limited or emerging verbal skills. This child is starting to, and/or is growing confident in, using the skills to communicate their wants and needs across the day. They are now working on acquiring the ability to use language for a variety of reasons (to label, to fill in the blank for familiar phrases, to imitate new words, to follow directions, etc.).

We will consider strategies to help this child strengthen their overall communication skills, using a six-step model that includes collaboration, assessment, goal setting, embedded communication intervention, robust data collection (including data binder review), and specific progress reporting. Whether you are a preschool-based therapist or working with students at the high school level, implementation of this model can help you provide functional therapy for students who are limited verbally.

Vocabulary Refresher

Within this course, we will discuss terms and strategies that may be new or unfamiliar to you. The bulk of these terms come from the field of applied behavior analysis.

Applied Behavior Analysis: The science in which tactics derived from the principles of behavior are applied to improve socially significant behavior and experimentation is used to identify the variables responsible for the improvement in behavior (Cooper, Heron, Heward 2007).

Data: The results of measurement, usually in quantifiable

form; in applied behavior analysis, data refers to the measure of some quantifiable dimension of a behavior (Cooper, Heron, Heward, 2007).

Gideon is able to play a turn taking game with a peer for a duration of 10 minutes with an average of 2 gestural prompts.

Sally is able to answer the personal safety question "What is your name?" with 80% accuracy.

Discrete Trial Teaching (DTT): DTT refers to a systematic form of intervention which is commonly included with other treatment approaches/procedures to teach individuals diagnosed with ASD a variety of skills. Each discrete trial consists of three primary components: (a) a discriminative stimulus (e.g., an instruction from the therapist); (b) a response by the learner; and (c) a consequence (i.e., reinforcement or punishment) facilitated by the therapist based upon the learner's response. An optional fourth step is a therapist providing a prompt, prior to the learner's response, which increases the likelihood of the student responding correctly (Leaf et al 2016).

Joe is working on labeling giraffe. (a) The discriminative stimulus is instruction from the therapist, who is holding up a picture of a giraffe and asking "What is it?" (b) The response from the learner is the label "giraffe." (c) The consequence is reinforcement from the therapist in the form of verbal praise: "That is a giraffe – great job!"

Generalization: The occurrence of a target behavior in a non-training situation after training (Barbera & Rasmussen, 2007).

A student learns to label "juice" in the classroom, and subsequently labels it while out to eat with his parents at a restaurant.

A student learns to request "playing blocks" with a speech therapist, and later requests "playing blocks" at home with her parents.

Natural Environment Teaching: The child's current interest or motivation controls the teaching activity. Teaching targets are weaved into play and other enjoyable activities (Barbera & Rasmussen, 2007).

A student has a goal to label common farm animals: cow, duck, and pig. The speech therapist addresses this goal during a play based activity, working on the targets and taking data while playing with a farm toy and farm animals. This play-based activity would be referred to as targeting these skills within a natural environment teaching framework.

Pairing: The process of using valuable reinforcers to condition people, materials, and environments to become reinforcing (Barbera & Rasmussen 2007).

When working with a student it is important to take time to pair. This will be a very individualized process for each student: the therapist finds out what the student really enjoys or what they are reinforced by, and uses these items to condition people, materials, and environments to become reinforcing. For example, if a student loves bubbles, we will want to make sure that bubbles are available across materials, environments, and people.

Task Analysis: Task analysis is a commonly-used approach to extract detailed information about a task. Performing a task analysis and obtaining a good understanding of the task(s) a person or team needs to accomplish is important for designing or redesigning the system, the proper environment, technology, training, and allocating functions to human and /or machine to support safe and efficient completion of the task (e.g., Annett, 2004).

A task analysis can be used to teach many different skills. For example, the grid below breaks down the process of checking out a book using a task analysis.

Date	Skill	Data
	Walk to the library	Y N
	Look for a book	Y N
	Pick 1-2 books	Y N
	Walk to the self scanner	Y N
	Get out library card	Y N
	Scan card	Y N
	Put in password	Y N
	Scan book(s)	Y N
	Get receipt	Y N

Verbal Behavior: Behavior whose reinforcement is mediated by a listener; includes both vocal-verbal behavior (e.g. saying "water please" to get water) and nonvocal-verbal behavior (pointing to a glass of water to get water). Encompasses the subject matter usually treated as language and topics such as thinking, grammar, composition, and understanding (Cooper, Heron, Heward 2007).

Verbal Operants: The conceptual basis for many effective language-training programs is B. F. Skinner's 1957 analysis of verbal behavior behavior. Skinner described several elementary verbal operants including mands, tacts, intraverbals, echoics, and listener behavior (Kelley et al 2007).

Manding: A mand is a request. We start work on this operant to help increase a learner's spontaneous communication, encouraging them to ask for things that they want.

ANTECEDENT	BEHAVIOR	CONSEQUENCE
Motivation	Verbal response	Specific to the learner's motivation

After seeing a bear Saying "bear"
 Wanting to play farm Saying "play farm"
 Seeing a food you like Saying "eat"
 Wanting a hula hoop Saying "hoop"

Tacting: Involves labeling a picture, object, or action. Students may work on tacting to increase their expressive vocabulary.

ANTECEDENT	BEHAVIOR	CONSEQUENCE
Non verbal stimulus (object, picture)	Verbal response	Social reinforcement

Seeing a soccer ball Saying "soccer ball"
 Seeing Subway Saying "Subway"
 Seeing a cat Saying "cat"
 Hearing a train Saying "train"

Intraverbal: Filling in the blank and answering questions are both examples of intraverbals. Intraverbals are the basis for reciprocal conversation. They are the building blocks for engaging verbally with others.

ANTECEDENT	BEHAVIOR	CONSEQUENCE
Someone's verbal behavior	Verbal behavior (does not match other learner)	Social

Hearing "A, B, C, _" Saying "D"
 Hearing "Twinkle, twinkle, little _"
 "What is your mom's name?" "Lainey"
 "What drink do you like?" "Juice"
 "Favorite sport?" "Basketball"

Echoic: Repeating what is heard, usually immediately. Work on echoics can help a learner say many different functional words. Echoics can also be worked on to systematically address saying different sounds and syllable shapes.

Collaboration

ASHA encourages interprofessional and collaborative practice, and the Interprofessional Education Collaborative (2016) lists four main areas of competency for this type of practice:

1. Values/Ethics: work with individuals of other professions to maintain a positive working relationship
2. Roles/Responsibilities: use your own area of expertise as well as the other team members' to appropriately assess and treat student needs
3. Interprofessional Communication: communicate with the special education team and family in a responsive manner that supports a team approach
4. Teams/Teamwork: work together to plan and implement programs that are effective, efficient, and helpful for your student

These four areas are pillars of collaboration that can help our students increase their overall communication skills in a more comprehensive manner. They sound wonderful on paper, but can be harder to implement in the real world. Below are some real life strategies that I implement to build rapport with team members and support collaborative practices:

Is there someone new to the team? Make sure to introduce yourself and your role. It sounds simple, but it's surprising how often this step is missed!

Is there an outside consultant helping out with a portion of the child's intervention? Often students with more complex needs may be working with outside consultants or private therapists. Touch base with this person and review any recommendations that they may have. Being able to collaborate with these professionals is key for continuity of services and the generalization of skills.

Does your student work with a one on one paraprofessional? If so, see if that paraprofessional can stay for a portion of your speech therapy session, so you can model how to work on communication-based programming. There are many teachable moments that can be captured across a student's school day, and the modeling will help them continue to work on communication-based programming programming when you are not present.

Are you keeping an open line of communication with your student's parents? Parent communication is another important aspect of collaboration: without adequate information, parents can quickly become upset or worried that all is not well with the intervention programming. Each school and each system will have their own set of expectations related to this point, and following the protocol to the best of your ability when communicating with parents is essential.

ANTECEDENT	BEHAVIOR	CONSEQUENCE
Someone's verbal behavior	Verbal behavior (does match other learner)	Social

"Say hello"	"Hello"
"Say mine"	"Mine"
"Say shhhh"	"Shhhhh"
"Say move"	"Move"

Listener Behavior: Following instructions or complying with a request – walking to the nurse's office when given the direction "Please take this to the nurse's office," for example. We work on this skill set to increase overall receptive language skills.

