Module: Functional Behavior Assessment

Steps for Implementation: Functional Behavior Assessment

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Teachers/practitioners often conduct a functional behavior assessment as a first step in trying to understand why a learner with ASD may be engaging in interfering behaviors. As the function of the behavior becomes apparent, teachers/practitioners develop interventions to reduce the occurrence of the interfering behavior in question. Often, teachers/practitioners use functional communication training (FCT), differential reinforcement, response interruption/redirection, extinction, and stimulus control/environmental modification to address these behaviors in learners with ASD. When developing intervention plans, teachers/practitioners should refer to the specific briefs for these practices to access the steps for implementation as well as the implementation checklists.

When planning for and implementing a functional behavior assessment (FBA) with children and youth with ASD, the following steps are recommended.

Step 1. Establishing a Team

In Step 1, a multidisciplinary team is established to provide a variety of perspectives about the interfering behavior that a particular learner with ASD is exhibiting. Members of the team should include all individuals who have observed the interfering behavior demonstrated by the learner with ASD over an extended period of time in a variety of settings and conditions.

1. A multidisciplinary team is formed that includes:

    a. *the learner's teachers*: special education, general education (if the learner spends any part of the day in an inclusive setting). The teachers who are members of the team should be from classes where the interfering behavior occurs.

    b. *any related service personnel*: speech-language pathologist, occupational therapist, behavioral therapist, psychologist, etc. These individuals should be included if they have regular involvement with the learner with ASD.

    c. *paraprofessional(s) that work directly with the learner with ASD*. These individuals often have extended interactions with learners with ASD and may spend the most time with them on a daily basis.

    d. *the learner's parents*. Parents should be included because they are most knowledgeable about their child's behavior across settings and situations.

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e. *the learner with ASD (if developmentally appropriate)*. Learners with ASD may provide valuable information about their behaviors, perceptions, and reasons why a particular behavior may be occurring.

2. Team members identify one person to be the FBA coordinator.

Team members decide who will be the team coordinator during the FBA process. This person coordinates and manages data collection efforts, answers questions from and stays in touch with other team members, and ensures that the FBA is being implemented as intended. Possible team members who might assume this role include an autism services coordinator, special educator, speech-language pathologist, or occupational therapist. The FBA coordinator should have training and experience in conducting FBAs.

Step 2. Identifying the Interfering Behavior

In Step 2, members of the multidisciplinary team identify the interfering behavior that will serve as the target of the assessment and intervention strategies. Interfering behaviors include disruptive or repetitive behaviors that interfere with optimal development, learning, and/or achievement.

1. Team members identify the interfering behavior that is most problematic for the learner that will serve as the focus of the FBA.

If more than one interfering behavior is occurring on a regular basis, team members must decide which behavior will serve as the target for the FBA. Any behaviors that involve safety should be addressed first. The following questions also may be helpful when deciding which behavior should be the target for intervention:

- Is the behavior dangerous to the learner or others?
- Does the behavior interfere with learning (e.g., academic, social)?
- Does the behavior interfere with socialization or acceptance from peers?
- Is the behavior disruptive or intense on a frequent basis?

2. After identifying the interfering behavior, the team determines:

   a. *how long the behavior has been interfering with the learner's development and learning*.

   b. *if the behavior involves aggression or damage to property*.

   c. *if the behavior might be the result of environmental factors* (e.g., lighting, noise level). For example, what is unique about the environment(s) where the behavior does **not** occur? What is unique about the environment where the behavior **does** occur? Does the behavior occur more often under a specific set of circumstances (e.g., during transitions, in the hallway)?

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d. *if the interfering behavior might occur because learners are being asked to demonstrate a skill that they cannot perform (e.g., language/ communication, social)*. For example, does the learner not know how to use skills needed in a particular setting or activity? Or is the learner able to use needed skills, but not consistently?

e. *when and where the behavior is occurring*. For example, what is different about the environment(s) where the behavior does occur (e.g., number of other students at the activity, time of day)?

f. *other behaviors the learner exhibits immediately before the behavior occurs* (antecedents).

g. *what happens immediately after the interfering behavior occurs* (consequences).

Step 3. *Collecting Baseline Data*

Step 3 focuses on collecting data from multiple sources to better understand the interfering behavior prior to designing and implementing an intervention strategy. Although collecting baseline data is an essential feature of FBA, data collection is important throughout the FBA process because it helps teachers/practitioners define the behavior, record what the learner is currently doing, and evaluate the outcomes of the intervention plan.

