Module: Naturalistic Intervention

Naturalistic Intervention: Steps for Implementation

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Naturalistic intervention is a collection of practices including environmental arrangement, interaction techniques, and behavioral strategies. These practices are designed to encourage specific target behaviors based on learners' interests by building more complex skills that are naturally reinforcing and appropriate to the interaction. Naturalistic intervention has demonstrated effectiveness with learners with ASD at the preschool, elementary, and middle/high school levels and is appropriate for learners of any cognitive level. By definition, naturalistic intervention is used in daily routines throughout the day to develop skills in the areas of communication (both prelinguistic and linguistic) and social development. Table 1 at the end of this document provides examples of embedding naturalistic intervention throughout the day.

Step 1. Identifying a Target Act

In Step 1, a specific target act/skill is selected to be the focus of the intervention. This target act may focus on prelinguistic or linguistic communication and/or social skills. The target act should come directly from the learner's IFSP or IEP.

1. Teachers/practitioners select a specific target act/skill to be the focus of the intervention that:

    a. focuses on prelinguistic or linguistic communication and/or

    b. social skills.

With naturalistic intervention, it is important to identify specific skills that will be targeted (i.e., target acts). These skills, or target acts, need to be more specific than a general goal.

EXAMPLE: General goal vs. target act

General goal: Connor will increase his use of language during play.
Target act: Connor will use the pronouns *he, she,* and *it* correctly.

2. Teachers/practitioners confirm that target acts are reflected in the learner's IEP or IFSP.

The IEP or IFSP team, which may include special education teachers, general education teachers, speech-language pathologists, occupational therapists, physical therapists, psychologists, parents, and/or caregivers, should meet to determine appropriate goals and target acts for the learner. The skills targeted in naturalistic intervention should come directly from the IEP or IFSP developed by the learner's interdisciplinary team.

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Because naturalistic intervention is often used with very young children, it is important to recognize and understand the value of prelinguistic communication. For example, a target act may be pointing to an object to establish shared attention, engaging in shared attention, or vocal turn-taking. Although none of these target acts demonstrates actual language use, these skills provide the foundation for language development.

Step 2. Collecting Baseline Data

1. Prior to intervention, teachers/practitioners determine the learner's current use of the target skill.

2. Teachers/practitioners take data on the target skill a minimum of three times in more than one environment.

As with all practices, it is important to have a clear understanding of learners' skills before beginning naturalistic intervention. A frequency log like the one below may be useful when collecting data. These baseline data will be critical for assessing whether or not the intervention is effective.

Table 2. Example of Baseline Data Collection
Target Act: Initiating communication with peers

Date	Location	Tallies of Target Act	Notes (e.g., antecedents, prompts, etc.)
4-7-08	Circle Time	√	Asked Mitch, "What are we supposed to be doing?"
4-8	Lunchroom	√	Sat alone. Said "hey" when Matt bumped into his table.
4-8	Free Choice Time		Did not speak at all – sat alone in corner of classroom
4-9	Math Center	√	Asked Jason, "Where did you get those blocks?"

With information from a log like this, teachers/practitioners can identify how frequently learners currently use the target act. In the notes column, he/she might indicate prompts that were used, environmental cues, or other antecedents to the demonstration of the target act.

Language sampling can provide useful information about learners who are using words and/or phrases regularly. It is a direct transcription of an interaction between learners and their communicative partners. A language sample will provide information on the current length and content of utterances as well as antecedents to their production. A speech/language pathologist on the learner's team should be able to take and analyze a language sample.

Step 3. Providing Training to Team Members

1. Teachers/practitioners determine who will teach the skill.

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Because naturalistic intervention occurs throughout the day, many adults may need to be trained on how to elicit the target act. These adults may include parents, caregivers, related service providers, paraprofessionals, classroom teachers, or classroom volunteers. Having multiple adults interact with learners encourages generalization. Adults who naturally interact with learners should be prepared to use naturalistic intervention strategies to elicit target skills.

2. Teachers/practitioners provide adequate training to team members before initiating naturalistic intervention.

Adults who will be interacting with learners must understand:
a. the target skill and
b. the strategies used to elicit that skill.

