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Evaluating Recommendations Versus Utilization of Essential Components of a Functional Analysis Procedure

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EVALUATING RECOMMENDATIONS VERSUS UTILIZATION OF ESSENTIAL
COMPONENTS OF A FUNCTIONAL ANALYSIS PROCEDURE

by

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EVALUATING RECOMMENDATIONS VERSUS UTILIZATION OF ESSENTIAL
COMPONENTS OF A FUNCTIONAL ANALYSIS PROCEDURE

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Western Michigan University, 2018

Functional behavior assessment (FBA) has been identified as an essential process for

behavior analytic practitioners to identify the variables maintaining challenging behaviors

(BACB Professional and Ethical Compliance Code for Behavior Analysts (PECC), 3.01ab,

2014). FBAs include a range of strategies, including indirect measures (e.g., interviews and

questionnaires) and direct measures of behavior (descriptive and experimental strategies).

Functional analysis (FA) is typically considered the most sophisticated of the options subsumed

under FBAs in that it involves both direct measures of behavior and experimental manipulation

of hypothesized controlling variables to identify controlling variables for challenging behaviors.

The results of FAs allow practitioners to match treatments to these unique controlling variables

and select functional replacement behaviors for individuals. This two-part study identifies the

essential components of FAs and reports on the degree to which behavior analysis practitioners

are completing the expert recommended components of an FA. In the first study, nationally

known experts in functional analysis (FA), were interviewed in an effort to identify the essential

components of FAs.   In the second study, Board Certified Behavior Analysts (BCBAs) and

BCBA-Ds were surveyed regarding the extent to which they utilized the "expert recommended"

FA components from the first study in their regular practice. The results of the study indicate

practitioners are utilizing most of the components rated as essential by experts and additionally

may be engaging in components that are not recommended as essential by experts.

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INTRODUCTION

Overview

Over the past 30 years, behavior analysts have developed and empirically validated a range of methods to identify the functions (causal and maintaining variables) of challenging behavior. This assessment model, known as functional behavior assessment (FBA), has been shown to be highly effective in helping practitioners individualize treatment protocols, match treatments to unique controlling variables, and select functional replacement behaviors for each individual. Interventions based on FBAs have repeatedly been validated as effective and efficient interventions for behavioral problems. The FBA model has been adopted as a defining feature of behavior analysis practice and has been incorporated as an essential element of the code of ethics for behavior analysis (BACB Professional and Ethical Compliance Code for Behavior Analysts (PECC), 3.01ab, 2014). As part of this process, behavior analysts must be able to conduct the full range of assessment procedures including indirect assessments (interviews, and questionnaires, such as the Questions About Behavior Function (QABF) assessment and Functional Assessment Screening Tool (FAST)) and descriptive assessments (e.g., Antecedent Behavior Consequence (ABC) data collection) (BACB Fourth Edition Task List, I 03-04, 2012). These strategies (indirect and descriptive), as well as experimental analyses, are all directed at the same goal: to identify the controlling variables or function of challenging behaviors.

However, the indirect and descriptive assessments alone often do not provide enough information to appropriately identify the function of a behavior and to select effective function-based treatments for a client (Thompson & Iwata, 2007). This limitation is thought to be a result of the correlational and descriptive nature of the FBA assessment model. More specifically, the therapist or experimenter is not directly manipulating contextual variables (e.g., antecedents and consequences of the challenging behavior), and as a result, cannot verify a functional relationship between the suspected causal variables and the behavior of interest. Recently, individuals are increasingly reporting use of these initial indirect and descriptive methods to inform further analyses (Beavers, Iwata, & Lerman, 2013). More specifically, O'Neill et al. (1997) suggest only conducting further analyses (i.e., functional analyses) after indirect and descriptive analyses have been completed.