1. Prior to designing and implementing an intervention, teachers/practitioners use indirect assessment methods that include:

   a. *reviewing previous and current records*. The purpose of record review is to gain insight into the learner's current behavior by looking at previous reports or assessments that might include: medical reports, psychological evaluations, speech and/or occupational therapy assessments, educational testing, IEP/IFSP, incident reports/disciplinary action reports, and anecdotal reports.

   b. *conducting formal and informal interviews with school staff, family members, and the learner with ASD (if appropriate)*. Team members, particularly the FBA coordinator, conduct both informal and formal interviews to gather information about the behavior from multiple perspectives. At least one of the following tools is used during this process:

      - **The Functional Assessment Screening Tool (FAST; Iwata & deLeon, 1995)**. This tool is used to determine the potential causes of the behavior. With the FAST, raters are asked to answer 18 yes/no questions. Scores are added up and placed into four likely categories of function ranging from social reinforcement (attention) to automatic reinforcement (pain attenuation).

      - **Problem Behavior Questionnaire (PBQ; Lewis, Scott, & Sugai, 1994)**. This questionnaire is used to determine the potential function of the behavior (e.g., access to peer attention, access to teacher attention, setting events). With the

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PBQ, raters answer 15 items and indicate the frequency with which the behavior is observed.

- **Questions about Behavioral Function in Mental Illness (QABF-MI; Singh et al., 2006)**. This questionnaire helps raters determine the potential function of the behavior (attention, escape, non-social, physical, tangible). With the QABF-MI, raters answer how often the behavior occurs.

- **Functional Assessment Interview (FAI; O'Neill et al., 1997)**. This questionnaire can be used to interview teachers, parents, and other school/community staff. The FAI takes approximately 45-90 minutes to administer and provides the following outcomes: description of the interfering behavior, events or factors that predict the behavior, possible function of the behavior, and summary statements (behavior hypothesis).

- **Student-Directed Functional Assessment Interview (Student-FAI; O'Neill et al., 1997).** This interview is used with learners with ASD who can reliably report on their behavior. It takes approximately 20-40 minutes to conduct an interview by a member of the team who has no negative history with the learner.

The next step in the process is to collect observation-based data on the occurrence of the interfering behavior. Prior to collecting baseline data, however, teachers/practitioners clearly define the interfering behavior so that it can be observed easily.

2. Team members clearly describe the interfering behavior and identify data collection measures that will be used to assess the interfering behavior prior to designing and implementing an intervention.

During this step, it is critical that all team members agree on definitions of the behavior and the data collection measures that will be used during the baseline data collection phase of the FBA (i.e., data collected before the intervention is designed and implemented). For example, if the behavior is "John talks during English class," the team needs to come to a consensus about what "talks during English class" means. Does it mean any talking? What if John talks quietly during class? By clearly identifying the behavior, team members will be able to collect baseline data that are accurate and reliable.

Example: John talks loudly during English class when the teacher is instructing the entire class.

This behavior involves several aspects – how often he talks during instruction, how loudly he talks during instruction, and perhaps how long his statements are (duration).

Baseline data on the interfering behavior are gathered in locations and at times when the behavior appears to occur most often; however, it also is sampled in other locations or at other times. Determining both when and where the behavior occurs as well as when and where it does not occur will help teachers/practitioners focus the assessment on what happens before and after the behavior. For example, a team might determine that John talks so loudly during

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English class that the teacher is unable to instruct the rest of the class. As a result, the English teacher and other relevant team members should focus their data collection efforts on this behavior during this particular class to determine its potential causes.

3. Team members determine how long baseline data should be collected and who will collect it.

During the baseline phase, it is important to collect data for a sufficient period of time to identify consistencies in the behavior. Team members should decide how long data will be collected (e.g., several 15 minute periods per day for three days, one week, two weeks), and what will happen if an insufficient/inadequate amount of data are collected during baseline (e.g., redesign the data collection method, observe at a different time).

Team members also must decide who will collect the initial baseline data. For example, it might be easiest for a paraprofessional to collect data across the day. The team also may decide that it would be easier to have an objective observer collect data rather than the classroom teacher who is teaching lessons. Team members also should consider family involvement. For instance, is it possible for family members to collect data at home and in the community? These data will be particularly useful if the behavior is occurring in these settings as well. The decision about who will collect data should be individualized and based on the needs and resources of each team. If more than one team member collects data, they should observe at the same time to be sure that they are coding the behavior in the same way.