ANTECEDENT	BEHAVIOR	CONSEQUENCE
Someone's verbal behavior	Non-verbal compliance	Social

"Please get the paper towels."	Gets the paper towels
"Grab the pencil."	Grabs a pencil
"Go to the office."	Goes to the office
"Circle the T."	Circles the T
"Pick a game."	Picks a game

Putting it all together: JUICE

Mand – wants juice and says "drink juice"

Tact – sees juice and says "juice"

Intraverbal – answers the question "What is your favorite drink?" with the word "juice"

Echoic – repeats "juice" upon hearing the word "juice"

Listener Behavior – follows the direction "get the juice"

Video Modeling: Video modeling involves the learner viewing videos of a model demonstrating a target skill. According to the National Professional Development Center on Autism Spectrum Disorders (2011), video modeling is an evidence-based intervention for individuals with ASD in elementary through middle school.

Using a video model can be a powerful teaching tool for students: before they begin a targeted task, they would first watch a video of the task being completed video. For example, a student about to practice walking to the office with a calm body to do their mail job would view a video of another student doing so.

Is there time in all of your schedules to meet or plan with other members of the team? For many this is not a possibility. I have gone high tech this past year: instead of meeting face-to-face about student goals or how to implement specific programming, I make a video with my school-issued iPad. I then upload this video to our district Google drive and share it with the professionals on the student's team, parents included. When face-to-face meetings are not an option, this is an effective strategy to discuss specific student programming.

Are all providers aware of the student's communication goals? Develop a daily data sheet to use for your student's communication programming, and share it among all team members. This sheet is essential to student growth and progress: it gives all providers information about the student's goals across curricular areas, helping them to feel more comfortable supporting these goals throughout the school day. (We will discuss the daily data sheet in more depth later in the course.)

Assessment

The "Autism" section of the ASHA Practice Portal notes that a speech language pathologist typically will assess the following areas for a learner with autism or more complex needs: receptive language, expressive language, literacy skills, social communication, conversational skills, and speech prosody (ASHA Practice Portal 2018).

Assessment for students with autism and other complex needs can be challenging. Tests (both standardized and non-standardized) may not capture the skills we need to assess, while observations can be difficult to schedule. Ultimately, including all of them – standardized measures, non-standardized measures, and naturalistic observations – will give us a more complete picture of each student's communication skills, and help the team develop functional, communication-based goals.

Standardized Measures

Standardized measures are empirically-developed evaluation tools with established reliability and validity (ASHA Practice Portal 2018). The American Educational Research Association (AERA 1999) cites the defining characteristics of a standardized test to be (a) consistency in test materials, (b) use of specific administration procedures, and (c) use of specific and consistent scoring rules. In other words, a standardized test is administered and scored in an identical manner regardless of who is taking it; this allows for a comparison among the children who have taken the test.

Standardized measures can be a good tool to help us learn more about a student's speech and language skills. However, the unique behavior, motivation, and attentional problems found in many children with autism

may interfere with the demands of the formal testing situation required for standardized tests (Condouris 2003). If your student is able to engage in this type of testing, some of the common standardized speech and language measures that may be incorporated into your assessment include:

Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4)

A measure of receptive vocabulary of Standard American English, by Lloyd M. Dunn, PhD, and Douglas M. Dunn, PhD. The Fifth Edition, by Douglas M. Dunn, PhD, is due in late 2018 (Pearson 2018). This is a good measure to gain valuable information about a student's receptive vocabulary skills – information that can be used to plan future intervention targets.

Expressive One-Word Picture Vocabulary Test, Fourth Edition (EOWPVT-4)

Assesses a child's expressive vocabulary skills, by Nancy A. Martin, PhD, and Rick Brownell, MA. Developing the ability to label a variety of items is an important skill for our students. This test can give you information about your student's ability to label pictures, which can help gauge your student's ability to label in general.

Clinical Evaluation of Language Fundamentals, Fifth Edition (CELF-5)

A comprehensive battery of tests that provides a streamlined, flexible approach to language assessment, by Elisabeth H. Wiig, PhD, Eleanor Semel, EdD, and Wayne A. Secord, PhD (Pearson 2018). This comparatively extensive evaluation gives detailed information about students' overall receptive and expressive skills.

Preschool Language Scale, Fifth Edition (PLS-5)

An interactive, play-based assessment that provides comprehensive information about language skills for children at high risk for moderate-to-severe language delays, by Irla Lee Zimmerman, PhD, Violette G. Steiner, BS, and Roberta Evatt Pond, MA (Pearson 2018). The PLS-5 is a good tool if you are working with students who are younger in age, as it looks at early developmental language skills.

Non-standardized Measures

Non-standardized measures may also help us get a better snapshot of a student's communication skills, strengths, and weaknesses. Assessments that I have found to be helpful in my practice include:

Communication Matrix

If you are working with a student who is very limited in their language, the Communication Matrix, described as "a free assessment tool to help families and professionals easily understand the communication status, progress, and unique needs of anyone functioning at the early stages of communication or using forms of communication other than speaking or writing," can be a

good starting point. Directed by Dr. Charity Rowland, the Matrix addresses many skills, including but not limited to requesting, greeting, labeling, and commenting, and also poses questions about how the student is currently interacting. Register for a free account at <https://communicationmatrix.org/>.

Verbal Behavior Milestones Assessment and Placement Program (VB-MAPP)

Another really robust and specific measure is the VB-MAPP by Dr. Mark Sundberg, which requires a background in verbal behavior as outlined by Skinner. The assessment addresses skills across three developmental levels (0-18 months, 18-30 months, 30-48 months). It yields information regarding a variety of skills including but not limited to requesting, labeling, receptive language skills, match to sample, play skills, social skills, motor imitation, echoic imitation, fill in the blanks, answering questions, classroom and group skills, reading, writing, and math. This assessment is available in a book format or in an app format from <http://www.avbpress.com/> (pricing varies).

Functional Communication Profile – Revised (FCP-R)

A tool that may be more familiar to those in the field of speech pathology is the functional communication profile. The Functional Communication Profile-Revised, by Larry I. Kleiman, MA, assesses communication effectiveness in people with developmental delays. It evaluates eleven major skill categories of communication and related aspects, including sensory, motor, behavior, attentiveness, receptive language, expressive language, pragmatic/social, speech, voice, oral, and fluency. The profile does not yield standard scores; rather, it is an informal instrument that provides information as to where the individual subject is performing.

Assessment of Functional Living Skills (AFLS)

The AFLS gathers important information on students who are in middle school, high school, or beyond. Created by Dr. James W. Partington, Ph.D., BCBA-D of Partington Behavior Analysts and Michael M. Mueller, Ph.D., BCBA-D of Stimulus Publications, it is comprised of six individual assessments including Basic Living Skills, Home Skills and Community Participation Skills, School Skills, Independent Living Skills and Vocational Skills. The AFLS gathers information about, but not limited to, basic communication, grooming, clothing, laundry, leisure, housekeeping and chores, community knowledge, social awareness, social skills, technology, core academics, problem solving, basic work skills, office skills, and landscape. As such, it is a comprehensive evaluation of how a student is functioning in areas of everyday life, and can be used by many of the different professionals on a student's team.

Naturalistic Observation

Naturalistic observation of the student in at least one other, less-structured environment can yield important information regarding social communication,

conversational skills, and overall communication and behavior skills. For example, if you are assessing a preschool aged student, consider centers time or morning meeting; if assessing a student who is older, a small group lesson, lunch, or a special class may be a good time. This observation will help to make our assessment more comprehensive and well rounded.

Each student you work with will be different and will have different needs. Using a combination of standardized, non-standardized, and informal observation tools will help the team develop a well designed assessment protocol. When the assessment is complete and shared, it is now time to goal set!

Goal Setting

Goals provide a “road map” for the specific skills and strategies that will be included within a treatment program (Diehm 2017). When possible, setting shared goals allows us as a team to have a more narrow focus for our students. When the team is engaging in collaborative services and a number of goals are shared, we can help our students make progress and help them to generalize their skills to a variety of environments and people. Their being able to use the communication skill outside of the therapy, in the larger school or community environment, is *our* main goal as a therapy provider. Setting goals that are easily understood and measurable is essential.

Sal will label actions (a total of 20) with 90% accuracy, over 2 consecutive sessions.

Julian will use 5 comments within a 10 minute group with no more than 1 prompt, over 2 consecutive sessions.