Functional analysis (FA), a form of experimental analysis, is an optional part of the FBA process that practitioners may utilize for clients. Hanley (2012) states "the term functional analysis is employed only when some aspect of the environment is systematically altered while challenging behavior is being directly observed" (p. 56). Therefore, the difference between the other methods of assessment and FA involves the direct manipulation of variables. The essential steps in conducting an FA have been the focus of two recent publications. In 2003, Hanley, Iwata, and McCord reviewed the literature on FAs up until 2000. Then, in 2013, Beavers et al. updated this review by examining the articles from 2000 up until the review was compiled. Based on these reviews, most of the field has maintained a general consensus of basic requirements of FAs, but FA methodology has changed slightly over time and continues to evolve. For example, Hanley and colleagues continue to research alternative methods to limit the time spent in indirect and descriptive analyses by conducting short interviews and brief

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observations before conducting synthesized functional analyses (Hanley, Jin, Vanselow, & Hanratty, 2014). These synthesized functional analyses vary from the standard analyses in implementation, but nonetheless, the initial assessment variations may help inform the essential components of more traditional FA procedures. Furthermore, the extent to which practitioners follow the recommended FA methodology has never been systematically assessed. The recommended features of the FA process are summarized in the following sections.

<p align="center">Populations and Behaviors</p>

FAs may be completed across a variety of settings and populations. Much of the early research with FAs focused on challenging behaviors of individuals with intellectual disabilities, but Beavers at al. (2013) noted that more recent research has increased the proportion of subjects who are diagnosed with conditions other than intellectual disabilities (9% in 2003, 21.5% in 2013) (p. 4). Early FA research also focused heavily on severe challenging behavior (e.g., self-injurious behavior (SIB), aggression, property destruction) and that trend still persists today with relatively few FAs focusing on other categories of challenging behavior, such as complaining, overeating, and mental-illness related behaviors (p. 5). As behavior analytic services become more widely accepted and spread to more populations (e.g., mental health and geriatric populations), FAs for these consumer groups and their clinically-relevant behaviors will become more critical to understand and implement. In the case of increased utilization of FAs across populations and challenging behaviors, there will also be a need to train more professionals (e.g., clinical behavior analysts, behavioral gerontologists, special education teachers, and parents) to competency in FA implementation.

These extensions of FA applicability to new populations, challenging behaviors, and new professional and non-professional personnel suggest a need to clarify the essential steps in

conducting a high-quality FA. Deviations from the recommended FA components may undermine the validity of assessment results and thus compromise the efficacy of treatments derived from an FA. The following section summarizes the recommended practices for an FA, as derived from published guidelines.

<div align="center">Pre-assessment Information</div>

Pre-assessment information includes information relevant to procedures and precautions that should take place before completing an FA. The main components of this feature include the consent process and safety precautions.

Consent

Interestingly, neither the 2003 nor the 2013 FA reviews mention information regarding informed consent to conduct the analysis (Beavers et al., 2013; Hanley et al., 2003). However, the O'Neill et al. (1997) handbook on the entire FBA process stresses the importance of consent to complete the FA component of the FBA assessment. Other publications (e.g., Brodhead, Cox, & Quigley, 2018) also discuss the importance of consent before assessments and intervention. Informed consent would typically involve providing written information to the client or guardian of the client regarding the benefits and risks of the procedure. The guardian would then decide whether he/she agrees it is appropriate for the therapists to conduct the assessment. Consent is extremely important to receive before conducting FAs, which may indirectly cause some risks for the participant (Section 3.03, BACB PECC, 2014).

Safety Precautions

Furthermore, O'Neill et al. (1997) stress the importance of strategies to ensure the safety and protection of the individuals involved (both therapists and clients). As noted earlier, severe challenging behaviors (e.g., SIB, aggression, and property destruction) are often the focus of

FAs. These severe behaviors have the potential to cause substantial injury to both the individual being served and the therapists.

One of the defining features of FA is the systematic presentation of conditions that might provoke these behaviors of interest and therapists must assess the strength (e.g., probability, frequency, magnitude) of behaviors under each of the conditions. In recognition of these safety challenges, several safety-related accommodations have been suggested including: building an appropriate number of therapists for an assessment team, using protective equipment, setting termination criteria, and utilizing "precursor" behaviors as terminating behaviors (O'Neill et al., 1997, pp. 63-64). Hanley et al. (2003) do not mention safety concerns during an FA, and Beavers et al. (2013) only briefly mention that precursor assessments may be warranted to prevent safety issues. Weeden, Mahoney, and Poling (2010) address the importance of describing safety protections, specifically related to SIB during FAs. The authors found that approximately 80% of the articles (up until 2008) involving SIB during functional analysis did not provide any information regarding safety protections for the individual. Based on the information provided in the Beavers et al. (2013) review, this continues to be an issue. Having a set safety plan for such severe challenging behaviors can potentially limit the risk of injury and assist practitioners in conducting ethical and safe assessment conditions.