4. Teachers/practitioners use direct observation methods that generally include:

   a. *using A-B-C data charts*. A-B-C data charts help team members determine what happens right before the behavior (the antecedent), the behavior that occurs, and what happens directly after the behavior (the consequence). These data provide insight into why the learner may be engaging in a particular behavior. The following is an example of an A-B-C data collection chart.

A (Antecedent) (describe the activity and specific events preceding the behavior)	**B (Behavior)** (describe exactly what the behavior looked like)	**C (Consequence)** (describe events that followed or results of the behavior)
Joe was told to line up for math class.	Joe hit a peer in line.	Joe was moved to the end of the line.
Joe was told to line up for lunch.	Joe pulled a peer's hair.	Joe was moved to the end of the line.

   b. *using scatterplots*. Scatterplots help team members determine:

      - the possible functions of the behavior.
      - when the behavior is occurring.
      - times of the day when an intervention might be implemented to reduce the interfering behavior.

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The following example illustrates how a scatterplot can be used during the FBA to identify when and where the behavior is occurring. The gray boxes marked with "Xs" indicate that the behavior occurred at that particular time on a particular date.

Time	Activity	Date						
		8/22	8/23	8/24	8/25	8/26	8/27	8/28
9:15	Reading (independent work)			X	X			
9:30	Reading (small group)					X		X
10:00	Science (whole group)	X					X	
11:30	Lunch							
12:15	Recess	X X	X X	X	X		X	X
1:00	Math (whole group)		X			X		

The chart can then be used to identify patterns of behavior. For example, the above scatterplot indicates that this learner with ASD exhibits the interfering behavior most consistently during recess. Therefore, this might be a time when an intervention could be implemented to reduce the interfering behavior. It is important to note that scatterplots used in FBA are different from those used by researchers when conducting statistical analyses. FBA scatterplots are used to identify patterns of behavior and are helpful in determining when interventions can be implemented.

c. *using standardized behavior rating scales*. These types of rating scales provide a standardized form to observe learner behavior. One example is the Functional Assessment Observation Form (FAO; O'Neill et al., 1997).

d. *conducting learner motivation assessments*. These types of assessments help to identify what motivates individual learners to engage in a particular behavior. One example is the Motivation Assessment Scale (MAS; Durand & Crimmins, 1992). With this scale (http://www.monacoassociates.com/mas/MAS.html), raters are asked 16 questions about the interfering behavior. Scores are added up and ranked by category of function (sensory, escape, attention, tangible).

e. *conducting learner reinforcer preference assessments*. These types of assessments help team members identify activities, materials, etc. that are motivating to the learner and might be used during an intervention to decrease interfering behaviors and increase more appropriate behaviors. This type of procedure usually takes about five minutes and involves the steps listed below.

- Sit in front of the learner and hold up two items and say to the learner, "Pick one."
- Wait ten seconds for the learner to indicate his/her choice in whatever manner is appropriate to the learner (e.g., reaching, pointing, verbalizing, using a switch or augmentative communication device).
- Place the selected and non-selected objects in their appropriate containers (i.e., one to hold the learner's selections, one to hold the materials not selected).

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- Continue the first three steps until half the objects presented are chosen (Mason & Egel, 1995).

5. Teachers/practitioners use indirect and direct assessment results to identify:

   a. where the behavior is happening.

   b. with whom the behavior is occurring.

   c. when the behavior is happening.

   d. activities during which the behavior occurs.

   e. what other students are doing when the behavior starts.

   f. what teachers/adults are doing when the behavior starts.

   g. proximity of other students, teachers, and/or adults.

   h. the noise level in the environment.

   i. the number of individuals in the area.

   j. other environmental conditions (e.g., lighting, door open/closed).

   k. the function of the behavior. Behaviors fall into two categories of function:

      - *to get or obtain something desired*: obtain internal stimulation (wanting something because it feels good), obtain attention, obtain activities or objects or
      - *to escape or avoid*: internal stimulation (not wanting something because it feels bad), escape or avoid attention, avoid tasks or activities.

6. Teachers/practitioners identify other variables that might be influencing the interfering behavior (e.g., medication, family/home variables, health status of learner).

In the case of severe self injury or aggression, a thorough medical evaluation should be conducted to rule out possible sources of discomfort, illness, or other chronic conditions that may exacerbate the behavior.

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Step 4. Developing a Hypothesis Statement

Step 4 involves developing a hypothesis statement that is based upon the assessment results and describes the behavior in sufficient detail. Analyzing assessment data helps team members identify patterns of behavior across time and environments. On many occasions, patterns of behavior and the possible reasons for the behaviors will be obvious; however, at other times, the behavior patterns may be subtle and difficult to identify.

