Best Instructional Practices Manual

A guide for professionals developing instructional plans for adults with autism

pennsylvania
DEPARTMENT OF HUMAN SERVICES

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1/18/23

Although this guide was initially developed for those responsible for developing instructional plans for adults *with autism,* it is general enough to be used to develop instructional plans for anyone.

It should be utilized as a tool in assessing for needs, planning for instruction, skill building, and evaluating progress. It not only highlights specific Best Instructional Practices, but also stresses where these practices are applicable when supporting an adult with autism. In an effort to emphasize these Best Instructional Practices, an example of a young woman diagnosed with autism is embedded throughout the guide.

The Importance of ABA

Support and instruction in all services provided to adults with autism should focus on the participant. This means effectively teaching meaningful and functional skills in inclusive settings, while promoting self-determination and independence. Best Instructional Practices that support this philosophy include individualized assessment and systematic planning, as well as the provision of instruction that is data-based, collaborative, and grounded in **Applied Behavioral Analysis** (ABA).

ABA includes the design, implementation, and evaluation of environmental modification, using behavioral stimuli and consequences to produce socially significant improvements in human behavior, or to prevent loss of attained skill or function.

The dimensions of Applied Behavioral Supports include:

- *Applied*: the behavior / skill has social importance and significance to the individual
- *Behavioral*: the behavior is observable and measurable
- *Analytic*: a functional relationship that exists between the environment and behavior
- *Technological*: *the strategies* of support and intervention are clearly detailed for all to understand and use
- *Conceptually Systematic*: the strategies of support are based on proven behavioral principles
- *Effective*: the strategies produce a change that is socially significant to the individual
- *Generality*: the change in the behavior or skill lasts over time and/ or is exhibited or spread to other environments/ settings not directly addressed/ treated by the interventions

Assessment

Many standardized assessments are used to determine a participant's current level of daily functioning (also called the baseline). However, understanding a participant's needs should ultimately be determined through a person-centered, ecological process, and may include an informal assessment process (e.g., observation).

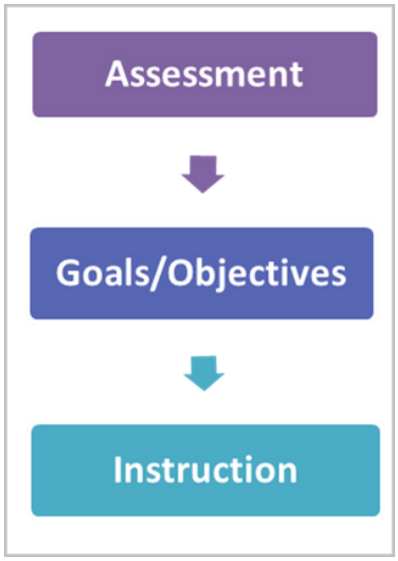
An assessment should give a "snapshot" of the participant's abilities in relation to their particular skills and is a tool for informing baseline and instructional planning.

Prioritizing Goals and Objectives

Services should be designed to assist the participant in meeting their desired goals and needs. In order to accomplish this, it is recommended that providers develop goals and objectives as a form of measurement to meet these expectations.

When going through this process, it is important to consider key factors that can affect the outcomes and the prioritization of the goals and objectives.

Throughout the process, providers should:



1. Gain an understanding of the participant's needs in the context of their daily environments, based upon the participant's priorities, future vision and desired outcomes.
2. Use a person-centered process that:
    a. are mindful and respectful of the participant's and the team's priorities
    b. balances the targeted needs for support from informal and formal assessments
    c. ensures that the final outcome is a solid indication of what the participant and the team believe are important for the participant in current and future circumstances (e.g., wanting a job, wanting to live in an apartment with a roommate)
3. Acknowledge that planning for, and implementing, instruction should be ecologically based and specific to the participant's desired environments and situations
4. Be mindful of natural opportunities to practice and acquire new skills

Once priorities have been established, it is possible to develop sound goals and objectives that will then drive instructional planning.

Goals & Objectives

Goals are global statements that are typically written as an annual measure. Once goals are prioritized as an outcome of the assessment process, it is important to identify these skills in measurable, observable means that can be used to instruct the participant in the mastery of the skill, and to monitor progress.