Depending on the situation, different levels of training will be necessary. For example, in a preschool classroom, the classroom teacher may need to arrange the environment and to model the behavioral strategies used to elicit the skill for assistants and volunteers. For older learners in multiple classrooms throughout the day, individual classroom teachers must understand the entire process to successfully embed naturalistic strategies in their classrooms. Regular consultation with a case manager and/or professional development may be required to achieve consistency and success in implementing naturalistic intervention throughout the day when multiple teachers and settings are involved.

Although some naturalistic practices, such as milieu teaching, have traditionally been implemented by teachers/practitioners, research has also demonstrated the effectiveness of training parents, caregivers, and/or other professionals to implement the teaching. Parents are often taught specific parts of the practice, such as reciprocal interaction techniques, while the learner also participates in more traditional therapy sessions that involve behavioral techniques such as modeling to elicit responses (within an environment adapted for the learner's own interests). Parents also can be trained to implement all aspects of the intervention in home and community settings. Parent involvement may be especially important for very young learners, for whom multiple therapy sessions per week in a clinic or other out-of-home setting may not be appropriate. In these situations, parents are often the most appropriate and most effective teachers. **Please refer to *Parent Implemented Interventions: Steps for Implementation*(National Professional Development Center on ASD, 2008) for more information about parent training.**

Step 4. Identifying the Contexts for Intervention

Naturalistic intervention should take place throughout the day in the context of daily routines/ schedules. Table 1 (found at the end of this document) provides an example of naturalistic interventions being used to increase a target act throughout a preschooler's day at school and at home. The art of embedding intervention within the learner's regular routines is critical for successfully implementing naturalistic intervention.

1. Teacher/practitioners (along with caregivers and family) determine the learner's daily schedule.

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2. Teachers/practitioners identify the following contexts in which to embed naturalistic intervention:

    a. learner-directed activities. In these activities, learners select what they want to do within a specific environment (see Step 5). For example, Betsy has a target act of labeling animals. Different animal toys are offered during free-choice time, and Betsy decides that she wants to work on an animal inset puzzle after math center time. The teacher/practitioner may encourage Betsy to use the target act during this learner-directed activity by encouraging Betsy to request each piece that represents a different animal.

    b. routine activities. Routine activities take place on a regular basis. For example, Devin has a target act of using words to request, “more.” Each day during snack, his teacher presents several tasty options. She keeps these out of reach and gives very small portions to the students upon their request. These small portions provide students, including Devin, with numerous opportunities to request, “more.” Choice making should be built into these routine activities, thus allowing learners to direct the interactions.

    c. planned activities. Planned activities are set-up in advance (i.e., within a lesson plan) to provide opportunities for individual learners to practice the target act. For example, a teacher may plan a science experiment dealing with units of measure. If the target act is for Sam to initiate verbal communication, she may have the students find partners, choose objects to measure, and then have one student verbally report the findings to his/her partner who is recording the data. The teacher would make sure that Sam is designated as the reporter and provide any necessary prompts to help him verbally report findings to his partner. Again, choice-making should be built into the activity.

Again, Table 1 provides examples of how naturalistic intervention can be embedded into daily routines.

Step 5. Arranging the Environment to Elicit the Target Act

In Step 5, teachers/practitioners use information from Step 4 and materials/resources within learning environments to capture learners’ attention and motivate them to produce target acts.

1. Teachers/practitioners choose motivating materials/activities to engage learners and promote the use of targeted skills.

A key feature of naturalistic intervention is using materials and toys that will motivate the learner to engage in the target act and that will promote generalization of skills. Toys that can be particularly useful in facilitating communication and social play include those that:

- have multiple parts (e.g., legos, a shape sorter, or Mr. Potato Head),
- are added onto another activity (e.g., adding Little People into play with blocks, using puppets to act out a reading lesson),

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- require adult assistance (e.g., having lid on bottle of bubbles so tight that learner must request help, holding puzzle pieces until the child requests them), and/or
- encourage turn-taking (e.g., throwing a ball, placing puzzle pieces, sending toys down a ramp).

