4: Teaching Functional Assessment Content and Process

Abstract: Identification of the relevant content material that provides the foundation for knowledge of functional assessment and the multiple resources available to access it are noted. Several instructionally effective methods for teaching knowledge and clinical decision-making are then briefly described.

Focus Questions:

• How can knowledge of functional assessment (FA) best be taught?
• How can the decision-making involved in completing a FA process best be taught?

The complex repertoire involved in using FA when designing interventions to decrease challenging behaviors of individuals with developmental disabilities requires knowledge and skills across diverse topic areas. Learning goals, objectives, desired behaviors, and criteria must be specified to pave the way for identification of appropriate instructional methodology and assessment approaches (Hendrix & Tieman, 1971; Vargas, 2009). An instructional analysis should clearly identify the requisite subareas and the prerequisite knowledge and skills to attain those learning goals and objectives (Dick, Carey, & Carey, 2009).

A solid grasp of basic behavioral principles and procedures is essential to understanding the underpinning of challenging behaviors and the ways in which they can be modified. Since the individual's behavior and environment are being
manipulated, ethically, the college student must have a well-established knowledge-base of both the theoretical basis for behavioral approaches and how to correctly implement effective practices. Important topics for college students to know include behavioral principles and procedures, behavioral definitions, ethics, methods of recording behavior, analyzing graphs, single participant research designs, functional assessment, intervention strategies, and evaluating treatment effectiveness, to name a few. Additionally, selection of effective interventions by professionals must occur in response to varying client characteristics and situations and so programming for generalization must be included in the curriculum. These topics were briefly reviewed in Chapters 2 and 3.

Well-established, defined content in the area of FA that reflect applied behavior analysis (ABA) and how to use it to teach others socially significant behaviors can be found in multiple sources including textbooks, research articles, and professional body’s resources. Essential topics can be gleaned from a review of the table of contents of the many textbooks available in the area (e.g., Cooper et al., 2007; Fisher, Piazza, & Roane, 2011; Martin & Pear, 2011; Miltenberger, 2012; see Chapter 7 for more). Likewise, training programs have carved out relevant topics to teach direct-care staff members that cover the gamut of ABA and how to apply it in various contexts to teach individuals desirable skills and decrease challenging behaviors (Luiselli, Bass, & Whitcomb, 2010). Common topics include characteristics of ABA, a history of its development and philosophical roots, defining behavior and measuring it, positive reinforcement, negative reinforcement, prompting and fading, shaping, chaining, stimulus control, single participant research designs, ethics, schedules of reinforcement to increase and decrease behavior, designing programs, self-control strategies, and more.

The Behavior Analyst Certification Board®, Inc. (BACB®) provides standardized assessment of applicants’ knowledge of the requisite topics to determine if a professional is competent to deliver ABA assessment and treatment procedures to those who need it. The BACB® is a nonprofit organization founded in 1998 to evaluate whether professionals have the appropriate coursework, knowledge, and experience to meet the high standards needed to provide quality care to the students/clients whom they serve (see www.bacb.com for more). For example, to obtain certification at the Master’s level, or become a board certified behavior analyst (BCBA), current requirements include a Master’s degree in a relevant discipline (e.g., psychology, special education), 225 hours of approved coursework, 1500 hours of supervised experience, and successfully passing a standardized exam. The BACB® Task List, now in its 4th edition, was created by content area experts and Job Task List surveys of representative certificants to guide BACB® course development, exam content, and application preparation (see http://www.bacb.com/newsletter/BACB_Newsletter_05_2011.pdf for more). Thus, a clearly specified content task list and assessment procedure exists to evaluate whether an applicant demonstrates knowledge of the relevant information.

To teach someone the complex repertoire involved with addressing an individuals’ challenging behaviors involves a variety of instructional methods (e.g., readings, cooperative group activities, case presentation) to achieve the desired learning outcomes (e.g., factual knowledge, synthesis, application, problem-solving in verbal or written forms). There are
a variety of instructional approaches available including traditional instructional methods, course systems, and simulations.