EXAMPLE OF A GOAL

Adina's goal related to her need for support in purchasing is:

GOAL PHRASE: Purchasing

GOAL STATEMENT: Adina will use the ext dollar strategy (i.e., using single dollar bills to pay by adding ad additional dollar to account for the change.)

Objectives reflect benchmarks or steps towards a goal and contain three components:

a. ***Condition:*** *W*hen/where this objective will take place?
b. ***Behavior:*** *W*hat's expected of the participant?
c. ***Criteria:*** How well must the participant must perform the skill for the objective to be met?

EXAMPLE OF AN OBJECTIVE

CONDITION: When shopping at the grocery store with a wallet containing a number of one-dollar bills

BEHAVIOR: Adina will use the next dollar strategy (i.e., using single dollar bills to pay by adding an additional dollar to account for the change)

CRITERIA: with only one instructor prompt for 3 out of 4 grocery trips for 12 consecutive weeks.

It is important that the goals and objectives developed encourage the participant to actualize their desired outcomes.

Once goals and objectives are determined and written, instructional plans and strategies will need to be developed. Specifically, this includes the development of the supports that are needed to assist the participant in reaching the goal/objective. Grounded in ABA, a specific, planned method by which to present a new skill and encourage skill building is warranted. This plan should be communicated to all persons supporting the participant, including the family.

Prompting

Prompts are a way to provide assistance to the participant. Natural and instructional prompts should be determined based upon:

a. The participant's abilities,
b. the participant's needs
c. and the setting

Examples of natural prompts/cues to encourage the desired behavior or skills:

- A bell ringing to signal the end of class
- Cashier stating the purchase total
- A conversation initiated by an employee

Some participants may also need initial support in the form of instructor prompts. However, natural prompts are optimal to condition a behavior to promote independence and decrease dependence on the instructor.

Regardless of the type of prompt used for instructional planning, one must know:

a. which is the most intrusive prompt that the participant may need to elicit the desired behavior, and
b. which is the least intrusive prompt that may elicit the behavior.

Examples of Prompts:

- *Gesture:* Point to the button to be pushed
- *Indirect Verbal: A*sk the participant what to do next
- *Direct Verbal:* Tell the participant to push the button
- *Model:* Push the button while the participant observes
- *Permanent:* Place a sticker on the appropriate button
- *Physical:* Physically assist the participant to push the button

Ideally, a **prompting hierarchy** listing the most to the least intrusive prompts and all prompts necessary in between, is used when providing assistance to the participant.

Ultimately, giving the participant any and all chances for performing the required skill without instructor support (unless in situations where safety is an issue) is optimal.

Exception: In dangerous situations, such as teaching cooking skills or crossing the street, the most intrusiveprompt should be used first to ensure the participant's safety

In addition to the type of prompt(s) used, before beginning the skill, it should be decided when a prompt should be given and when to fade the selected prompts. A provider should always be considering when more intrusive instructor prompts can be decreased to allow for more independence. Typically, fading of prompts is determined by a participant's progress with a particular skill.

For example, when beginning instruction of a skill, a direct verbal prompt may be necessary. Instruct the participant to "Say hello to Sam." Over time, when it is noted that the participant is independently saying"hello" in more occurrences, it would make sense to begin fading to a less intrusive prompt such as an indirect verbal prompt (e.g., ask the participant, "What should you say?") using latency between the prompts.

NOTE: It is important that the participant is given sufficient opportunity to perform the behavior or skill without a prompt or using a less intrusive prompt. This encourages a participant to become less prompt-dependent and better equipped to perform the skill without instructor prompting.

Below is a more detailed example of how prompting could look in practice.

EXAMPLE OF USING A PROMPTING SYSTEM

Since Adina never used the next dollar strategy, the provider decided that she should be taught at the grocery store. There, they would be using the cashier's statement of purchase total as the initial natural prompt. Using a least to most hierarchy, once the initial prompt was given, an eight-second latency was applied to allow Adina to engage in the next dollar strategy to pay for her purchase.

If she did not begin counting her dollar bills (indicative of the dollar amount of the total and the first step to using the strategy), the instructor would use an indirect verbal prompt (e.g., "Adina, what should you do?"). Again, an eight-second latency would be applied in hopes that Adina would count out the dollar. If she did, the latency would be applied again prior to her beginning the next step (e.g., giving a dollar to indicate the change of the total). If she did not count out the dollar after 8 seconds, the next intrusive prompt (a direct prompt, "Adina, give the cashier 6 dollars") should be applied. The skill sequence would continue like this using the prompting system that was predetermining by the instructor and until Adina paid for her purchase.