Take into consideration the following:

- Does the goal include what skill will be captured?
- Does the goal include a quantity for the skill learned? Let's look at this point more closely. When we are working with students with more complex needs, we should often include a quantity: this allows us to demonstrate progress on a larger skill. For example, we might have a goal that says “Alesha will label items (a total of 12) with 90% accuracy, over 2 consecutive sessions.” If Alesha is limited verbally and labeling is a difficult skill for her, this may be a skill she works on for longer than one school year. However, by using a quantity, we can demonstrate that progress has been made, even if we need to set another labeling goal for subsequent school years.
- Does the goal include how you will measure accuracy? Accuracy can include a percentage or a prompt level.
- Does the goal include a time frame for mastery? In other words, does the student need to attain accuracy over a specific number of sessions to meet mastery?

Embedded Communication Intervention

A very important component of this framework is embedded communication intervention. “Embedded” means that instruction on communication targets takes place across the learner’s day and is supported by other professionals on the team. This type of instruction allows the student to have more opportunities to practice the skill. It also helps us plan for the generalization of skills, as the student will be working with a variety of people in a variety of locations.

An aspect of embedded communication intervention that can be overwhelming at first is staff training. All staff who will work with the student on communication programming will need a level of training, so that they feel confident in working on the communication targets. Each staff member will have a different background and will require different levels of support.

When training staff, I follow a behavioral skills training model (Miltenberger 2008). Behavioral skills training is comprised of four steps: instructions, modeling, rehearsal, and feedback. So if, for example, I were training staff on how to work on a labeling target with a student, the process would be as follows:

1. Instructions: The therapist describes labeling, and how to work on this skill.

2. Modeling: The therapist models how to work on this skill.
3. Rehearsal: The staff repeatedly practices working on this skill.
4. Feedback: The therapist praises the staff, and gives feedback as needed to clarify the application of this skill within the educational setting.

In my experience, following the above model will help the staff to fully understand how to work on communication programs over the course of each learner’s day.

Robust Data Collection

Another important aspect of this collaborative service model is a robust data collection system. While all students on your caseload may not require this level of data collection, it is best practice for students receiving more intensive intervention. The following systematic data collection system is typical for learners who have autism or more complex communication disorders:

1. Each student who has intensive programming should have a daily data sheet, which includes all of the student’s goals and targets. It is shared with all members of the team. This cohesive document is an efficient way to capture data on student goals, and enables all team members to work on communication targets more easily.

Data Sheet

www.abaspeech.org

Student name: _____

Staff initials: _____

Date: _____

Labeling common actions	Student will label pictures of common actions: “What is/are he, she, they doing?”	Student will expressively identify the targeted action	+ - + - + - + - + -	+ - + - + - + - + -		
Simple sentence creation	Student will make a sentence	Student will create a simple sentence containing the pronoun “they”	+ - + - + - + - + -	+ - + - + - + - + -		
Intraverbals – fill in the blanks	Student will fill in the blank of a familiar phrase	Student will use a word that makes sense to fill in the blank for the following phrase: “A dog says ____.”	+ - + - + - + - + -	+ - + - + - + - + -		

- Each student should also have a data binder. Included in this binder is a section for each goal on the IEP (individualized education plan).

Each section should have a task sheet stating the overall goal, the current targets, the date they were introduced, and the date they were mastered.

Task Sheet www.abaspeech.org

Student: _____

Skill/Objective: _____

Target	Baseline	Met Criterion

Following each task sheet is a graph: at the end of each day, the data from the daily data sheet is graphed by a member of the educational team. This graph gives us a visual analysis of how a student is doing with a target.

For example, let's say that a student is working on labeling giraffe. The goal is written as follows: "Paul will label a variety of animals (a total of 12) with 100% accuracy, over 2 consecutive sessions."

The student baselined at 0% with labeling giraffe; over the next 10 sessions, giraffe was labeled with just 40%. Graphing this long duration at such a low percentage allows us to more clearly see that we need to analyze why the student is having difficulty, and to modify the intervention as appropriate.

On the flip side, if Paul were working on labeling giraffe and had the following data: baseline 0%, session 1 100%, session 2 100%, the graph would allow us to see clearly that a new labeling target should be addressed.

As always, specific data allows us to make informed decisions about student intervention, and report specific progress as well.

Data Binder Review

As we've discussed, when working with students with autism and other complex communication disorders, taking specific data frequently helps us guide our therapy and the student's overall intervention plan. As part of this process, working time into your schedule to review each student's data binder for goals related to communication is crucial to ensuring that what we are working on for each goal is a functional target for the student. (Personally, I have included this review in my service description in the IEP documents.)

Once a week, I sit down with each student's data binder. I analyze the progress met with each communication goal. If a goal has met mastery as stated in the IEP, I will write in a new goal: for example, if John is working on labeling "eating pizza" and has met the criterion stated in the IEP, I select another target for him to work on. Conversely, if a goal has been challenging for a student, I may write in suggestions for how to work on it differently so that the student learns the skill. After updating a student's data binder, I enter the new targets into the correct spot on the daily data sheet.

Time spent doing a data binder review will benefit the student and all involved in addressing communication goals with the student

Specific Progress Reporting

Reporting specific progress on intervention targets to the other team members is vital to efficient communication: if a student is working with other outside providers (i.e. occupational therapist, physical therapist, board certified behavior analyst), it gives those providers insight into what specific targets are being addressed in therapy. It also allows the team to plan for the generalization of skills from the school environment to the home environment: if tutors or staff are coming into the home to work on programming from the school environment, specific information will be helpful (Note: each environment in which you work may have a predetermined timeline for when to report progress – be certain you know upfront what the expectations are.)

Let's take a look at the difference between specific progress reporting (helpful information) and vague progress reporting (unhelpful information):

Goal #1: When shown a picture, Mallory will label the place (a total of 12) with 90% accuracy, over 2 consecutive sessions.

Vague progress reporting: Mallory has been working hard

on this target. She is able to complete this with 75% accuracy.

Specific progress reporting: Mallory is able to label the following places with 90% accuracy, over 2 consecutive sessions: hospital, Chipotle, dentist

Goal #2: When given a verbal one step direction, Mallory will follow the direction (a total of 10) without prompts, over 2 consecutive sessions.

Vague progress reporting: Mallory is doing well with this skill. She is able to follow 2 directions without prompts.

Specific progress reporting: Mallory is able to follow the directions “come here” and “throw away” without prompts, over 2 consecutive sessions.

Goal #3: When presented with a where question, Mallory will answer it with a logical answer (a total of 12 examples) with 90% accuracy, over 2 consecutive sessions.

Vague progress reporting: Mallory is able to answer where questions with 75% accuracy.

Specific progress reporting: Mallory is able to answer “where do you sleep,” “where do you eat breakfast,” and “where do you buy chips?” with 90% accuracy, over 2 consecutive sessions.

Examples: Maverick and Hank

Now we'll apply the six-step model to two specific learners: Maverick, a 5 year old student in kindergarten, and Hank, a 14 year old student in middle school. Both students have a diagnosis of autism, and both are limited verbally.

The educational teams have worked to build rapport with Hank and Maverick. They have also paired the team members, environments, and materials with reinforcement, so Hank and Maverick work cooperatively in their work areas and classrooms.

We will follow their journey through collaboration, assessment, goal setting, embedded communication intervention, data collection, and progress reporting over a 9 week timeline.

Maverick

Maverick is a 5 year old student in kindergarten. He has a diagnosis of autism. He goes to a public school.

Collaboration: He receives school-based speech therapy, school-based occupational therapy, and special education services for academic subjects, has paraprofessional support 75% of the day, and has parents who are very

involved in his education.

Assessment: The team completed a comprehensive assessment including the VB-MAPP, the EOWPVT-4, and an informal observation of lunch, morning circle, and recess.

Per the assessment, Maverick is able to communicate his wants and needs throughout the day and is able to label his favorite items. He has difficulty with labeling actions, following one step directions, filling in the blank for familiar phrases, engaging in turn taking activities with others, and greeting exchange.

Goal Setting: The speech-language pathologist and special education teacher met to develop goals to target the above skills. The resulting communication-based goals are:

When shown a picture, Maverick will label the action using the present progressive form (a total of 12) with 90% accuracy, over 2 consecutive sessions.

When given a verbal one step direction, Maverick will follow the direction (a total of 10) without prompts, over 2 consecutive sessions.

When presented with a fill in the blank phrase (i.e. ready, set, _) Maverick will fill in the blank with a logical word (a total of 12 examples) with 90% accuracy, over 2 consecutive sessions.

When greeted by a familiar adult, Maverick will respond with a greeting (i.e. Hi, Hello) without prompts over 2 consecutive sessions.