Social routines, such as finger plays/songs, peek-a-boo, or tickling games between parent and child can also be excellent activities for engaging pre-linguistic learners.

2. Teachers/practitioners manage and distribute teaching materials in a way that encourages learners to communicate.

Within interactions and contexts for intervention, materials should be managed by the communicative partner. That is, the communicative partner should be "the keeper of the goods" and distribute the materials in a manner that encourages communication. For example, communication can often be elicited by giving learners only a few of the legos at once, forgetting to provide a paintbrush with the paint, or putting a doll's hat on her feet as if by accident. Such "mistakes" are likely to elicit a request or comment from the learner.

3. Teachers/practitioners arrange the intervention context and environment to:

    a. encourage the use of the target act/skill and

    b. maintain learners' interests.

Some examples follow:

Example A. Kaitlyn's team has identified her target act to be *pointing to request* (a prelinguistic communication skill). Her mother knows that she loves to complete puzzles. She takes Kaitlyn's puzzles off the table, and puts them on a bookshelf that Kaitlyn cannot reach. The intention is for Kaitlyn to point to the puzzles to request them.

Example B. Mac's team has identified his target act to be *increased shared attention*. He loves play dough. Mac's therapist places two balls of play dough prominently on the table and provides a chair with sides to minimize distractions and provide Mac with physical cues (chair sides) to keep him seated and engaged in the activity. The intention is for Mac to select the play dough as an activity and to stay with the activity while the therapist tries to engage him in shared attention.

Example C. Ruby's team has identified her target act to be *increased turn taking*. She enjoys manipulatives. Her teacher replaces the standard manipulatives (e.g., counting bears) with turn-taking games that involve the manipulation of small parts, like *Ants in the Pants*, *Stacrobats*, and *Kerplunk*. The intention is for Ruby to be enticed by the small pieces and then engage in turn-taking while playing the game.

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Step 6. Eliciting the Target Act

In Step 6, the communicative partner elicits the target act using interaction techniques and, if necessary, behavioral strategies like prompting and modeling.

Step 6 can be implemented in a number of ways, including:

- teaching families to use interaction techniques during interactions with their child, while having a teacher/practitioner implement behavioral teaching practices (e.g., modeling);
- teaching families to use both interaction and behavioral techniques during interactions with their child; and
- having teachers/practitioners use both interaction and behavioral techniques without family involvement.

Step-by-step directions for each practice will be provided. In practice, it is most common for interaction and behavioral techniques to be used in combination with one another, thereby providing both the foundation of the interaction and the specifics on how the communicative partner interacts with the learner. In some cases, interaction techniques (Step 6a) will be sufficient to elicit the target act, and further prompting (Step 6b) will not be necessary.

Step 6A. Engaging the Learner in an Interaction

In Step 6a, the communicative partner engages the learner in a language-rich and learner-centered interaction in which the communicative partner is highly attuned and responsive to the communicative attempts of the learner.

1. Teachers/practitioners engage the learner in a language-rich, learner-directed, and reciprocal interaction that involves the following techniques:

    a. following the learner's lead.

Following the learner's lead involves allowing the learner to direct the interaction and the activity. Rather than a teacher/practitioner having a set lesson plan (e.g., to play in the toy house), she waits and sees what the learner wants to do. If the learner goes to the toy house, she engages him there. But if the learner goes to the block area, she engages him with the blocks. Remember that the environment has already been arranged to elicit specific targets (Step 5), so either activity should lead to the desired target.

For some learners, the communicative partner must be especially observant and patient in order to follow the learner's lead. If a learner has a more passive temperament, it may be difficult to identify his interests, and the communicative partner may be tempted to become more directive ("Here's a puzzle! Let's do it!"). However, communicative partners are encouraged to be patient, watch for nonverbal indications of interest (e.g., eye gaze, reaching), and match the learner's activity level (e.g., if the learner is pouring sand over and over, join her in this activity rather than encouraging her to make a sandcastle).

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b. being at the learner's level.