The example above illustrated four effective uses of prompting:

1. The instructor determined the types of prompts, the prompting hierarchy and the latency based upon an assessment about Adina and her abilities and needs.
2. The intent of the instructional plan was to fade intrusive prompts and rely on natural prompts in the natural environment.
3. Instruction was occurring in the natural setting rather than in a contrived, simulated setting to encourage maintenance and generalization of this skill.
4. Use of the cashier's statement of purchase totals the initial natural prompt was an effective use of naturally occurring, stimuli and was an effective strategy to discourage reliance on instructor prompts.

NOTE: There are no rules regarding the length of the specific latency before prompting the participant to engage in the behavior or skill and how to fade the prompts that are used. This is individualized and depends on the participant, the skill being taught, and/ or the setting. Skill building is heavily reliant on the team's ability to adjust their methods based upon the participant's progress (i.e., data).

Responding to Behavior:
Reinforcement & Error Correction

In addition to making decisions regarding prompts, it is also important to proactively determine responses to the participant's desired and undesired behavior. Systematic planning is needed so that all instructors who support the participant are consistent with instruction, leading to increased independence for the participant.

It is important to provide **reinforcement** to desired behavior so that continued use of the desired behavior is encouraged. Reinforcement is individualized and specific to each person. Understanding what is rewarding to the participant is vital, as is being mindful of what is age appropriate and **socially validated** in the context of instruction. When learning a new skill, reinforcement should be given often and immediately. As the participant learns the skill, the reinforcement should be faded and given on a more variable schedule (e.g., every third or fourth correct response).

As with prompting, fading of reinforcement will also ensure that the participant not become conditioned by the instructor's use of reinforcement, and instead becomes motivated by the natural reinforcement.

Similar to the purpose of reinforcement, it is also important to appropriately respond to someone when they make a mistake when learning a new skill. Doing so is providing **error correction.**

Examples of natural forms of reinforcement:

- Desired social interaction with a co-worker
- A favorite game that was purchased
- A paycheck

To determine the correct response to a mistake or undesired behavior, keep in mind that the intention should be to promote future instances of the desired behavior. An error correction strategy could be implemented through written or verbal communication; regardless, it is crucial to keep the response simple, using short words or gestures, guiding the participant to the corrected response.

Resorting to a more intrusive prompt is a form of error correction, as is withholding any type of reinforcement. When implementing one of these strategies, use it as a learning opportunity for the individual and draw their attention to the positives along with the errors that had occurred. Overall, prior to beginning instruction, determining the specific way to respond to errors and desired behavior is greatly dependent on the participant, the skill, and the setting.

NOTE: Remember, "what may be reinforcing to one person may not be reinforcing to another. Furthermore, what may be reinforcing for someone one day may not necessarily be reinforcing to the same person at a different time, or under different circumstances."

EXAMPLE OF USING A PROMPTING SYSTEM WITH REINFORCEMENT

Since Adina does not give the cashier the 6 dollars (indicative of the dollar amount of the total and the first step to using the strategy) after the 8-second latency, the instructor would not reinforce her and would simply move to the next level of prompt. On the other hand, if Adina had given the cashier the 6 dollars, the instructor would have patted Adina on the back and said,"Excellent" quietly in Adina's ear.

Task Analysis

Breaking down instruction and collecting data on progress through task analyzing the skill is a useful tool in instruction and monitoring progress. **Chained tasks or routines** can be broken down into many parts and displayed in a task analysis form. Adina using the next dollar strategy is an example of a chained task (Appendix A).

Putting these chained tasks and/or routines into a task analysis form not only organizes instruction for the support staff and keeps everyone who supports the person consistent, but also allows for the collection of data for monitoring and evaluation of progress. Since the task analysis breaks a skill into smaller parts, analyzing and determining where more or less instruction is needed with the skill can be easily identified.