During a 10 minute cooperative learning activity, Maverick will engage in a turn taking activity (i.e. modified Musical Chairs, modified Simon memory) with no more than 1 prompt, over 2 consecutive sessions.

Embedded Communication Instruction: The team members working on these targets include the special education teacher, speech-language pathologist, and a paraprofessional. The teacher and paraprofessional have received instruction from the speech-language pathologist on how to address each goal throughout the course of his day.

The following items describe how Maverick will work on each skill as listed above.

Labeling actions: Maverick is working on labeling actions using the present progressive form of the action. This is a new skill, and very difficult for Maverick. Due to these two factors, the team has decided to work on actions that are very motivating and preferred for him.

The current target is “eating.” The team has prepared three pictures of eating:

1. A boy eating pizza
2. A girl eating broccoli
3. A woman eating fries

(The team chooses to use three pictures to embed work on generalization of the skill of labeling: planning ahead for generalization will eventually help him label a variety of pictures of actions he works on at school, for instance.)

THERAPY SNIPPET

SLP: Presents picture of boy eating pizza and says "What is he doing?"

Maverick: No answer

SLP: Presents picture of boy eating pizza and says "What is he doing? Eating."

SLP: Presents picture of boy eating pizza and says "What is he doing?"

Maverick: "Eating."

SLP: "Great work, he is eating! "

Following one step directions: Maverick is working on following one step directions. This skill is very difficult for Maverick; therefore, we are working on following directions within his classroom setting. Once Maverick has mastered following a variety of one step directions within the classroom setting, we will work on one step directions in other school-based settings.

Maverick is currently working on following the direction, "Pick a book."

THERAPY SNIPPET

The SLP and Maverick are standing by his book bin in the classroom. (Each student has a bin with their name on it which contains books that are of interest to them.)

SLP: "Pick a book."

Maverick: Picks a book in the book bin.

SLP: "Wow, great picking a book."

The SLP and Maverick walk to the group table in the classroom. The SLP reads the book to Maverick.

Filling in the blank for familiar phrases: Maverick is working on filling in the blank for familiar phrases. He really loves wind up toys and all things related to the farm. His current targets are:

1. Ready, set, _
2. The cow says _
3. Baa, baa says the _

THERAPY SNIPPET

Maverick: Sees the bubbles in the therapy room and says "Bubbles."

SLP: "Yes, let's blow some bubbles." The SLP blows some bubbles.

Maverick: Pops the bubbles. He says "Bubbles."

SLP: Holds the bubble wand up and says "Ready, set, _"

Maverick: "Go."

SLP: Blows more bubbles.

Maverick: Pops the bubbles. Walks over to the farm toys and picks one up.

SLP: "Let's play with the farm." She sets up the farm

house and gives it to Maverick. She holds onto the farm animals.

Maverick: "Cow."

SLP: Hands the cow to Maverick.

Maverick: Plays with the cow toy for one minute. After a minute he looks at the SLP and says "Sheep."

SLP: "Here is the sheep." She hands Maverick the sheep.

Maverick: Plays with the toys for another minute.

SLP: "Baa, baa says the _."

Maverick: "Cow."

SLP: "Baa, baa says the cow? Baa, baa says the _."

Maverick: "Sheep."

SLP: "Great job, Maverick! The cow says _."

Maverick: "Moo."

SLP: "That's right, the cow says moo."

Responding to a greeting: Maverick is working on consistently responding to a greeting from an adult, currently the paraprofessional that he works with, the speech-language pathologist, the occupational therapist, and the teacher. His attention is an area of weakness.

THERAPY SNIPPET

The speech language pathologist comes into the session and sits down next to Maverick. (The SLP makes sure to be in close proximity to Maverick when working on this goal – being closer physically makes it easier for him to pay attention to the person greeting him.)

SLP: "Hi."

Maverick: "Hi."

The occupational therapist comes into the classroom and comes into Maverick's work area.

OT: "Hi."

Maverick: "Hi."

Turn taking: Maverick is working on playing a modified game of UNO, a classroom favorite. The game is modified in that one blue, one red, one yellow, and one green card are put face up on the desk, while the other cards are put face down on the desk. He plays this game with one other peer four times a week during a small group activity time.

THERAPY SNIPPET

The speech therapist facilitates this group game in the classroom.

SLP: "Okay, today we are going to play UNO. We will watch a little video about how to play it first." Turns on the video.

Maverick: Watches the video.

SLP: Assembles the cards. "Time to play."

Maverick: Picks a red card. "Red one." Puts it on the red pile.

Friend: Picks a green card. "I got a green one." Puts it on the green pile.

SLP: "You are guys are doing great!"

Maverick: Picks a red card. "Red again." Puts it on the red pile

Friend: Picks a yellow card. "I got a yellow one." Puts it on the yellow pile.

SLP: "Wow, you guys are good at this game!"

Data Collection

Maverick's educational team members take data on a daily data sheet, which includes all of the goals from his IEP. It is uploaded onto a shared drive, so that all team members can see the document and update it as needed. The data is then graphed daily, to provide a visual analysis of Maverick's progress.

Data Binder Review: The speech therapist does a weekly binder review of Maverick's communication programs, and develops new targets as needed. For example:

When shown a picture, Maverick will label the action using the present progressive form (a total of 12) with 90% accuracy, over 2 consecutive sessions.

Maverick is currently working on labeling the action "eating." He has labeled this action with 100% accuracy, over the past 2 consecutive sessions. The SLP recommends working on labeling the action "jumping." The classroom staff or teacher will gather three pictures of the action "jumping" to use for this program.

When given a verbal one step direction, Maverick will follow the direction (a total of 10) without prompts, over 2 consecutive sessions.

He is currently working on following the one step direction "Pick a book." This one step direction has been followed without prompts over 2 consecutive sessions. The SLP know that Maverick has been having trouble following the direction "Throw this away," so that is the next target that is chosen.

When presented with a fill in the blank phrase (i.e. ready, set, _) Maverick will fill in the blank with a logical word (a total of 12 examples) with 90% accuracy, over 2 consecutive sessions.

Maverick is working on filling in the blank for familiar phrases. He really loves wind up toys and all things related to the farm. His current targets are "Ready, set, _," "The cow says _," and "Baa, baa says the _." He is doing well with these targets, completing them with an average of 75% accuracy, over the past 5 sessions. He has not met mastery with these targets, so they will remain the same.

When greeted by a familiar adult, Maverick will respond with a greeting (i.e. Hi, Hello) without prompts over 2 consecutive sessions.

Maverick has met mastery with responding to greetings from a variety of adults without prompts over 2 consecutive sessions. The SLP recommends starting work on a more complex greeting sequence: answering the question "How are you?" when asked in conversation.

During a 10 minute cooperative learning activity, Maverick will engage in a turn taking activity (i.e. modified Musical Chairs, modified Simon memory) with no more than 1 prompt, over 2 consecutive sessions.

Maverick has demonstrated the ability to engage in the cooperative learning activity of modified UNO with peers for 10 minutes with no more than 1 prompt, over 2 consecutive sessions. The SLP recommends working on playing modified memory. She shares a video model that she has that can be used when working on this skill with Maverick.

Progress Reporting

Maverick's team develops a progress report for his programming every 9 weeks. Specific information is shared so that his parents and anyone else that may work with Maverick can help him generalize the skills he is working on at school into the natural environment.

Hank

Hank is a 14 year old student in eighth grade. He has a diagnosis of autism. He goes to a public school.

Collaboration: He receives school-based speech therapy, school-based occupational therapy, and special education services for academic subjects, has paraprofessional support 75% of the day, and has parents who are very involved in his education.

Assessment: The team completed a comprehensive assessment including the CELF-5, the FCP-R, and the AFLS. An informal observation of lunch and a field trip to the grocery store were also included.

Per the assessment, Hank is a verbal communicator. He is able to use phrases to communicate his wants and needs, can label preferred and functional items, can answer basic personal safety questions, and engage in a cooperative activity for 10 minutes without prompting. He has difficulty with labeling actions specific to vocational activities, answering social language questions, following multiple step directions, engaging in communication exchanges within a vocational setting, and with using an appropriate vocal volume when in a vocational setting.

Goal Setting: The speech-language pathologist and special education teacher met to develop goals to target the above skills. The resulting communication-based goals are:

When shown a picture of an action, Hank will label the action correctly (a total of 15) with 90% accuracy, over 2 consecutive sessions.