Instruction in ABA content, including FA, to provide the basic background knowledge can be delivered by textbooks, courses, and programs (see Chapter 7 for a resource list). There are also many undergraduate and graduate programs offered by universities with curriculum that meet approval from the BACB® based on a review of their content and experience requirements (http://www.bacb.com/index.php?page=100358). Institutions of higher education around the world are increasingly offering this certificate program (Shook, 2005; Shook & Neisworth, 2005). The current list of BACB® approved programs can be found at http://www.bacb.com/index.php?page=100358.

To ensure that college students become proficient in behavioral principles and procedures, effective instruction may involve clearly stated objectives, competent models, frequent responding opportunities, immediate feedback, self-pacing, and mastery-based learning (Fredrick & Hummel, 2004). Two course systems that incorporate these components and are empirically-supported are WebCAPSI and Interteaching.

Computer-Aided Personalized System of Instruction (CAPSI) uses a Keller’s Personalized System of Instruction to interactively generate a high rate of student responding and review of course material (Pear & Crone-Todd, 1999; Pear & Kinsner, 1988). The instructor divides course material into small, manageable units (e.g., approximately 10-15 units for a typical college course) and creates short answer study questions that tap into a full range of difficulty level (factual, synthesis, analysis, application). After the student studies a unit of material and answers the study questions regarding it, he or she is able to take the quiz. Sitting in front of a computer, the CAPSI software presents the student with three randomly assigned questions and the student types answers to each into designated boxes on the computer screen (Pear & Crone-Todd, 1999). After submission of the completed quiz, the instructor and/or two students randomly assigned by CAPSI to be peer proctors provide typed feedback concerning the quality of the test-taker’s answers, typically within 24 hours. Each short answer question is provided with feedback on accuracy and completeness, and the quiz is assigned a pass or restudy by the proctor. If the student’s quiz is designated a restudy then the student receives another set of randomly assigned questions for that unit when the student retakes that unit quiz after a 24 hour period to allow for additional studying. A pass designation on a quiz by a proctor allows the student to take the quiz for the next unit. In addition to immediate feedback, another important feature of this system is that the student can progress through the material at his or her own rate, taking quizzes once prepared to do so. Mastery learning of written answers to questions and repeated exposure to the material is the heart and soul of this approach. Learning the material well before the student proceeds to the next unit ensures a solid knowledge-base to draw from when learning advanced concepts. Teaching critical thinking in a nonpunitive social environment allows students to acquire pivotal skills that will help them in other situations (e.g., reading carefully, critical thinking, formulating arguments). Past research supports the instructional effectiveness of the CAPSI approach for use with college students (Pear, Schnerrch, Silva, Svenningsen,
Lambert, 2011; Svenningsen & Pear, 2011) and also may be useful for teaching how to use applied procedures (Oliveria, Goyos, & Pear, 2012). See http://home.cc.umanitoba.ca/~capsi/index.html for more.

**Interteaching** is another method that involves immediate feedback and frequent testing to increase college/university students' acquisition of course content (Saville, Lambert, & Robertson, 2011). Like CAPSI, a study guide with a range of question difficulty and covering small amounts of material is completed by students. During half of each class, students come to class prepared to discuss the answers to these unit questions in small groups and earn quality points for their effort. Students also evaluate the quality of their own session and note any difficulty with the material which is addressed by the instructor at the start of the next class. Single participant research evaluating interteaching has found greater active student responding compared to traditional class instruction with a class of 24 master's level special education students (Mason, 2012). Moreover, Saville, Pope, Truelove, and Williams (2012) found higher exam scores when interteaching was used compared to lectures when the two methods were alternated across classes.

The FA process requires many decision-making steps such as: What characteristics of the individual's challenging behavior best define and describe it? Which types of FA should be used to gather information about the function of the challenging behavior? How can the FA data be analyzed and interpreted to arrive at a functional hypothesis for the individual's challenging behavior? What is the quality of the evidence, based on the advantages and disadvantages of each assessment method and the degree of corroborating assessment outcomes? Which treatments are best for the client's circumstances (e.g., characteristics, situation, significant others) given the results of the FA?