1. Teachers/practitioners develop a hypothesis statement for the interfering behavior that includes:

    a. the setting events, immediate antecedents, and immediate consequences that surround the interfering behavior.

    b. a restatement and refinement of the description of the interfering behavior that is occurring.

    c. the function the behavior serves (i.e., get/obtain, escape/avoid).

Example hypothesis statement: "John talks loudly when the teacher is conducting a lesson because he cannot complete his work, and he is then sent to the resource room where he plays with a squishy ball and has no demands placed on him."

Step 5. Testing the Hypothesis

An important step in the FBA process is to test the hypothesis to ensure that it is correct, ***as long as there is no risk of injury or damage. If the behavior involves risk of injury or damage, then proceed to Step 6.***

1. Teachers/practitioners test the hypothesis by modifying the setting/activity to increase the probability that the behavior occurs.

To test the example hypothesis statement above, the teacher could alternate between whole class instruction and independent seat work over the course of several days or weeks to confirm the cause of the behavior. In addition, teachers/practitioners also would need to change what happens in the resource room. Rather than providing the squishy ball, John may be asked to help wash all of the tables or do some nonpreferred activity. If changing the tasks in English class and the resource room result in an increase in the interfering behavior (because John is no longer getting what he wants), then the hypothesis is most likely correct. However, if John talks loudly during both activities, the team would need to re-examine the hypothesis.

Step 6. Developing Interventions

Teachers/practitioners conduct an FBA as a first step in trying to understand why a learner with ASD may be exhibiting an interfering behavior. As the function of the behavior becomes apparent, teachers/practitioners develop interventions to reduce the occurrence of the

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interfering behavior in question. Teachers/practitioners use specific evidence-based practices such as functional communication training (FCT), differential reinforcement, response interruption/redirection, extinction, and stimulus control/environmental modification to decrease the occurrence of the interfering behavior and increase the use of more appropriate replacement behaviors. When developing intervention plans, teachers/practitioners should refer to the specific briefs for these practices to access the steps for implementation and implementation checklists.

In Step 6, teachers/practitioners focus on developing comprehensive intervention plans that increase learners' use of more appropriate behaviors to achieve their goals and reduce the occurrence of the interfering behaviors. As a result, learners will have a larger repertoire of appropriate, adaptive behaviors.

Before an intervention plan is developed, teachers/practitioners identify an appropriate evidence-based practice that can used to address the function of the interfering behavior.

1. Teachers/practitioners identify appropriate evidence-based practices that address the function of a learner's interfering behavior.

The following table includes specific functions of interfering behaviors and the appropriate evidence-based practices that might be used to reduce learners' interfering behaviors.

Function of Interfering Behavior	**Other Potential Behavioral Procedures**
Attention	• Functional communication training (FCT) • Extinction • Differential reinforcement
Escape/avoid	• Functional communication training (FCT) • Extinction • Differential reinforcement • Stimulus control
Sensory/ autonomic (behavior is reinforced because it feels good or because learner can escape discomfort)	• Response interruption/redirection (RIR) • Functional communication training (FCT) • Extinction • Differential reinforcement • Stimulus control
Tangible (e.g., to gain items, toys)	• Functional communication training (FCT) • Extinction • Differential reinforcement • Stimulus control

After the appropriate evidence-based practice is identified, the FBA coordinator and other team members develop a behavior intervention plan (BIP).

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2. Teachers/practitioners develop a behavior intervention plan (BIP) that matches the function of the interfering behavior and is agreed upon by all members of the team.

The BIP should be clearly written so that all members of the team are knowledgeable about their roles and responsibilities. Team members also should consider ways that the BIP can address the interfering behavior in home and community settings, if appropriate.

The BIP should include strategies for (1) teaching or increasing the replacement behavior, and (2) increasing learning opportunities and social engagement. Interventions that focus on skill development will be more successful than those that focus entirely on behavior management because they provide a means for learners with ASD to express themselves in more appropriate ways.

3. Teachers/practitioners include the following in the BIP:

   a. *a definition of the interfering behavior*. The definition of the interfering is usually included in the hypothesis statement.

   b. *evidence-based practices used to decrease the interfering behavior.*

   c. *objectives that can be used to indicate progress*. The objectives can be drawn from the learner's IFSP/IEP or drafted when writing the BIP. Objectives should be observable and measurable so that the effectiveness of the intervention strategies can be monitored accurately.