After performing an action during a vocational task, Hank will answer a question about the task (i.e. "What are you doing?" "Shredding paper.") with 90% accuracy, over 2 consecutive sessions.

When asked a question by an adult, Hank will respond with a logical answer (i.e. "What did you do last night?" "I watched a movie.") (a total of 15) without prompts, over 2 consecutive sessions.

When given a list containing 3 steps, Hank will follow the directions without prompts, over 2 consecutive sessions.

When engaged in a vocational activity, Hank will participate in a 2 step conversational exchange with an individual he encounters, without prompts, over 2 consecutive sessions.

When engaged in a vocational activity, Hank will use an appropriate vocal volume for the duration of the task with no more than 2 prompts.

When engaged in a community based outing, Hank will follow all steps of a task analysis, with no more than 1 prompt, over 2 consecutive sessions.

Embedded Communication Instruction: The team members working on these targets include the special education teacher, speech-language pathologist, and a paraprofessional. The teacher and paraprofessional have received instruction from the speech-language pathologist on how to address each goal throughout the course of his day.

The following items describe how Hank will work on each skill as listed above.

Labeling actions: Hank is at an age where a majority of his instruction deals with vocational activities, so he is working on labeling actions that pertain to them. He is currently completing a job rotation at an animal shelter that is close to the school he attends. One of his jobs is to sort the pet food donations that come into the shelter by brand. He is not able to label or describe the action of "sorting." This is his current target for labeling actions.

THERAPY SNIPPET

SLP: Presents picture of Hank sorting at his job. "What are you doing?"

Hank: "Food."

SLP: Presents picture of Hank sorting and says "What are you doing? Sorting."

SLP: Presents the picture again and says "What are you doing?"

Hank: "Sorting."

SLP: "That's right you are sorting."

SLP: Presents the picture again and says "What are you doing?"

Hank: "Sorting."

SLP: "Great work!"

Labeling actions after a vocational task: Hank is working on labeling actions after an actual vocational task. This was chosen as it is a functional skill to be able to answer a question about a job that you are performing. Hank

is working on identifying that he is sorting when at the pet shelter. (Working on this task both when presented with a picture and when in the actual activity helps us plan for the generalization of Hank's language skills from the classroom setting to a vocational setting in the larger community environment.)

THERAPY SNIPPET

Hank's supervisor tells him that he will sort the food donations that have come in that week. Hank works on his sorting task for 15 minutes and then is given a 4 minute break. During the break time the SLP, who is visiting him at work, initiates the following exchange:

SLP: "Hi Hank."

Hank: "Hi."

SLP: "What work are you doing?"

Hank: "Sorting."

SLP: "Wow, that is great. Enjoy your break!"

Social language questions: Hank is working on answering social language questions. He is able to answer "What movie do you like?" and "What do you like to do for fun?" He is currently working on answering "What did you have for lunch?" This was chosen as it can be a question that he discusses with peers. The staff takes a picture of his lunch each day so that he can work on this social question in the afternoon.

THERAPY SNIPPET

SLP: "What did you have for lunch?"

Hank: No answer.

SLP: "What did you have for lunch?" She shows him a picture of what he had for lunch. "Pizza."

SLP: "What did you have for lunch?"

Hank: "Pizza."

SLP: "Wow, that sounds yummy!"

Following multiple-step directions:

Hank is working on following a list containing three steps. He is following directions for getting items ready for group. Hank is given a list with text and pictures of items that he needs to gather: a marker, dry erase board, and UNO.

THERAPY SNIPPET

SLP: "Okay, Hank, it is time for group." She hands him the list and points to each item. "Get a marker, get the dry erase board, and get UNO."

Hank: He walks to get the marker and then he walks to get the dry erase board. He brings the items to the table and sits down.

SLP: Points to UNO on his schedule.

Hank: Stands up, grabs UNO, and brings it to the table.

SLP: "Great work, Hank, we are ready for group."

Conversation: Hank is working on engaging in a two-step conversational exchange when engaged in a vocational activity. In the school environment, Hank is working on getting mail from the office for selected teachers and delivering it, and often talks to the administrative

assistant and the principal while doing so. This is a natural time to work on a two-step conversation exchange.

THERAPY SNIPPET

SLP: "Okay, Hank, it is time to do your mail job."
 Hank: "Okay." He pushes the mail cart towards the office.
 Principal: "Hi Hank."
 Hank: "Hi."
 Principal: "How are you?"
 Hank: "Good."
 SLP: Points to the principal and tells Hank "Ask him."
 Hank: "How are you?"
 Principal: "I'm good. Keep up the good work!"

Vocal volume: At times, Hank is too loud for the environment that he is in, so he is working on using an appropriate vocal volume when engaged in a vocational activity. The SLP has taken a video model of Hank doing his mail job, while using an appropriate vocal volume.

THERAPY SNIPPET

SLP: "Hank, we are going to watch a video of you working. Remember that we want to use an inside voice when we do our job." Shows him the video.
 Hank: Watches the video.
 SLP: "Great watching the video. Let's do your mail job now and remember to use an inside voice."
 Hank: Grabs the mail cart and walks into the office. He sees the administrative assistant and says "Hi," in a loud voice.
 SLP: Whispers "Use an inside voice."
 Hank: Says "Hi," at an appropriate vocal level.

Task analysis: Hank's classroom is taking a field trip to the local library. When there, Hank needs to complete all steps of the following task analysis:

Date	Skill	Data
	Walk to the library	Y N
	Look for a book	Y N
	Pick 1-2 books	Y N
	Walk to the self scanner	Y N
	Get out library card	Y N
	Scan card	Y N
	Put in password	Y N
	Scan book(s)	Y N
	Get receipt	Y N

Hank just started work on this skill, so the SLP created a video model of the entire process, including all of the steps in the task analysis.

THERAPY SNIPPET

SLP: "Hank, we are going to watch a video of you going to the library." Shows him the video.
 Hank: Watches the video.
 SLP: "Great watching the video. Let's go to the library now."
 Hank: Hank goes to the library with his classmates. He completes each step of the task analysis, only needing 1 prompt for each step.

Data Collection

Because a large portion of Hank's goals involve simulated work environments and work in the community, due to the variety of his programs, Hank has a data sheet for school-based goals and a data sheet for community-based goals. Data is taken on the appropriate data sheet each day. His data sheets are uploaded onto a shared drive, so that all team members can see the documents and update them as needed. At the end of the week, a paraprofessional graphs the data from that week, providing an additional visual cue as to which interventions are effective and which need to be modified to help Hank learn new skills.

Data Binder Review: The SLP reviews Hank's binder twice a month. She picks new targets for him to work on, and helps to troubleshoot targets that seem hard for him to learn.

When shown a picture of an action, Hank will label the action correctly (a total of 15) with 90% accuracy, over 2 consecutive sessions.

Hank has met criterion with labeling packing, shredding, and folding. He is currently working on sorting. He has labeled sorting with an average of 60% accuracy, over the past 2 sessions. 90% accuracy is the mastery criterion, so this program will continue to be addressed.

After performing an action during a vocational task, Hank will answer a question about the task (i.e. "What are you doing?" "Shredding paper.") with 90% accuracy, over 2 consecutive sessions.

Hank has met criterion with the answers being packing, shredding, folding, and sorting. The SLP asks his teacher for another job activity he will do in the community. The teacher tells her that during his next rotation he will be working on feeding the animals. The next target chosen is "feeding."

When asked a question by an adult, Hank will respond with a logical answer (i.e. "What did you do last night?" "I watched a movie.") (a total of 15) without prompts, over 2 consecutive sessions.

Hank has met criterion with answering questions about his favorite movie and what he did the night before. He is able to answer "What did you have for

lunch?" when given 1 prompt. The SLP does not pick a new target, and tells the team to continue to work on answering this question without prompts.

When given a list containing 3 steps, Hank will follow the directions without prompts, over 2 consecutive sessions.

Hank has met criterion with gathering the yoga cards, a book, and the snack bag for group. He is currently working on gathering a marker, dry erase board, and UNO. He is able to do so with an average of 1 prompt. He has been working on this for 2 months. The SLP suggests taking a video model of Hank gathering the needed items, and having Hank view the video before he follows the direction.

When engaged in a vocational activity, Hank will participate in a 2 step conversational exchange with an individual he encounters, without prompts, over 2 consecutive sessions.