Conditions

FAs consist of conditions during which the therapists manipulate the hypothesized controlling variables, both antecedents and consequences, in a pre-determined fashion. The conditions relevant to an FA may be determined by a variety of factors. The indirect and descriptive assessments completed before an FA are one way to inform the content of conditions. There are standard conditions that are included in most FAs, and there are also more unique

conditions that are implemented less often. The more standard conditions stem from the Iwata,

Dorsey, Slifer, Bauman, and Richman (1982/1994) study designed to test commonly occurring

consequences of social positive reinforcement (e.g., access to physical and/or vocal attention)

and negative reinforcement (i.e., escape from presumed aversive demands) against control play

conditions. The unique conditions are then variations on standard conditions involving changes

to make conditions more closely match the natural environment of the client (e.g., utilizing

diverted attention instead of no attention during a social positive reinforcement condition, or

involving contingent access to tangible items during a positive reinforcement condition).

Standard Conditions

Typically, the FA will consist of some combination of attention, escape, play/control, and

alone conditions. The *attention* condition typically consists of providing some sort of social

positive reinforcement (e.g., reprimand, comforting statement, physical touch) contingent on the

individual engaging in the challenging behavior. The *escape* condition involves removing a

demand (or negative reinforcement) contingent on challenging behavior. The *play/control*

condition does not allow for any demands to be placed on the individual, and there is continuous

access to social reinforcement. The *alone* condition consists of the individual remaining in one

room where the therapist can, unbeknownst to the individual, observe from another room. The

individual is not provided any socially mediated stimulation from the therapist or other items.

Certain behaviors, such as self-injurious behavior, may warrant this type of condition due to

possible automatic or sensory reinforcement. However, individuals argue the alone condition is

often unnecessary and may be a waste of resources for other behaviors (Beavers et al., 2013). For

example, if there is not a suspicion of behavior serving an automatic function (e.g., physical

aggression toward others would unlikely be maintained by automatic consequences), there may

be no need to run this type of condition. Additionally, an observation room may not be available (e.g., if the FA is conducted in the home setting), and a no-interaction condition may alternatively be conducted. The therapist would still refrain from any interaction with the individual, but he/she would be present in the room for the entire condition. A no-interaction condition is just one variation of some of the more traditional conditions.

Variations on Conditions

Conditions in an FA may vary depending on the individual being served. For example, a tangible condition has been utilized quite often in the literature but was not included in the original seminal article by Iwata et al. (1982/1994). Some professionals will argue that tangible reinforcement is a form of social positive reinforcement and does not need to exist separately from the attention condition. However, the tangible condition has been incorporated into an increasing percentage of published FAs over recent years, one indication of its potential ecological relevance (i.e., 34.7% of studies in the 2003 review, and 50.6% of studies in the 2013 review). Though the tangible condition is assessed much more frequently in recent publications, the authors argue this may not be appropriate for every individual (Beavers et al., 2013). Additional variations may occur within the attention, escape, and play conditions. One such variation in the attention condition is diverted attention where, instead of a therapist remaining silent throughout the condition, he/she diverts his/her attention by engaging with someone other than the client in the same room as the client. The therapist only provides attention to the individual when he/she engages in challenging behavior.

The length and repetition of the conditions also fluctuate depending on the client and resources. However, the majority of studies (83.9%) do tend to consistently include multiple

assessment conditions that are repeated at least three or more times each (Beavers et al., 2013, p. 7).