Examples of chained tasks:

- Washing dishes
- Making a sandwich

Examples of routines:

- Getting ready for work
- Going to the doctor
- Going to the grocery store

Included in the task analysis are:

1. the steps that make up the chained task or routine
2. the prompting system used to complete each step
3. the criteria for that skill or indication when mastery was met
4. instructional decisions made based upon the data
5. a record of prompts and/ or independent correct responses (the participant's performance on each step of the targeted and specific instruction and analysis of performance)

Overall, task analyses can be used to assess baseline, and instructional progress that has been made (see Appendix A).

Generalization & Maintenance

Two final important considerations in developing instructional programs and plans are the ability to use the skills across varied situations (**generalization**) and the ability to retain the knowledge and to use the skill over time (**maintenance**).

Generalization

Often, individuals with autism struggle to apply new skills in the presence of different stimuli or new situations (e.g., environments, materials, etc.). Therefore, it is important to be aware of, and plan for, generalization. There are many strategies that can be implemented during instruction that promote generalization. For example, varying instructors, materials, and environments are basic ways of to increase a participant's ability to make generalizations.

In addition to using multiple variations during instruction, it is also important to explore beyond the instructional situation. Many instructional strategies can be applied to promote generalization and should be considered. If generalization is not examined, the participant may only be able to apply the skill learned in the setting or environment in which it was taught, thus hindering the goal of increased independence.

EXAMPLE OF A GENERALIZATION

When teaching Adina to use the next dollar strategy, instruction can take place in several different stores with various staff across instructional sessions.

Using this strategy would not only increase her likelihood and ability to use this strategy in novel and different settings, but may also decrease her reliance on a specific staff person.

Maintenance

Another consideration is assisting an individual to maintain the skills that they have learned over time. Maintenance is not automatic for most individuals and if specific attention is not given to an individual's ability to maintain a skill, that skill may be forgotten or lost. Similar to programming for generalization, there are many ways to increase the likelihood that one will maintain skills learned over long periods of time.

Evaluation & Monitoring

A few instructional strategies that can be used to prompt maintenance of a skill include:

- Systematic review and practice of a skill (e.g., planning for multiple opportunities for conversation)
- Teaching the individual to self-monitor their behavior (e.g., checklist for a morning routine)
- Using permanent prompts (e.g., colorcoding microwave buttons)
- Shifting reinforcement from instructor directed to natural (e.g., praise from a co-worker)

It is important to analyze whether the participant's desired behavior is increasing, decreasing or not changing (flat) over time. Systematic collection of data will provide important information that can aid in making these instructional decisions. This ongoing data collection helps to make informed decisions regarding whether or not to continue, discontinue, or change the strategy or skill you are teaching.

Regardless of the means to collecting data on progress, it is very important to:

1. compare the participant's baseline (or pre-instruction) behavior skills to progress after instruction has begun
2. assist in making decisionsas to how to proceedwith instruction based on the data that was collected

Data should be collected often and across a sample of instructional opportunities or events, paying particular attention to recording the type of instructional support or prompts needed. Furthermore, data should be analyzed on an ongoing, consistent basis in an effort to inform instructional decisions (see Appendix B).

EXAMPLE OF DATA ANALYSIS

After collecting several days of data for Adina's purchasing skill, the instructor noted that Adina's progress towardsmastery was decreasing. Upon analysis, the instructor noted that Adina was having difficulty following the initial prompt from the cashier and was not waiting for her change. The instructor determined that she needed to change her instruction to bring Adina's attention to the total amount on the cash register (in addition to the cashier's verbal prompt for the total). In addition, the instructor determined that she needed to motivate Adina to remember to wait for her change. The instructor and Adina began collecting the change that she received from using the next dollar strategy in a jar at home to cash in and buy her favorite movies. (See attached task analysis and graph of Adina's progress)

Making Instructional Decisions

The data collected is only valuable if something is done with it. This is why analysis of the data needs to occur on a continued basis in order to determine the direction of the strategy. For instance, if the behavior is increasing and the participant is acquiring the skill, no changes should be made to instruction. On the other hand, if the desired behavior is decreasing or not changing, instruction should be modified based on a close analysis of the particulars of the errors being made and parts of the skill that may be problematic for the participant.

Conclusion

We know that thoughtful, systematic instructional planning, grounded in ABA, increases success of skill acquisition and fluency. Consideration of the important components discussed in this manual is warranted.