With very young learners, the communicative partner may have to lie on the floor or sit on the floor while the child is on a chair or couch to share face-to-face interactions. This kind of positioning facilitates shared attention, which is crucial to the interactions.

For learners who avoid eye contact, it may be necessary for the communicative partner to maneuver her own body to interrupt the learner's eye gaze. That is, if the learner is looking toward the clock while playing with a koosh ball, the communicative partner may need to put her own face in the line of the clock to encourage eye contact and establish shared attention. However, if a learner finds eye contact unpleasant and is actively avoiding eye contact, it may be best to engage the learner in the interaction without insisting upon eye contact.

c. responding to the learner's verbal and nonverbal initiations.

When joining learners in play, communicative partners must pay close attention to learners' communicative cues. A learner who wants a snack that is out of reach may glance toward it and vocalize. The communicative partner can recognize this as a communicative attempt and respond. Being aware of even the most subtle communicative attempts and responding to these attempts teaches the learner that communication is powerful.

Both verbal and motor imitation can engage learners. If a learner holds a puzzle piece up to her face and says, "ga," the communicative partner can hold a puzzle piece up to his own mouth and say, "ga." This imitation can encourage turn-taking and facilitate the back-and-forth dance of social communication.

Interrupting a routine with a pause or doing something that the learner finds funny or interesting can also be a good way to engage learners. For example, make a funny face as you reveal yourself after a few rounds of peek-a-boo or pause at the end of a line of a song ("The itsy bitsy spider went up the water…..").

d. providing meaningful verbal feedback.

Responding to learners' communicative attempts with words gives learners a model while they are sharing attention with the teacher/practitioner. A minimally verbal learner may be trying to place a puzzle piece and say, "Ta!" The teacher/practitioner, available and engaged, can respond, "Stuck! That piece is stuck! Let's turn it."

e. expanding the learner's utterances.

When a learner is verbal, especially at the one- to three-word phrase level, the communicative partner can build on what the learner says, thereby demonstrating more linguistically sophisticated options, as in this script:

Learner (with toy cars): "Car."
Teacher (pushes car): "Car. Go, car!"

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Learner: "Go, car!"
Teacher: "Go, car! Fast!"

To summarize Step 6a, these strategies are used to maintain the learner's interests and provide language models that are at a slightly higher level than the learner's own language use. For some learners, these techniques will facilitate their use of the target act.

For most children with ASD, it will be necessary to provide supports for learners to demonstrate the target acts. Behavioral interventions to elicit targeted acts are outlined in Step 6b, below.

Step 6B. Using Behavioral Interventions to Elicit Target Acts

In Step 6b, the communicative partner uses modeling, mand-models, time delay, and/or incidental teaching techniques to elicit the target act within intervention contexts and arranged environments that were identified in Steps 4 and 5.

Sometimes, engaging the learner in a language-rich and responsive interaction (Step 6a) within an arranged environment (Step 5) will result in the learner demonstrating the target act. However, if the learner does not demonstrate the target act, behavioral techniques can be used to elicit the target behaviors (still within the context of an arranged environment and with a communicative partner who is using responsive interaction techniques). These behavioral techniques include modeling, mand-models, time delay, and incidental teaching. Charts below detail these practices (adapted from Hancock & Kaiser, 2006).

1. Teachers/practitioners select one of the following behavioral interventions to elicit the target act:

    a. modeling,

    b. mand-modeling,

    c. modified time delay, or

    d. incidental teaching.

Table 1 provides examples on how these behavioral strategies can be used throughout a preschooler's day to elicit the target act.

Modeling

Teachers/practitioners implement *modeling* by:

a. establishing shared attention,

b. presenting a verbal model,

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c. expanding the response and providing the requested material (if learner responds to the model correctly),

d. providing another model (if learner does not respond or is inaccurate),

e. expanding the response and providing the requested material (if the learner responds to the model correctly), and

f. stating the correct response and providing the material (if the learner does not respond or does not repeat the model correctly).

The following table illustrates how modeling can be used to teach a learner with ASD to use two-word utterances to request.