Despite the minor variations within and across conditions, there seems to be consensus to run conditions involving social positive reinforcement (i.e., attention and/or tangible reinforcement), negative reinforcement (i.e., demand), automatic reinforcement (i.e., alone), and some type of control condition (i.e., play) for most traditional functional analyses. Once the conditions are chosen, data must be collected within each condition during the assessment.

Data Collection

Data collection for FAs tends to vary depending on the individual case and associated behaviors, as well as therapist resources. However, in each FA, a consistent measure is chosen to use across conditions. Additionally, when more than one individual is available for data collection, the measurement accuracy may also be tested through interobserver agreement (IOA) data.

Dependent Variables and Data Collection Measures

Most studies in the literature do not provide detailed descriptions of the data collection systems used in an FA, although there are frequent reports of a range of measurement systems, such as frequency counts and partial interval recording systems. For example, Lambert, Bloom, Clay, Kunnavatana, and Collins (2014) mention that personnel in their study collected FA frequency data supplemented with accuracy measures that required each person's count to be within 5 seconds of the behavior occurring. Partial interval data is another common type of data collection. The interval length is predetermined, and the therapist records whether challenging behavior occurred at all during the interval. Other forms of FA may utilize other data collection methodology. For example, latency measures are used in FA methodology that involve taking

data on how long after a test condition was implemented before the individual engaged in the first instance of a challenging behavior, after which that test condition would typically be terminated (Neidert, Iwata, Dempsey, & Thomason-Sassi, 2013; Thomason-Sassi, Iwata, Neidert, & Roscoe, 2011).

In spite of these variations in data collection procedures, the majority of published FAs have been modeled after the procedures pioneered by Iwata and colleagues (1982/1994) during which frequency or partial interval data collection are used to collect data across the entire duration of each FA test condition. This type of data collection provides adequate information to make discriminations in the level of behavior across FA conditions.

Measurement Accuracy and IOA

Ideally, interobserver agreement data would be conducted during some portion of FA sessions to determine the degree to which independent observers record the same level of each independent variable. IOA is often used as a measurement of reliability and accuracy (Johnston & Pennypacker, 1980). During research studies, IOA is conducted across a portion of sessions for each FA test condition, but it is unclear how often it is happening in practical settings. In fact, practitioners often identify lack of support and trained staff as one of the major barriers to conducting an FA (Roscoe, Phillips, Kelly, Farber, & Dube, 2015). Due to limited staffing, only one individual may be available or trained to take data during the assessment. If availability is the issue, individuals may alternatively conduct IOA for the session through video tape, but video resources are sometimes limited as well. Based on training, resources, and client needs, the recommendation is to complete IOA or some type of measurement accuracy check as frequently as possible.

Data Analysis

Efforts to train practitioners often focus exclusively on the implementation of FA test conditions. Fewer practitioner training studies focus on the graphing and data analysis components of the FA (Chok, Shlesinger, Studer, & Bird, 2012; Lambert et al., 2014). The data collected during standard FAs is typically formatted into a multi-element line graph with each data point representing one session of condition. However, data may look different for FAs that involve different measures (e.g., latency or trial-based formats).

Due to the focus on multi-element line graphs across literature and in clinical practice, analysis of FA data in research and practice typically involves visual analysis. Informally, visual analysis involves comparing test condition data to data in the control conditions. Still, several researchers have detailed more formal methods for visual analysis (Chok et al., 2012; Danov & Symons, 2008; Hagopian, Fisher, Thompson, Owen-DeSchryver, Iwata, & Wacker, 1997; Roane, Fisher, Kelley, Mevers, & Bouxsein, 2013). Hagopian et al. (1997) were the first researchers to examine alternative methods to train and improve upon methods of visual inspection for FA data. The authors found that advanced students in behavior analysis typically did not agree on behavior function more than 50% of the time without additional training. After recognizing this issue, specific methods were then taught to determine differentiation among conditions by drawing criterion lines and making judgments based on set criteria. After training, participants had much high inter-rater agreements among each other, as well as with experts (Hagopian et al., 1997). This type of detailed training and analysis is key to ensuring therapists identify the correct behavioral function and choose the appropriate intervention and functional replacement behavior. Chok et al. (2012) also successfully utilized the Hagopian et al. (1997) procedures in their research on training FA data analysis. However, the Hagopian et al. (1997)

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and Chok et al. (2012) studies were limited in that they only utilized situations where there were ten data points for each condition. Then, in 2013, Roane et al. addressed this limitation by adjusting procedures for conditions of differing lengths.