In summary, remember that the key parts in a participant's success in learning new skills is dependent on:

1. thoughtful development of the instructional plan
2. consistent implementation of the plan by all parties within the team
3. ongoing analysis of data
4. data-based instructional decisions

If after continued analysis of data, you are still unsure of what to do next…

- Improve motivation
  - Increase choice
  - Vary reinforcers
  - Encourage self-monitoring
- Improve/change antecedents, environment
  - Simplify instruction
  - Change materials
  - Use alternative strategies
- Change staff delivery of skills

GLOSSARY
OF TERMS

**Listed in the order referred to throughout the manual*

Applied Behavior Analysis (ABA)

A scientific approach for discovering environmental variables that reliably influence socially significant behavior and for developing a technology of behavior change that takes practical advantage of those discoveries.

Ecological Process

Treatment and intervention grounded in an understanding of the conditions of the environment in which the skill or behavior are applied are 'ecologically based.

Baseline

The participant's performance prior to instruction.

Goals

Long-term, broad statements that present the long-term expectation of the desired skill the individual wants to achieve.

Goal Phrase

A short, specific statement of what the goal is about.For instance, “Initiating Conversation”.

Goal Statement

Further defines the goal phrase and is also the same as the behavior component in the Objective.

Objectives

Appropriate steps to reach the long term goal that are clearly linked to the needs identified within the individual’s Individual Support Plan.

Condition

The environment or situation where the participant is to perform the expected behavior. This should focus on the natural situation or cue.

Behavior

Explains what is expected from the participant, and is written in observable, measurable terms.

Criteria

The measurement for the behavior that contains the prompts, how often the behavior is to occur, and for how long the behavior is to occur, in order to meet mastery of the skill.

Prompts

A way for a person to provide assistance to the participant, triggering them to complete a certain task or behavior.

Latency

The amount of time it takes for the participant to complete the behavior or task; the time starting when the prompt is provided.

Prompting Hierarchy

Further defines the goal phrase and is also the same as the behavior component in the Objective.

Fade

Consistently decreasing prompts until they are no longer needed for an individual to complete an expected skill or behavior.

Reinforcement

A type of stimulus that is presented immediately following a behavior to increase the probability of the behavior occurring again in the future.

Socially Validated

Compliance in a social activity to fit in and be part of the majority.

Error Correction

A strategy utilized for addressing incorrect responses in order to encourage the desired behavior.

Chained Tasks or Routines

A way of teaching a new skill using a Task Analysis that presents multiple smaller steps that link together, and ultimately complete the desired behavior; these can be broken down forwards or backwards.

Generalization

An individual is able to complete a new skill in other settings and situations other than where the skill was originally taught.

Maintenance

an individual is able to complete the desired behavior over time, after the behavior procedures have been removed or stopped.

Data Analysis

Reviewing and examining data collected on a specific behavior in order to evaluate its effectiveness and determine next steps in instruction.

APPENDIX A: **Task Analysis**

Prompts Coding System
+ = Correct DV= Direct Verbal
IV= Indirect verbal P= physical
(8 second latency)

Name: Adina
Skill: Next Dollar Strategy

Mastery: one instructor prompt and 75% independence for 4/4 grocery trips.

Task Analysis	Date																	
	1/4	1/7	1/11	1/14	1/16	1/18	1/20	1/22	1/24									
6. Take items	-	-	+	+	+	+	+	+	+									
5. Hold hand out for change	-	-	-	DV	DV	P	P	DV	DV									
4. Give one extra dollar for change	-	-	-	+	+	IV	+	IV	IV									
3. Hand dollars to cashier	-	-	-	IV	IV	IV	+	IV	IV									
2. Get wallet out of purse	-	-	-	DV	IV	IV	IV	IV	IV									
1. (After cashier states total) Count out dollars for total	-	-	-	DV	DV	DV	DV	DV	DV									
	Baseline			Instruction														
Independent Correct:	0	0	17	33	33	17	50	17	17									

Date of Decision	Data Period	Trend/Mean	Instructional Decision
1/11: Baseline	1/4-1/11	Insufficient data	Begin instruction
1/24	1/14-1/24	Decreasing trend	Modify step 1 (look at total) and increase motivation for step 5 (savings plan for change)

* see graph of data on next page

APPENDIX B: **Graphing**

DATA
Sally: Next Dollar Strategy