Table 3. Modeling Technique Example

Steps	Example
a. Establish shared attention	*Caleb and his daycare provider are playing with play dough.*
b. Provide a verbal model	*The daycare provider prompts Caleb, "Say, 'More play dough'."*
c. If the learner responds to the model correctly, expand the response and provide the requested material.	*If Caleb says, "More play dough," the daycare provider gives him more play dough and expands his utterance, "More green play dough, please!"*
d. If the learner does not respond or does not repeat the model exactly, provide another model.	*If Caleb says, "More," the daycare provider prompts him by saying, "Say, 'More play dough'." She stresses 'play dough'.*
e. If the learner responds to the model correctly, expand the response and provide the requested material.	*If Caleb says, "More play dough," the daycare provider gives him more and expands his utterance by saying, "More green play dough, please!"*
f. If the learner does not respond or does not repeat the model correctly, provide material and state the correct response.	*If Caleb does not respond or only responds partially (e.g., "More"), the daycare provider says, "More play dough" and gives Caleb the play dough.*

(Adapted from Hancock & Kaiser, 2006)

Mand-Modeling

Mand-model procedures incorporate a question, choice, or direction (mand) into the activity prior to initiating a modeling procedure.

Teachers/practitioners implement *mand-modeling* by:

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a. establishing shared attention;

b. providing a verbal direction (mand) or question;

c. expanding the response and providing the requested material (if the learner responds correctly);

d. giving another direction or model (depending on the learner's needs for support) if the learner does not respond or does not respond with a target;

e. expanding on the response and providing the requested material (if the learner gives the target response); and

f. providing the material and stating the target response (if learner still does not give the target response or repeat the model exactly).

Table 4 illustrates how mand-modeling can be used to teach a learner with ASD how to use two-word utterances.

Table 4. Mand-model Procedure Example

Steps	Example
a. Establish shared attention	*Sasha and her mother are having snack at the table where enticing snacks are located.*
b. Provide a verbal direction (mand) or question	*Her mother says, "Tell me what you want, Sasha" or gives a choice question, "Do you want apples or crackers?"*
c. If the learner responds correctly, expand the response and provide the requested material.	*When Sasha says the target response (i.e., "Want crackers"), her mother provides the crackers and expands her utterance by saying, "Want fish crackers, please!"*
d. If the learner does not respond or does not respond with a target, provide another direction or model (depending on the learner's needs for support).	*When Sasha points to the crackers instead of verbalizing, her mother prompts her by saying, "Say, 'Want crackers'."*
e. If the learner gives the target response, expand the response and provide the requested material.	*When Sasha repeats, "Want crackers," her mother provides the crackers and expands, "Want fish crackers, please!"*
f. If the learner still does not give the target response or repeat the model exactly, say the target response and provide the material.	*When Sasha says, "Crackers," which is not complete and at the target level, her mother says, "Want crackers," and provides crackers.*

(Adapted from Hancock & Kaiser, 2006)

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Modified Time Delay

The use of modified time delay, or waiting, before providing a verbal prompt allows learners to initiate the verbalization and encourages them to become aware of nonverbal cues.

Teachers/practitioners implement modified time delay by:

a. establishing shared attention;

b. waiting for the learner to make a request/comment;

c. expanding on the request/comment and providing the requested material/activity (if the learner initiates at the target level);

d. providing a mand or model, depending on the learner's need for support (if the learner does not initiate at the target level);

e. expanding on the response and providing the material (if the learner responds correctly);

f. providing the material and stating the target response (if the learner still does not give the target response or repeat the model exactly).

The following table illustrates how modified time delay can be used to teach a learner with ASD how to use two-word utterances to request.