Recent formalized visual analyses allow individuals to now reliably provide information about FAs and subsequent recommendations for treatment (Chok et al., 2012; Hagopian et al., 1997; Roane et al., 2013). However, implementation of these analyses in practice versus research is unknown, and formalized personnel training is necessary.

Personnel Training

Many of the professionals involved with conducting FAs have differing amounts of training in behavior analysis and the specific procedures that are integral to a high-quality FA. The entire FBA process can be difficult to train, but FAs can be even more complex due to various conditions and complex data collection. However, researchers have identified and validated training procedures that work well with individuals across disciplines and educational backgrounds.

The various training techniques often include a behavioral skills training (BST) model. This typically involves instruction, modeling, practice, and feedback (Miles & Wilder, 2009; Sarokoff & Sturmey, 2004). Variations of this type of BST for FA include the addition of video modeling and pyramidal training (Carr & Fox, 2009; Erbas, Tekin-Iftar, & Yucesoy, 2006; Iwata et al., 2000; Lambert et al., 2014; Moore & Fisher, 2007; Pence, St. Peter, & Giles, 2014). Iwata et al. (2000) were able to train inexperienced individuals in FA implementation very quickly (in less than three hours). Furthermore, Lambert et al. (2014) extended Iwata et al. (2000) procedures and found graphing and data analysis could be trained in a similar manner. Each FA training study taught a variety of skills related to the assessment. Across the board, the studies

were limited in that they did not address what needs to occur prior to the FA procedures. Many also did not provide procedures for data collection and analysis. Despite the promising results on training FBA skills, Roscoe et al. (2015) found the lack of adequately trained professionals remains as one of the biggest barriers to conducting FAs. The development of expert-validated procedures for conducting an FA, such as task analyses for the entire assessment, would be a helpful first step in developing and disseminating programs to train and maintain high fidelity FA skills for practitioners.

Though thorough reviews of FA literature have been completed, the essential components of FA training procedures are still not well-validated. In the current literature, individuals frequently refer to the Iwata et al. (1982/1994) seminal article when describing their FA methodology (Beavers et al., 2013, p. 7). Individuals usually have not provided a step by step procedure (i.e., task analysis) on how they completed an FA. Those researchers who provide specific step by step information (e.g., Chok et al., 2004) are the exception; however, they do not describe how the steps were selected and validated. This becomes potentially problematic when individuals are going beyond the conditions described by Iwata and colleagues in their original paper. A task analysis providing information on essential components for FAs would be pertinent to engage in task clarification during feedback sessions for training and assessment integrity purposes.

<center>Task Analysis and Task Clarification</center>

Task analysis refers to the process of ''breaking down a complex skill into smaller, teachable units, the product of which is a series of sequentially ordered steps'' (Cooper, Heron, & Heward, 2007, p. 437). Tyner and Fienup (2016) added to this definition by suggesting that a task analysis is also the "permanent product of that process used for instruction purposes" (p.

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379). Task analyses will differ depending on the setting and task at hand. However, research on the necessary components for any proper task analysis (i.e., one that can be followed to implement a task accurately) indicates "a task analyst aims to understand a task/work, its context, and performance for the purpose of improving or supporting effectiveness, efficiency, and safety via design or training" (Adams, Rogers, & Fisk, 2013, p. 1010). Adams et al. (2013) suggest task analyses require individuals to gather information about the task, organize this information into a formal document, and then test the task analysis. Task clarification is often involved in the creation and then monitoring of task analyses.

Task clarification is defined as "precise specification of the behavioral components of a job" (Crowell, Anderson, Abel, & Sergio, 1988, p. 65). Individuals within organizational behavior management (OBM) have utilized task clarification, along with other various feedback interventions, to improve performance within business settings for a long time. One example of task clarification in OBM is illustrated through a study involving improvement of staff performance in a coffee shop that was in danger of closing down due to poor performance (Pampino, Heering, Wilder, Barton, & Burson, 2004). Task clarification alone typically does not affect performance enough to lead to mastery performance. However, the task analyses and clarification may lead to marked improvement and provide an outline for components to address during feedback sessions.