Hank is working on conversing with others during his mail job. He encounters many different individuals and has been able to engage in a 2 step conversational exchange without prompts, over 2 consecutive sessions. The SLP proposes that he start work on engaging in a 2 step conversational exchange during another vocational opportunity in the building, gathering items that need shredded from a handful of teachers.

When engaged in a vocational activity, Hank will use an appropriate vocal volume for the duration of the task with no more than 2 prompts.

The data shows that Hank continues to require more than 2 prompts to use an appropriate vocal volume during his current mail job. This has been worked on for over 4 weeks and Hank has not made a great deal of progress. The SLP talks with the team to check in, and learns that they can't find the video model that they are supposed to show him. The SLP shows the team where to locate this video and encourages them to show it each time they work on this skill with Hank. Continued work on this skill, using the video model, is recommended at this time.

When engaged in a community based outing, Hank will follow all steps of a task analysis, with no more than 1 prompt, over 2 consecutive sessions.

The use of a video model was recently implemented: Hank watches a video of the entire library trip and all of the steps in the task analysis before he goes to the library. On his first trip to the library, Hank was able to complete each step on the library tasks analysis with 1 prompt. Continued work on this skill, using the video model, is recommended at this time.

Progress Reporting

Hank's team develops a progress report for his programming every 9 weeks. Specific information is shared so that his parents and anyone else that may work with him can help him generalize the skills he is working on at school and at work into the natural environment.

In Conclusion

Both students have a well-rounded intervention program and a dedicated team of individuals who are working together to help them increase his overall communication skills. All targets chosen for Maverick's and Hank's goals have been selected because they are preferred and/or functional. A data binder review for the communication based goals is completed by the SLP in a timely manner, and new targets are developed as needed. When progress reports are due, the SLP shares specific data on the goals, so that these targets can be generalized into the home environment.

Case Studies

Finally, let's consider several brief case studies where one of the six steps is not being implemented. We will discuss what can be done in each case, to implement collaboration, assessment, goal setting, embedded communication intervention, data collection, and progress reporting with fidelity.

Case Study #1

Fredrick is a 6 year old student. He has a diagnosis of autism. He goes to a public school and is in kindergarten.

He receives school-based speech therapy and special education services for academic subjects, has paraprofessional support 100% of the day, and has parents who are very involved in his education.

The team completed a comprehensive assessment including the VB-MAPP, the EOWPVT-4, and an informal observation of lunch, morning circle and recess.

Per the assessment, Fredrick is not able to communicate his wants and needs throughout the day. At times he carries around a picture book that has icons, but he does not consistently use it to communicate with those around him. He can follow one step directions when accompanied by prompting from the adult giving the direction. Fredrick seems to enjoy engaging with others and particularly likes to engage in centers, recess, and morning circle. He does experience frustration throughout his day, when his communication messages are difficult to understand.

The speech-language pathologist and special education teacher have each created their own goals for his IEP. Fredrick receives speech therapy once a week for 45 minutes in a small group with other students. The teacher has requested a meeting with the SLP to help support her

goals within the classroom, but schedule conflicts keep getting in the way.

After 3 months, Fredrick's parents voice concern because they feel that Fredrick is not making much progress in the area of communication. What steps could be taken to remedy this situation?

Recommendations: First, Fredrick's parents are an important part of the educational team, so the other team members should find out as much as they can about the parents' concerns, and ensure that they are kept informed. Potential strategies include a weekly note home from the teacher, with a sampling of specific communication targets to generalize to the home environment; inviting the parents to a monthly school based observation, to give them a more in-depth understanding of how to work on current communication targets; and/or a brief meeting with parents (via phone or face to face) when progress reports come out, to go over the progress information

Returning to our model, specific areas of concern within this scenario include goal setting and embedded instruction. Even though it can be a challenge due to time constraints and heavy caseloads, collaboration among team members is essential to address these concerns, and to ensure that all team members are fully aware of what the communication goals are, and how to support them throughout Fredrick's day.

In terms of goal setting, the speech language pathologist and special education teacher need to consider the separate goals that Frederick is working on. Can they instead develop shared goals, so that Frederick will have more opportunities to practice his skills across the school day? Creating shared goals helps the team to build a more cohesive program for Frederick, allowing him to make more meaningful progress.

Collaboration can alleviate any continued confusion regarding embedded instruction. In particular, the teacher and speech-language pathologist need to meet so that they can be on the same page: Fredrick needs many opportunities to practice his communication skills across his school day, and the teacher wants to embed additional opportunities for him to practice these skills, but needs to understand how to support the speech therapy goals. If meeting face to face is not an option, it's time to get creative. For example, a shared document in Google Drive would allow both of them to make and edit notes about interventions in real time. Another alternative would be for the SLP to create a brief tutorial about supporting Fredrick's programming.

Case Study #2

Venita is an 8 year old student. She has a diagnosis of autism. She goes to a public school and is in third grade.

She receives school-based speech therapy and special education services for academic subjects, has

paraprofessional support 100% of the day, and has a mother who is her guardian.

The team completed a comprehensive assessment including the functional communication profile, the EOWPVT-4, and an informal observation of Venita in class.

Per the assessment, Venita is able to communicate her wants and needs throughout the day and with a variety of staff members and peers. She is able to label a variety of nouns, actions and phrases. She does not consistently use grammatically correct sentences, but this is a goal that she is working on in class and in speech therapy sessions. Venita seems to enjoy engaging with other children and likes her time with peers during recess, lunch, specials and language arts.

The speech language pathologist and special education teacher have completed their own assessments and have created a handful of shared communication-based IEP goals. Venita receives speech therapy twice a week for 60 minutes total: one session is an individual session and the other is a small group session consisting of four students. The SLP and teacher work on Venita's goals in the same way, and meet twice a month to discuss her programming.

The teacher points out to the SLP that she is concerned with Valerie's progress with creating grammatically correct sentences. She notes that they have been working on the same three targets for two months now, and that Venita seems to be bored with this program. She also notes that Venita already knows how to create grammatically correct sentences about the pictures she has been using (He is running, She is swimming, They are reading). What steps could be taken to remedy this situation?

Recommendations: It is wonderful that the SLP and teacher are both working on the communication-based goal of sentence creation. The creation of shared goals to help students increase their overall communication skills is a great example of collaboration among team members.

The problem in the above case study is that the student appears to have mastered the three sentence creation targets (He is running, She is swimming, They are reading) and new targets have not been chosen. Setting up a robust way to capture data and assuring that all members of the team are gathering data on the same targets is just half the battle. Analyzing the collected data to make decisions about future intervention is a very important piece of the intervention puzzle.

To remedy this situation, the SLP should set up a time within her schedule to complete a binder review for Valerie's communication based programs. This can be difficult to accommodate within our already full schedules, but students who are receiving more intensive services need this type of data review. If we do not complete binder reviews, our students may continue to

work on mastered targets, when they could be working on and learning new information.

If the SLP finds that Valerie has mastered these targets in accordance with the criterion included on the goal for sentence creation, he should determine additional targets that Valerie can work on for her sentence creation goal. These new targets should be communicated to the teacher and other integral team members that also might be supporting work on this goal. The team can then gather materials to work on the new sentence construction targets that have been chosen.

Case Study #3

Anders is a 12 year old student. He has a diagnosis of autism. He goes to a public school and is in sixth grade.

He receives school-based speech therapy and special education services for all academic subjects, has paraprofessional support 100% of the day, and has a supportive home environment. Anders also receives services from an outside board certified behavior analyst (BCBA). The BCBA has conducted a functional behavior assessment to help determine the function of Anders problem behavior, including mild forms of aggression (hitting other adults, hitting other students), attempting to leave the classroom or teaching area, and verbal protesting. Due to the intensity of these behaviors, Anders works with a rotation of three paraprofessionals throughout the day; the BCBA has helped the team develop a behavior plan, and trained the team on how to implement it. The BCBA visits the school team once a month to check in, review behavior data and observe Anders.

The team completed a comprehensive assessment including the AFLS, the EOWPVT-4, and an informal observation of Anders in class, lunch, and during art class.

Per the assessment, Anders is able to communicate his wants and needs throughout the day and with a variety of staff members and peers. He is able to label a variety of nouns, actions, and phrases. He is also able to create grammatically correct sentences about a picture. He has difficulty participating in cooperative group lessons and with engaging in leisure activities with peers.

The speech-language pathologist and special education teacher have completed their own assessments and have created a handful of shared communication-based IEP goals. Anders receives speech therapy twice a week for 60 minutes total. One session is an individual session and the other session is a small group session consisting of 5 students. The SLP and teacher work on goals in the same way and meet once a month to discuss his programming.