Table 5. Modified Time Delay Technique Example

Steps	Example
a. Establish shared attention.	*His teacher is pushing John on the swing, facing him.*
b. Wait for the learner to make a request.	*The teacher lets the swing come to a stop. She waits, with her hands up as if to push, and has an expectant look on her face.*
c. If the learner initiates a request/ comment at the target level, expand the response and provide the request.	*If John says, "Push me!" the teacher says, "Push me really high!" and pushes the swing.*
d. If the learner does not initiate at the target level, provide a mand or model depending on the learner's need for support.	*If John grunts instead of verbalizing, the teacher can give a mand, "Tell me what to do, John," or give a model, "Say 'Push me'."*
e. If the learner responds correctly, expand the response and provide the material.	*If John says, "Push me!" the teacher says, "Push me really high!" and pushes the swing.*
f. If the learner still does not give the target response or repeat the model exactly, say the target response and provide material.	*If John does not respond or says, "Push," the teacher says, "Push me!" and pushes him on the swing.*

(Adapted from Hancock & Kaiser, 2006)

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Incidental Teaching

Incidental teaching can be used to help learners elaborate on requests they have made. The communicative partner manipulates the environment to elicit a request, and then uses a question to encourage an elaboration from the learner.

Teachers/practitioners implement incidental teaching by:

a. setting up the environment to encourage learners to request assistance or materials,

b. waiting for learners to initiate the request,

c. responding with a request for elaboration (if the learner initiates with the target response),

d. continuing to prompt for the elaboration until the learner responds appropriately, and

e. using model, mand-model, or modified time delay procedures, depending on the needs of the learner (if the learner does not initiate a request).

The following table illustrates how incidental teaching can be used to teach a learner with ASD how to elaborate on a two-word request (target act).

Table 6. Incidental Teaching Example

Steps	Example
a. Set up the environment to encourage learners to request assistance or materials.	*Ming's teacher knows she likes to play a fishing game. She places the game on the table, but does not put out the fishing pole.*
b. Wait for learners to initiate the request.	*Ming looks at her teacher and says, "Want pole."*
c. If the learner initiates with the target response, respond with a request for elaboration.	*Her teacher asks, "What kind of pole?" If Ming replies, "Fishing pole," her teacher can say, "That's right!" and provide her with the fishing pole. If Ming still replies, "Pole," then her teacher may prompt again for the elaboration.*
d. Continue to prompt (varying the level of prompting as needed) for the elaboration until the learner responds appropriately.	*If Ming still replies, "Pole," then her teacher may prompt again for the elaboration: "Tell me what kind of pole, Ming."*
e. If the learner does not initiate a request with the target act, use model, mand-model, or modified time delay procedures, depending on the needs of the learner.	*If Ming points at the pole or says, "Pole," her teacher can respond with the procedure that is most appropriate for Ming. In this example, her teacher provides a model, "Say fishing pole."*

(Adapted from Hancock & Kaiser, 2006)

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The strategies described in the above section also can be used with prelinguistic learners, with some modifications. Instead of expanding on a verbal response, the communication partner would map language onto the target act (i.e., linguistic mapping). Linguistic mapping can be used to pair language with any communicative attempt. If a learner points to a picture on the mantel (request for information), her mother can say, “That’s Grandma!” If a child pushes away her plate of noodles (protest), her father can say, “Oh! I don’t want spaghetti,” and remove her plate. One way to think of linguistic mapping is to say it “as your child would if he could” (Sussman, 1999, p. 208).

Here is another example of linguistic mapping:

> Jenna is in her playroom. Her mother is trying to get her to request by pointing. She has placed some of Jenna’s favorite toys in clear containers and put them on a shelf. She tells Jenna, “Show me what you want,” (mand model), and Jenna points to her pop beads. Jenna’s mother says, “You want pop beads,” (linguistic mapping) and hands her the beads.

Step 7. Using Data Collection to Monitor Learner Progress and Determine Next Steps

1. Teachers/practitioners collect data to evaluate the success of the intervention and to guide future decision-making.

Data should be gathered throughout naturalistic intervention, such as taking language samples and/or data on strategies that were used to elicit the target act. Because naturalistic intervention involves having the conversational partner engaged with the learner, it can be helpful to either a) video record the session and later collect data or b) have an observer take the data. However, online data collection may be possible and the teacher/practitioner should identify data collection measures and procedures that are feasible and efficient.

The example below shows how data could be gathered on the intervention, including routines in which the intervention was embedded, environmental modifications, and strategies that were used to elicit the target act.