In the field of behavior analysis, professionals often utilize task analyses to create protocols for the individuals they serve to ensure a skill is broken down into its essential steps. Though these protocols are often successful for teaching skills to clients, behavior analysts often fail to introduce these types of procedures for training essential skills for fellow staff or employees in the clinical setting. A few studies have focused on the impact of task analysis on

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implementation of behavior assessment and intervention procedures (Kohr, Parrish, Neef, Driessen, and Hallinan, 1988; Shapiro, Kazemi, Pogosjana, Rios, & Mendoza, 2016; Tyner & Fienup, 2016).

When conducting behavioral assessment and intervention procedures, procedural integrity is of utmost importance to ensure individuals receive the best and most appropriate assessments and subsequent interventions (Peterson, Homer, & Wonderlich, 1982; Prograr, Perrin, DiNovi, & Bruce, 2001). Using task analyses and task clarification for assessments is the natural start to ensuring this procedural integrity.

Kohr et al. (1988) outlined a procedure for validating components of a task analysis to ensure procedural integrity. The validation process included informal observations, a literature review, and advisory panel recommendations. The task analysis was then used as part of a BST model to train parents in appropriate communication strategies. The training was successful in improving parent communication and would not have been possible without first validating the essential components of this type of communication. Much later, Tyner and Fienup (2016) studied the effects of adding antecedent stimuli and performance criteria to a task analysis on graphing performance. The authors found the participants who had supplemented descriptions also had more accurate graphing behavior than those with the original task analysis.

Shapiro et al. (2016) also examined the effects of initial versus modified task analyses on training individuals but did so with stimulus preference assessments instead of graphing. As expected, the initial simple written instructions did not impact the behavior of the participants. The next step focused on a "self-instructed package," where the instructions were modified to provide less technical jargon and more pictures and additional prompting systems. The results were mixed with some individuals still requiring feedback before reaching mastery criteria.

However, if practitioners can bring a majority of individuals without any background experience to mastery criteria without outside feedback (e.g., supervisory input), this can heavily impact personnel training procedures.

In summation, task analyses and task clarification can assist with creating consistent, valid procedures for assessments. Task analyses and further task clarification can assist with training and ensuring procedural integrity across staff. FA is one assessment that may benefit from identifying pertinent or essential steps and later creation of a task analysis for training and implementation of FAs. One way to assess recommendations and utilization is using survey research. Two recent studies (Oliver, Pratt, & Norman, 2015; Roscoe et al., 2015) address the utilization of all FBA components across clinical practice through survey research. Both studies reported practitioners identified FA as important but that they were not utilizing the assessment frequently. The current study extended the previous survey research by identifying the steps that those who are completing FAs are utilizing, so others can be trained to better implement the procedure.

This two-part study addresses the need of identifying essential steps of FAs through a descriptive analysis composed of two interrelated studies. The first study involves interviewing nationally-known FA experts in the field of behavior analysis to determine if there is any expert consensus on the essential components of an FA. The second study involves a survey of practitioners regarding the extent to which they incorporate the expert recommended essential components during regular practice. The expert ratings and practitioner ratings are then compared to create appropriate recommendations for future researchers and practitioners. The results of this study may be beneficial to those researching, practicing, and training FAs in the field of behavior analysis.

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METHODOLOGY STUDY 1

Overview

This study involved two interrelated studies, which had a different group of participants and procedures. The entire project went through HSIRB approval and was exempt from review.

The goal of Study 1 was as follows:

Identify the degree to which experts agree on the essential components for implementing and analyzing a functional analysis.