The teacher points out that the paraprofessionals seem confused about how to work on Anders' leisure-based goal: "Anders will engage in a cooperative leisure activity

for a duration of 20 minutes, with no more than one prompt." The current target is playing modified UNO (after watching a video model of how to play the game). The SLP has created a daily data sheet that is shared and used with all staff; she has also put on the data sheet the exact game that is to be played during the cooperative leisure lesson each day, and the video model is readily available and saved on the classroom computer. In addition, the SLP and teacher showed the paraprofessionals how to play modified UNO two months ago. Despite this, the students are still having trouble playing the game without prompting. What else could the SLP and teacher do to help the paraprofessionals gain a better understanding how to embed work on Anders' leisure-based goal daily?

Recommendations: It is great that Anders has three paraprofessionals to help implement his programming across the day; particularly when multiple people are involved, however, it can be difficult to train staff to support communication goals across the student's school day. The data sheet is a good start, and some training has already been conducted; adding behavioral skills training can more thoroughly orient the paraprofessionals.

The teacher and SLP secure a time to meet with the paraprofessionals to train them on how to target Anders' leisure goal, using a behavioral skills training (Miltenberger 2008) approach.

1. **Instructions:** The SLP and therapist describe the goal to the staff, reviewing all the steps involved in playing modified UNO.
2. **Modeling:** The SLP and therapist model how to access the video model on the classroom computer and when to show it to the students. The paraprofessionals all view the video model to ensure familiarity. The SLP and therapist the model how to set up and play modified UNO.
3. **Rehearsal:** The paraprofessionals role play presenting the video model to the students, setting up the activity, and facilitating game play.
4. **Feedback:** The SLP and teacher allow the paraprofessionals two weeks to run the modified leisure program with Anders and the small group of peers he meets with weekly. Then the SLP and teacher give the paraprofessionals feedback regarding their implementation of this modified leisure program.

By following a behavioral skills training approach, we are including a thorough training for the staff who will be helping to support communication programming. This is a very important piece to the intervention puzzle. If we skip this step, staff may have unanswered questions; when staff are unsure of how to work on a skill with a student, they may not do so. This may in turn cause our student to make slower progress with his communication programming.

Conclusion

The six-step model presented in this course, implemented with fidelity, can be of great support to the child who has limited or emerging verbal skills. The examples and case studies we've discussed are a helpful step in the learning process, allowing us to work through the information and apply it to simulated scenarios together. The next step will include analyzing your current caseloads for the potential to implement this model – with, as always, the end goal of providing effective services for students with autism and other complex communication disorders.

References

- Adams, A. E. (2010). *Understanding the skill of functional task analysis* (Order No. 3451375). Available from Education Collection. (862345029). Retrieved from <https://search.proquest.com/docview/862345029?accountid=166077>
- American Educational Research Association. Retrieved from <https://www.aera.net/> on September 1, 2018.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.)
- American Speech-Language-Hearing Association (n.d.). *Autism* (Practice Portal). Retrieved from www.asha.org/Practice-Portal/Clinical-Topics/Autism/ on September 4, 2018.
- Annett, John (2004). Hierarchical task analysis. In D. Diaper & N. A. Stanton (Eds.), *The handbook of task analysis for human-computer interaction*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Barbera, M. L., & Rasmussen, T. (2007). *The verbal behavior approach: how to teach children with autism and related disorders*. London: Jessica Kingsley.
- Besler, F., & Kurt, O. (2016). Effectiveness of video modeling provided by mothers in teaching play skills to children with autism. *Kuram Ve Uygulamada Egitim Bilimleri*, 16(1), 209-230. doi:<http://dx.doi.org/10.12738/estp.2016.1.0273>
- Centers for Disease Control and Prevention. (2018). *Autism*.
- Cooper J.O, Heron T.E, Heward W.L. *Applied behavior analysis* (2nd ed.) Upper Saddle River, NJ: Pearson; 2006.
- Interprofessional Education Collaborative. Retrieved from <https://www.ipecollaborative.org/resources.html> on September 3, 2018
- Kelley, M. E., Shillingsburg, M. A., Castro, M. J., Addison, L. R., & LaRue, Robert H., Jr. (2007). FURTHER EVALUATION OF EMERGING SPEECH IN CHILDREN WITH DEVELOPMENTAL DISABILITIES: TRAINING VERBAL BEHAVIOR. *Journal of Applied Behavior Analysis*, 40(3), 431-45. Retrieved from <https://search.proquest.com/docview/225043057?accountid=166077>
- Kleiman, Larry. *Functional Communication Profile – Revised*. Linguisticsystems.
- Leaf, J. B., Cihon, J. H., Leaf, R., Mceachin, J., & Taubman, M. (2016). A progressive approach to discrete trial teaching: Some current guidelines. *International Electronic Journal of Elementary Education*, 9(2), 361-372. Retrieved from <https://search.proquest.com/docview/1967313128?accountid=166077>
- Leaf, J. B., Leaf, R., Mceachin, J., Taubman, M., Ala'irosales, S., Ross, R. K., Weiss, M. J. (2016). Applied behavior analysis is a science and, therefore, progressive. *Journal of Autism and Developmental Disorders*, 46(2), 720-731. doi:<http://dx.doi.org/10.1007/s10803-015-2591-6>
- Miltenberger R. *Behavior modification: Principles and procedures* (4th ed.) Belmont, CA: Wadsworth; 2007.
- Morlock, L., Reynolds, J. L., Fisher, S., & Comer, R. J. (2015). Video modeling and word identification in adolescents with autism spectrum disorder. *Child Language Teaching and Therapy*, 31(1), 101-111. doi:<http://dx.doi.org/10.1177/0265659013517573>
- National Professional Development Center on Autism Spectrum Disorder (2011) *Evidenced-based practice: Video modeling*. Retrieved from: <http://autismpdc.fpg.unc.edu/content/video-modeling> (December 2013).
- Partington, James and Mueller, Michael. *The Assessment Of Functional Living Skills*. Stimulus Publications.
- Pearson Clinical online – Speech & Language section. Retrieved from <https://www.pearsonclinical.com/language.html>, on September 3, 2018.
- Wiig, Elisabeth H., PhD, Eleanor Semel, EdD, Wayne A. Secord, PhD. *Clinical Evaluation of Language Fundamentals – 5th editions*. Pearson
- Williams-Diehm, Kendra L., PhD, Dawn A. Rowe, PhD, Margaret C. Johnson, MEd, and Jean Francois Guilmeus, BS, *Career Development and Transition for Exceptional Individuals*. Vol 41, Issue 1, pp. 16 - 26. First Published December 7, 2017.

SYSTEMATIC LANGUAGE INSTRUCTION FOR EARLY LEARNERS WITH AUTISM

Final Exam (2 CE HOURS)

- As defined in ASHA's Practice Portal, "autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by deficits in social communication and social interaction and the presence of restricted, repetitive behaviors." Social communication deficits include _____.
 - Hyper- and/or hypo-sensitivity to sensory input
 - Impairments in aspects of joint attention and social reciprocity
 - Inflexible adherence to routines
 - Restricted interests
- Joe is working on labeling giraffe. (a) The discriminative stimulus is instruction from the therapist, who is holding up a picture of a giraffe and asking "What is it?" (b) The response from the learner is the label "giraffe." (c) The consequence is reinforcement from the therapist in the form of verbal praise: "That is a giraffe – great job!" This is an example of _____.
 - Discrete trial teaching
 - Generalization
 - Natural environment teaching
 - Task analysis
- _____: "The process of using valuable reinforcers to condition people, materials, and environments to become reinforcing."
 - Data
 - Generalization
 - Pairing
 - Verbal behavior
- The following are examples of which verbal operant?
Hearing "A, B, C, _" Saying "D"
Hearing "Twinkle, twinkle, little _" Saying "star"
"What is your mom's name?" "Lainey"
"What drink do you like?" "Juice"
 - Echoics
 - Intraverbals
 - Mands
 - Tacts
- _____ is the verbal operant that involves labeling a picture, object, or action.
 - Echoing
 - Listener behavior
 - Manding
 - Tacting
- According to the National Professional Development Center on Autism Spectrum Disorders (2011), video modeling is an evidence-based intervention for _____.
 - All individuals with ASD
 - Individuals with ASD in elementary through middle school
 - Individuals with ASD in high school
 - Individuals with ASD in preschool
- The Interprofessional Education Collaborative (2016) lists four main areas of competency for interprofessional and collaborative practice. Which of the following is NOT one of them?
 - Interprofessional Communication
 - Roles/Responsibilities
 - Specialization/Boundaries
 - Teams/Teamwork
- "An interactive, play-based assessment that provides comprehensive information about language skills for children at high risk for moderate-to-severe language delays. It is a good tool if you are working with students who are younger in age, as it looks at early developmental language skills," describes which standardized measure?
 - Clinical Evaluation of Language Fundamentals, Fifth Edition (CELF-5)
 - Expressive One-Word Picture Vocabulary Test, Fourth Edition (EOWPVT-4)
 - Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4)
 - Preschool Language Scale, Fifth Edition (PLS-5)