Table 7. Example of Outcome Data Collection

Learner: Jason Target Act (TA): using words to ask for more				Person collecting data: Ms. C	
Date	**Activity/Routine**	**Environmental Modifications**	**Strategies Used (underline or circle)**	**TA? Y/N**	**Notes**
4-9	Snack	Snacks out of reach. Choices = chips, goldfish, apple, juice box, raisins	M **<u>Ma</u>** TD IT O	N	Off day? Had to provide model for him to request more
			<u>M</u> Ma TD IT O	Y	
			<u>M</u> Ma TD IT O	Y	
			M Ma **<u>TD</u>** IT O	N	
			<u>M</u> Ma TD IT O	Y	

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Date	Activity/Routine	Environmental Modifications	Strategies Used (underline or circle)	TA? Y/N	Notes
4-10	Snack	Same	M Ma **TD** IT O	N	Only ate chips today
			M **Ma** TD IT O	Y	
			M **Ma** TD IT O	Y	
			M Ma **TD** IT O	N	
			M **Ma** TD IT O	Y	
4-11	Free Choice – Pirate Legos	I held the bin of Legos & only gave three blocks at a time when asked	**M** Ma TD IT O	Y	Keesha playing with us at same time – each building their own thing
			M Ma **TD** IT O	N	
			M **Ma** TD IT O	Y	
			M Ma **TD** IT O	Y	
			M Ma **TD** IT O	Y	

M = Model, Ma = Mand, TD = Time Delay, IT = Incidental Teaching, O = Other

Examples of simple data collection procedures include:

- wrapping paper around one's wrist on which data can be tallied, allowing adults to move around the teaching space without having to carry data collection sheets.
- placing data collection sheets around the teaching space so that they are available regardless of where the learner goes.
- gathering data from multiple students on address labels that can later be peeled off and put on individual students' data sheets. Teachers/practitioners will avoid having to shuffle through multiple data sheets as they interact with a classroom of students.

References

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Table 1. Embedding Natural Intervention within Daily Activities

Daily Activity/ Routine	**Goals**	
	Goal 1. Using 2-3 word utterances to request	**Goal 2. Labeling body parts**
Coat Hook Routine	*Activity:* Adults can forget to bring necessary items (shoes to replace his boots) to assist student. *Intervention:* Use modified time delay and mands to encourage request. • Wait (modified time delay) to see if Brian requests his shoes independently. • If not, provide a mand: "Tell me what you need, Brian," in order to prompt for the response: "my shoes."	*Activity:* Removing coat, etc in the morning. *Intervention:* Use mands (commands/prompts) and time delay to elicit labels for body parts associated with clothing items. • Adult asks, "Are these your hands or feet?" as Brian removes his mittens. Brian responds, "Hands." • Adult comments, "I see your ____," as Brian removes his boots. Brian responds, "Feet."
Circle Time	*Activity:* Include "requests" into daily classroom assignments during circle time. *Intervention:* Provide models to encourage Brian to use a two-word utterance to make these requests. • Encourage the daily "weather person" to ask a friend to walk with them to the window by requesting, "Help me, please." • Letting the "friend counter" request a specific pointer for counting, "Red pointer, please".	*Activity:* Include songs involving body parts in the class's repertoire. *Intervention:* Use modified time delay to encourage Brian to fill in the missing word during your pause • During the Hokey Pokey, use time delay and encourage Brian to fill in the missing word during your pause. Adult sings, "You put your ____" (and places arm out) and calls on Brian. Brian responds, "Arm in!" *Activity:* Dress a toy bear as part of the daily weather report. *Intervention:* Probe with choice questions about where clothing goes on the bear. • After the class decides to do so, adult places sandals on the bear. Adult asks Brian, "Where are the bear's sandals…on his feet or head?" Brian responds, "Feet!" • If Brian does not respond or gives an incorrect response, adult provides a model: "On his feet! Say *feet*."