**Simulation** is one method of programming educational experiences that may help to bridge the gap between classroom or online instruction and the application of relevant clinical knowledge, decision-making, and skills in the target environment (Vyas, Ottic, & Caligiuri, 2011). Simulations involve the life-like presentation of the relevant variables found in a complex situation to allow the learner to manipulate, problem solve, actively engage in, and experience the consequences typical of those actions in the real-world (Brown, 1999). Simulations may be an effective approach for teaching the decision-making skills associated with using the results of functional assessment to select effective treatments.

Simulations have been used to teach medical procedures (Stather, Mac Eachern, Chee, Dumoulin, & Tremblay, 2012), pharmaceutical skills (Vyas, Ottic, & Caligiuri, 2011), functional assessment (Desrochers, Clemons, Grady, & Justice, 2000; Desrochers, Crone-Todd, & Conheady, 2006; Desrochers, House, & Seth, 2001) and social work skills (Smokowski & Hartung, 2003), among others. Simulations have been effectively used to teach staff complex skills such as **discrete trial training** (DTT), which is a one-on-one method of teaching new skills to individuals with developmental disabilities (Eldevik et al., 2013). In Eldevik et al.’s computerized training system an interactive virtual child with autism provides both assessment and training in declarative and procedural knowledge of DTT. As another example, Second Life, an online multi-layer game was utilized to provide education students with practice using the decision-making required to respond to disruptive students in a simulated classroom (Mahon, Bryant, Brown, & Kim, 2010). Preliminary subjective evaluations by 16 undergraduate teacher education students were generally favorable regarding the effectiveness of the simulated classroom experience in providing experience in how to engage in classroom
management. No information was collected on whether these students could implement these skills in actual classroom situations.

*Simulations in Developmental Disabilities: SIDD* is an example of a multimedia computer program designed to provide students and staff with the opportunity to acquire and practice the clinical decision-making skills to decrease clients/students’ challenging behaviors. During the computer simulation, the student assumes the role of a clinician whose professional duties involve use of functional assessment and treatment of the severe problem behavior (i.e., aggressive, self-injurious, or disruptive behaviors) displayed by an individual with developmental disabilities. The college student proceeds through referral, problem definition, assessment, functional hypothesis, and treatment stages. The results of experimental studies suggest that *SIDD* can be an effective method of providing students with practice in the decision-making involved with FA (Desrochers, Clemmons, Grady, & Justice, 2000; Desrochers, House, & Seth, 2001).

Advantages to using simulations include that it can be cost-effective, safe, and ethical compared to real world field experiences. Simulations can also be structured to expose the student to the full range of real-life possibilities in a relatively short time to maximize learning. When using simulations, students are actively involved in completing the training task and engaged in clinical decision-making. Moreover, some research indicates that high fidelity human simulation assessment may be related to critical thinking (Fero et al., 2010).

Direct and specific instruction is necessary to ensure that the teacher/therapist is proficient in engaging in the skills that lead to the individual’s behavior change (Neef, 1995). How to teach someone to conduct a functional analysis is the focus of Chapter 5.

**Discussion Questions**

1. What are the characteristics of effective instructional methods to teach FA content? Defend your points.
2. Critically evaluate use of a simulation approach compared to traditional classroom instruction as a method of teaching FA.

**Exercise: Case Simulations**

**Client Case Simulation #1**

Instructions: The following material represents information for a particular client case. Please review the referral form and functional analysis data and answer the questions on the work sheet on page 66.
Referral Form

**Referring Agent:** School Nursing staff

**Client:** Andrew McGaff

**Age:** 12 years

**Diagnosis:** Profound intellectual disability, communication skills deficits, nonambulatory or wheelchair-bound

**What is the problem?** Andrew spits on the floor, causing germs to be spread. A lot of the kids crawl around on the floor and then put their hands in their mouth. It is nasty stuff.

**How long has the problem been occurring?** He has been doing this ever since I can remember.

**How severe would you consider the problem behavior?** Because of how colds and other illnesses spread, I think that this is a real big problem.