9. "It evaluates eleven major skill categories of communication and related aspects, including sensory, motor, behavior, attentiveness, receptive language, expressive language, pragmatic/social, speech, voice, oral, and fluency. The profile does not yield standard scores; rather, it is an informal instrument that provides information as to where the individual subject is performing," describes which non-standardized measure?
- Assessment of Functional Living Skills (AFLS)
 - Communication Matrix
 - Functional Communication Profile – Revised (FCP-R)
 - Verbal Behavior Milestones Assessment and Placement Program (VB-MAPP)
10. "Sal will label actions (a total of 20) over 2 consecutive sessions." Which of the following important considerations is missing from this goal?
- A quantity for the skill learned
 - A time frame for mastery
 - How accuracy will be measured
 - What skill will be captured
11. "Julian will use comments within a 10 minute group with no more than 1 prompt, over 2 consecutive sessions." Which of the following important considerations is missing from this goal?
- A quantity for the skill learned
 - A time frame for mastery
 - How accuracy will be measured
 - What skill will be captured
12. "The therapist describes labeling, and how to work on this skill," describes which step of behavioral skills training?
- Feedback
 - Instructions
 - Modeling
 - Rehearsal
13. In order to create a visual analysis of how a student is doing with a target, a member of the educational team should _____.
- Build a task analysis
 - Graph the data from the daily data sheet
 - Select a new target for him/her to work on
 - Share the daily data sheet
14. Which of the following is an example of specific progress reporting?
- Goal: When given a verbal one step direction, Mallory will follow the direction (a total of 10) without prompts, over 2 consecutive sessions. *Mallory is able to follow the directions "come here" and "throw away" without prompts, over 2 consecutive sessions.*
 - Goal: When presented with a where question, Mallory will answer it with a logical answer (a total of 12 examples) with 90% accuracy, over 2 consecutive sessions. *Mallory is able to answer where questions with 75% accuracy*
 - Goal: When shown a picture, Mallory will label the place (a total of 12) with 90% accuracy, over 2 consecutive sessions. *Mallory has been working hard on this target. She is able to complete this with 75% accuracy.*
 - None of the above
15. Which of Maverick's goals contains all of the important considerations discussed in "Goal Setting"?
- When given a verbal one step direction, Maverick will follow the direction (a total of 10) without prompts.
 - When greeted by a familiar adult, Maverick will respond with a greeting (i.e. Hi, Hello).
 - When presented with a fill in the blank phrase (i.e. ready, set, _) Maverick will fill in the blank with a logical word (a total of 12 examples) with 90% accuracy, over 2 consecutive sessions.
 - When shown a picture, Maverick will label the action using the present progressive form (a total of 12), over 2 consecutive sessions.
16. Which verbal operant is the SLP working on with Maverick?
- SLP: "Baa, baa says the _." "Maverick: "Sheep."
SLP: "Great job, Maverick! The cow says _." "Maverick: "Moo."
SLP: "That's right, the cow says moo."
- Echoics
 - Intraverbals
 - Listener behaviors
 - Tacts

17. Which verbal operant is the SLP working on with Hank?
 SLP: "Okay, Hank, it is time for group." She hands him the list and points to each item. "Get a marker, get the dry erase board, and get UNO."
 Hank: He walks to get the marker and then he walks to get the dry erase board. He brings the items to the table and sits down.
 SLP: Points to UNO on his schedule.
 Hank: Stands up, grabs UNO, and brings it to the table.
 SLP: "Great work, Hank, we are ready for group."
 a. Echoics
 b. Intraverbals
 c. Listener behaviors
 d. Mands

18. Hank's classroom is taking a field trip to the local library. When there, Hank needs to complete all steps of the following:

Date	Skill	Data
	Walk to the library	Y N
	Look for a book	Y N
	Pick 1-2 books	Y N
	Walk to the self scanner	Y N
	Get out library card	Y N
	Scan card	Y N
	Put in password	Y N
	Scan book(s)	Y N
	Get receipt	Y N

This tactic is _____.

- a. Generalization
 b. Pairing
 c. Task analysis
 d. Video modeling

19. Consider the following: "Valerie's special education teacher points out to the SLP that she is concerned with Valerie's progress with creating grammatically correct sentences. She notes that they have been working on the same three targets for two months now, and that Venita seems to be bored with this program. She also notes that Venita already knows how to create grammatically correct sentences about the pictures she has been using (He is running, She is swimming, They are reading)." What steps could be taken to remedy this situation?
 a. A data binder review, potentially followed by the assignment of additional targets
 b. A reduction in embedded instruction
 c. Additional informal observation
 d. Additional standardized assessment

20. Anders' special education teacher and SLP meet with his paraprofessionals to train them on how to target his leisure goal. When the paraprofessionals role play presenting the video model to the students, setting up the activity, and facilitating game play, which step of behavioral skills training are they engaged in?
 a. Feedback
 b. Instructions
 c. Modeling
 d. Rehearsal

ANSWER SHEET

First Name: _____ Last Name: _____ Date: _____

Address: _____ City: _____

State: _____ ZIP: _____ Country: _____

Phone: _____ Email: _____

ASHA membership # _____

License/certification # and issuing state/organization _____

Clinical Fellow: Supervisor name and ASHA membership # _____

Graduate Student: University name and expected graduation date _____

** See instructions on the cover page to submit your exams and pay for your course.

By submitting this final exam for grading, I hereby certify that I have spent the required time to study this course material and that I have personally completed each module/session of instruction.

Systematic Language Instruction for Early Learners with Autism Final Exam

- | | | | | |
|--------------------|--------------------|---------------------|---------------------|---------------------|
| 1. (A) (B) (C) (D) | 5. (A) (B) (C) (D) | 9. (A) (B) (C) (D) | 13. (A) (B) (C) (D) | 17. (A) (B) (C) (D) |
| 2. (A) (B) (C) (D) | 6. (A) (B) (C) (D) | 10. (A) (B) (C) (D) | 14. (A) (B) (C) (D) | 18. (A) (B) (C) (D) |
| 3. (A) (B) (C) (D) | 7. (A) (B) (C) (D) | 11. (A) (B) (C) (D) | 15. (A) (B) (C) (D) | 19. (A) (B) (C) (D) |
| 4. (A) (B) (C) (D) | 8. (A) (B) (C) (D) | 12. (A) (B) (C) (D) | 16. (A) (B) (C) (D) | 20. (A) (B) (C) (D) |

Accessibility and/or special needs concerns?
Contact customer service by phone at (888) 564-9098
or email at support@pdhacademy.com.

Refund and general policies are available online at
<http://pdhacademy.com/policies/>

SYSTEMATIC LANGUAGE INSTRUCTION FOR EARLY LEARNERS WITH AUTISM (2 CE HOURS)

COURSE EVALUATION

Learner Name: _____ Completion Date: _____

PT PTA OT OTA SLP SLPA Other: _____

	Disagree					Agree
	1	2	3	4	5	
Orientation was thorough and clear	1	2	3	4	5	
Instructional personnel disclosures were readily available and clearly stated	1	2	3	4	5	
Learning objectives were clearly stated	1	2	3	4	5	
Completion requirements were clearly stated	1	2	3	4	5	
Content was well-organized	1	2	3	4	5	
Content was informative	1	2	3	4	5	
Content reflected stated learning objectives	1	2	3	4	5	
Exam assessed stated learning objectives	1	2	3	4	5	
Exam was graded promptly	1	2	3	4	5	
Satisfied with learning experience	1	2	3	4	5	
Satisfied with customer service (if applicable)	1	2	3	4	5	n/a

What suggestions do you have to improve this program, if any?

What educational needs do you currently have?

What other courses or topics are of interest to you?