Example objectives:

- *John will participate three or more times appropriately during 10 minutes of whole class instruction in English.*
- *John will complete tasks in English class without talking.*
- *If John needs to leave class, he asks for a break during whole class instruction using his "Break" card.*

As John becomes more successful at participating appropriately in English class during whole group instruction, the amount of targeted time and number of positive participation examples can be increased.

   d. *additional materials that may be needed*. These include all materials that will be needed to implement the intervention successfully. Materials may include data collection sheets, timers for learners to monitor how long they have been engaged in a certain activity, visual supports (e.g., "Break"card), and additional staff to help teachers and other practitioners follow through with demands.

   e. *environmental accommodations*. Accommodations to the environment include anything that will decrease the probability of a behavior occurring. For example, a teacher could dim the lights in a class if it is too bright for a learner with ASD.

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f. *response(s) from staff and others to the interfering behavior*. In many instances, teachers and other practitioners will ignore the interfering behavior when it occurs so that learners with ASD are no longer reinforced for engaging in it. In some cases, other responses may be necessary (e.g., delivering consequences).

g. *Strategies for improving skill deficit areas*. Appropriate evidence-based practices should be chosen to teach learners with ASD skills needed to participate appropriately in settings and activities where the interfering behavior occurs. For example, if a learner with ASD is hitting peers at lunch, then peer-mediated instruction and intervention could be used to teach the learner with ASD and typically developing peers how to interact with one another.

h. *Strategies for enhancing learner motivation*. These strategies might include offering choices during activities and across the day, incorporating preferred materials into activities, or allowing learners with ASD to engage in a preferred activity when completing an activity without engaging in the interfering behavior.

i. *The data collection plan*. Team members use the data collection system developed earlier to monitor progress. The system outlines when, where, by whom, and how data are collected.

Step 7. Monitoring Intervention Effectiveness

In Step 7, teachers/practitioners regularly monitor learner behavior(s) to determine the effectiveness of the intervention.

1. Teachers/practitioners develop a system to monitor the effectiveness of the intervention that outlines when, where, by whom, and how data are collected.

   - *When*: once a week, daily, on Tuesdays and Thursdays
   - *Where*: during snack, on the playground, in math class
   - *By Whom*: special education teacher, speech-language pathologist, general education teacher, paraprofessional
   - *How*: checklist, anecdotal notes (e.g., running records, informal observation notes), self-management checklist completed by learner with ASD

2. Teachers/practitioners collect data that focus on:

   a. *the frequency of the interfering behavior*: how often the behavior occurs (e.g., time sampling, event sampling);

   b. *the frequency of use of replacement behavior(s):* how often the learner with ASD uses the replacement behavior(s); and

   c. *how long the interfering behavior lasts when it occurs.*

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3. Teachers/practitioners collect data both in the setting where the behavior occurs and in other settings.

4. Teachers/practitioners collect data at least once a week in the setting in which the behavior occurs to monitor the incidence of the interfering behavior(s) as well as the replacement behavior(s).

As the interfering behavior diminishes, team members can collect progress monitoring data less frequently. However, data should continue to be collected throughout the year in order to demonstrate maintenance of skills and the success of the intervention plan.

5. Teachers/practitioners compare intervention data to baseline data to determine the effectiveness of the intervention.

6. Teachers/practitioners summarize the data to make decisions about program planning.

References

Durand, V. M., & Crimmins, D. B. (1992). *Motivation assessment scale*. Topeka, KS: Monaco & Associates Incorporated.

Iwata, B. A., & DeLeon, I. G. (1995). The functional analysis screening tool (FAST). Unpublished manuscript, University of Florida.

Lewis, T.J., Scott, T., & Sugai, G. (1994). The problem behavior questionnaire: A teacher-based instrument to develop functional hypotheses of problem behavior in general education classrooms. *Diagnostique, 19*(2-3), 103-115.

Mason, S. A. & Egel, A. L. (1995). What does Amy like? Using a mini-reinforcer assessment to increase student participation in instructional activities. *Teaching Exceptional Children, 28*, 42-45.

O'Neill, R. E., Horner, R. H., Albin, R. W., Storey, K., & Sprague, J. R. (1997). *Functional assessment and program development: A practical handbook.* Pacific Grove, CA: Brookes/Cole Publishing Company.

Singh, N. N., Matson, J. L., Lancioni, G. E., Singh, A. N., Adkins, A. D., McKeegan, G. F., Brown, S. W. (2006). Questions about behavioral function in mental illness (QABF-MI). *Behavior Modification, 30*(6), 739-751.