**What are your present methods of dealing with it?** We constantly tell him not to do this and wipe his mouth so that no spit is available but somehow he always gets it out and it soon goes onto the floor.

The following FA data were collected. Three conditions, as described below, were tested to determine the maintaining variable(s) for Andrew McGaff's challenging behavior.

![Graph](https://socialsci.libretexts.org/Bookshelves/Psychology/Instruction_in_Functional_Assessment_(Desrochers_and_Fallon_)/4%3A_Teaching_Functional_Assessment_Content_and_Process)

Demand condition: Andrew and the teacher are seated at a table in the therapy room. Andrew is presented with educational tasks from his Individualized Education Plan (IEP). These tasks should be those that Andrew has not learned. The teacher presents the task materials and an instruction for Andrew to perform the task (e.g., placed a ball and cup in front of Andrew and says, “Point to the ball”). If Andrew fails to respond or responds incorrectly then the therapist removes the task materials, turns away for 6 s, re-presents the task, and provides successive degrees of assistance until a correct response is made (e.g., gestures, modeling, and physical guidance to provide Andrew with the cues to perform the correct responses). After prompted or unprompted correct responses, the teacher delivers social
praise. After an occurrence of the problem behavior the teacher turns away, removes the materials, and ignores Andrew for 30 s.

Social disapproval condition: Andrew and teacher are in the therapy room together. Andrew is provided with a variety of activities. The teacher sits several feet away from Andrew and pretends to be busy at work. After each occurrence of Andrew’s challenging behavior, the teacher presents a negative comment (e.g., “You shouldn’t spit, good boys don’t do that,” “Please don’t do that!”). The teacher ignores any other behavior displayed by Andrew.

Alone condition: Andrew is placed in the therapy room alone without any reinforcers.

Client Case Simulation #2

Instructions: The following material represents information for a particular client case. Please review the referral form and functional analysis data and answer the questions on the work sheet on page 66.

Referral Form

Referring Agent: Teacher

Client: Laurie Anne Harish

Age: 15 years

Diagnosis: Profound intellectual disability, communication skills deficits, autism spectrum disorder

What is the problem? Laurie Anne is very difficult to work with. Whenever I give her a sorting task, which she can do when she wants to, she throws a fit! I cannot get her to do a lick of work.

How long has the problem been occurring? She has been doing this for the past 3 months and it has been steadily getting worse.

How severe would you consider the problem behavior? Well, she is not meeting her goals for the week and I end up having to work with the other kids since she is not getting anywhere.

What are your present methods of dealing with it? I tell her at the start of the day what we will be doing, but then once we get at our work station she immediately builds up for her typical fit of hollering and fussing and I can’t get anything done with her. I end up just letting the session go because her behavior is just too bad to work with and I don’t want anyone getting hurt.

The following FA data were collected. Three conditions, as described below, were tested to determine the maintaining variable(s) for Laurie Anne Harish’s problem behavior.
Demand condition: Laurie and the therapist are seated at a table in the therapy room. Laurie is presented with educational tasks from her Individualized Education Plan (IEP). These tasks should be those that Laurie has not learned. The therapist presents the task materials and an instruction for Laurie to perform the task (e.g., placed a ball and cup in front of Laurie and says, “Point to the ball”). If Laurie fails to respond or responds incorrectly then the therapist removes the task materials, turns away for 6 s, re-presents the task, and provides successive degrees of assistance until a correct response is made (e.g., gestures, modeling, and physical guidance to provide the client with the cues to perform the correct responses). After prompted or unprompted correct responses by Laurie, the therapist delivered social praise. After an occurrence of the problem behavior the therapist turns away and ignores Laurie for 30 s.

Social disapproval condition: Laurie and therapist are in the therapy room together. Laurie is provided with a variety of preferred activities. The therapist sits several feet away from Laurie and pretends to be busy at work. After each occurrence of the challenging behavior by Laurie, the therapist presents a negative comment (e.g., "You shouldn’t do that" “Please don’t do that!”). The therapist ignores any other behavior displayed by Laurie.