Module: Naturalistic Intervention

Daily Activity/ Routine	**Goals**	
	Goal 1. Using 2-3 word utterances to request	**Goal 2. Labeling body parts**
Morning Snack	*Activity:* Offered choices at snack time are kept out of reach but in sight. *Intervention:* Adult uses mand to elicit request. Models two-word utterances when response is a single word utterance. Modified time delay is used to elicit request for more. • Adult says, "Tell me what you want." If Brian replies with a single word ("cookie"), adult models two-word utterance: Say *cookie, please*." • Adult gives only a small serving of requested snack (e.g., two goldfish crackers). Wait for Brian to request more. Model the two-word phrase if he uses a single word to request: "Say *more please*."	*Activity:* The group talks about body parts that are used for eating. *Intervention:* Adult uses modified time delay to encourage Brian to fill in to appropriate body part. • Adult: "Brian, for chewing I use my ____." Brian responds, "Teeth!" • If Brian does not respond with the target, use a question paired with the visual example of chewing: "Brian, what am I chewing with?"
Free Choice	*Activity:* Favorite toys are placed out of reach, but in sight. *Intervention:* Adult waits for Brian to make a request (time delay). If Brian uses a single word or gesture, adult provides a model. • Brian says, "Trains!" Adult responds, "You want the trains! Say *trains please*!" *Activity:* Certain activities require a partner. *Intervention:* Adult models a request to play for Brian. • Adult walks with Brian to a peer. Adult says, "Brian wants to play with you. Brian, say '*Play with me?*" Brian responds, "Play with me?"	*Activity:* Dolls are available in the "Doctor's Office" pretend play area. *Intervention:* Adult uses mands in order to prompt Brian to label body parts as he fixes the doll's injuries. • Brian is placing a band-aid on the doll's belly. Adult asks, "Brian, tell me where you're putting the band aid." Brian looks at doll and responds, "Belly."

Module: Naturalistic Intervention

Daily Activity/ Routine	**Goals**	
	Goal 1. Using 2-3 word utterances to request	**Goal 2. Labeling body parts**
Lunch	*Activity:* Milk choices are placed out of reach. *Intervention:* Adult asks Brian what kind of milk he wants and uses incidental teaching to expand the request. • Brian says, "Milk please." Adult responds, "What kind of milk?" Brian responds, "Chocolate milk please!"	*Activity:* Cleaning up after lunch *Intervention:* Adults uses a mands to have Brian label body parts while he cleans up. • As Brian wipes his mouth and hands, adult says, "Brian, tell me what you're wiping." Brian responds with the appropriate label.
Outside Play	*Activity*: Sand toys are withheld until verbally requested. *Intervention:* Adult holds sand toys out with an expectant look on her face and waits for Brian to request. • Brian says, "Please." Adult models the two word phrase, "Say *digger please*." Brian responds appropriately.	*Activity:* Pouring sand on Brian's arms, hands, and legs in the sandbox: a familiar and enjoyed activity. *Intervention:* Adult uses mands (command/prompt) to have Brian label body parts. • Brian sticks his hand out, toward the pouring sand. Adult says, "Tell me where to pour it, Brian." Brian responds, "My hand!" They do the same for legs and arms.
At Home: Driveway Play	*Activity:* Play with bikes, scooters, sports equipment, all of which are hung out of reach *Intervention:* Adult uses mand-model to elicit the request. • Adult says, "Tell me what you want, Brian." Adult pauses, allowing Brian to respond, "My bike!" • If Brian responds with a single word or a gesture, adult provides a model, "Say *my bike please*!"	*Activity:* Tracing Brian's body on the driveway with chalk *Intervention:* Adult asks choice questions to elicit the labels. • As the adult and Brian color in the outline, the adult can ask, "What are you drawing now, Brian, your eyes or your nose?" Brian responds, "My eyes!"
At Home: Bath Time	*Activity:* Playing with foam soap. Adult squeezes a small amount onto Brian's hands when requested. *Intervention:* Adult uses modified time delay to elicit the request. • Adult waits expectantly while Brian plays with the foam soap. When it is gone, adult holds up the container and waits for him to request, "More please!"	*Activity:* Washing up during the bath *Intervention:* As Brian washes different body parts, adult asks for the label and waits for Brian's response. • Brian uses the washcloth on his leg. Adult asks, "What are you washing?" Brian looks at himself and responds, "Leg!"