Alone condition: Laurie is placed in the therapy room alone without activities or other reinforcers.

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**Client Case Simulation #3**

Instructions: The following material represents information for a particular client case. Please review the referral form and functional analysis data and answer the questions on the work sheet on page 66.

**Referral Form**

**Referring Agent:** Evening staff

**Client:** Andy Smith

**Age:** 18 years
Diagnosis: Profound intellectual disability, communication skills deficits, visual impairment

What is the problem? In the middle of the night, at about 2:00 a.m., Andy comes out of his room and begins hollering. He can’t be quieted very easily. Sometimes he flops on the floor and bangs his head on the floor in a temper tantrum.

How long has the problem been occurring? He has been doing this for the past 6 months and it has been steadily getting worse.

How severe would you consider the problem behavior? These fits wake up the other residents. Andy sometimes breaks open the skin on his head and hurts himself. So I believe it is very severe.

What are your present methods of dealing with it? I generally call the supervisor who comes to the residence. He can often stop his fits by giving him pudding. It seems to really calm him down.

The following FA data were collected. Three conditions, as described below, were tested to determine the maintaining variable(s) for Andrew McGaff’s challenging behavior. The following FA data were collected by your assistant. Three conditions, as described below, were tested to determine the maintaining variable(s) for Andy Smith’s challenging behavior.

Demand condition: Andy and the therapist are seated at a table in the therapy room. Andy is presented with educational tasks from his Individualized Education Plan (IEP). These tasks should be those that Andy has not learned. The therapist presents the task materials and an instruction for Andy to perform the task (e.g., placed a ball and cup in front of Andy and says, “Point to the ball”). If Andy fails to respond or responds incorrectly then the therapist removes the task materials, turns away for 6 s, re-presents the task, and provides successive degrees of assistance until a correct response is made (e.g., gestures, modeling, and physical guidance to provide Andy with the cues to perform the correct responses). After prompted or unprompted correct responses by Andy, the therapist delivers social praise. After an occurrence of the challenging behavior the therapist turns away and ignores Andy for 30 s.

Social disapproval condition: Andy and therapist are in the therapy room together. Andy is provided with a variety of preferred leisure items. The therapist sits several feet away from Andy and pretends to be busy at work. After each occurrence of the challenging behavior by Andy, the therapist presents a negative comment (e.g., “You shouldn’t tantrum, don’t do that,” “Please don’t do that!”). The therapist ignores any other behavior displayed by Andy.

 Alone condition: Andy is placed in the therapy room alone without activities or other reinforcers.
Tangible condition: A preferred item (in this case pudding) is placed out of reach in the room where Andy is located. When an instance of the challenging behavior occurs, the preferred item is delivered to Andy for several seconds and then placed out of reach again.

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**Case Simulation Worksheet**

**Therapist Name:** _____________________________________

**Client:** ________________________________________________

**Date:** _________________________________________________

A client has been referred to you for treatment. Carefully read the information provided about the client and answer the following questions in the space provided under each question regarding this case. Use additional space if needed to write your answer.

**Behaviorally define the client’s challenging behavior (note that you may add information to define the behavior as completely as possible):**

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

**Name and describe the types of assessments you would conduct to collect information about the client’s problem behavior. What relevant factors in the individual’s environment would you examine during an assessment of an individual’s problem behavior? What ethical considerations are present?**

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**On the basis of the graphed data provided to you, speculate about the possible causes of the client’s challenging behavior. Provide a rationale for your hypothesis.**

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________________________________________________________________________
Name and describe the possible treatments for this client's challenging behavior. Indicate as many treatments as you feel are applicable.

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__________________________________________________________________________

What replacement behavior will you reinforce?

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__________________________________________________________________________

How will you identify and implement reinforcers for desirable behaviors and any important characteristics they should have?

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What antecedent-based interventions will you use?

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What consequence-based interventions will you use?

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How will you program for generalization and maintenance?

__________________________________________________________________________
What ethical procedures will you use?

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Developed by M. Desrochers (2004). The College of Charleston