Participant Recruitment

Participants were behavior analysts who have published multiple peer-reviewed articles, chapters, and/or books on functional analysis, hereafter called FA experts. This was not a comprehensive sample of every individual who has published on this topic, but efforts were made to identify the major contributors to the development and application of FA technology and invite their participation. These individuals were typically BCBA-Ds, but some were practitioners in behavior analysis without BCBA-D certification who had completed a multitude of functional analyses and have contributed significantly to behavior analytic literature. Individuals were recruited to participate in a one to one interview with the primary investigator that took approximately 30-45 minutes to complete. Participants were first contacted through email (see Appendix A). Once the participant responded showing interest in the study, an interview was scheduled. The interview then took place online through Zoom Video Communications (or recorded phone call if the participant was unable to participate through video). The video was recorded through Zoom software, and the file was saved to the primary

investigator's password protected laptop in a password-protected file. The videos were then transferred to an encrypted password protected flash-drive. The primary investigator contacted 15 FA experts and 11 of these participated in this study.

Setting and Materials

All analyses were conducted at Western Michigan University and through online communication. The participants were composed of individuals from multiple locations; therefore, requiring communication to occur online. The materials required for this study included the interview based on the literature about functional analyses (see Table 1 for the interview components), webcam, and laptop computer.

Data Collection

Each participant was assigned a participant ID number, so that his/her name was not associated with the responses. A master list with participant ID and associated name was only available to the primary investigator and stored on the primary investigator's password-protected laptop and on an encrypted password-protected flash-drive. Data were collected by the primary student investigator during the interview with each expert in a password-protected excel file. The data were averaged for each component across participants. Additional recommended steps were also added to the survey for Study 2. The data were stored on the primary investigator's password protected computer and then transferred to an encrypted password-protected flash drive at the end of the study.

Procedure
Preparation of Component List

A comprehensive literature review of FAs was first completed by the primary investigator to identify steps that are suggested as "necessary" for implementing and analyzing an experimental FA. The literature review consisted of searching through journals, as well as

books, to examine the typical components of training/teaching individuals to complete FAs. Keywords included "functional analysis" and "training." Standard functional analysis (i.e., protocols referencing Iwata et al., 1982/1994), as well as brief functional analysis training components (e.g., Derby et al., 1992) were included. The exclusionary criteria included training on any other forms of functional analysis (i.e., trial-based, latency, synthesized, and pre-cursor). These types of functional analyses are pertinent to the field but may be adapted from the information provided.

All articles and books were reviewed to create a list of frequently mentioned FA components including: preassessment information (i.e., initial assessments, safety concerns, and consent procedures), condition information, data collection, graphing, and analysis and treatment. Based on this literature review, an FA component list was created and divided into each of the above identified sections.

Functional Analysis Interview

The component list was reviewed by two board certified behavior analysts (BCBAs), as well as by two graduate students who are currently working on BCBA coursework. These individuals provided minor edits to the formatting and structure of the components. The list was then organized with directions for the experts who would complete the interview.

Participants first scheduled an interview with the primary investigator through email after receiving the recruitment email. The primary investigator then provided the consent document (see Appendix B) and had the participant agree to this information over email. The consent document was reviewed again with each participant before the interview began to receive additional recorded verbal consent. Each expert also had access to the interview via a pdf

document, so they could refer to specific information and graphics. The participant then interviewed through the Zoom online website, and the video was recorded for future IOA data.

Basic anonymous participant demographic information was collected to assess certification, FA background, and FA experience. Participants were then asked to identify whether they agreed that each component was essential for FA implementation and analysis (on a scale of 1 to 5- 1- Strongly Disagree, 2-Disagree, 3- Neutral, 4- Agree, and 5- Strongly Agree). In order for a response to be categorized as one that experts agreed was essential, it must have been at a rating of 4 or higher. Following each response, the individuals were asked if they wanted to provide any rationale for their response in an open-ended format. At the end of the interview, the individuals were also asked to identify specific components they determined essential but that were excluded from the interview. These components were then compiled from all experts to supplement the survey for Study 2. The primary investigator recorded each response in a password-protected excel file under the participant ID number. Each expert was sent an email following the interview to thank him/her for participating in the study.

<p align="center">Interobserver Agreement (IOA)</p>

IOA was collected for 4 of the 11 interviews (36%) and IOA was 99%. There was one disagreement for a question, and so the primary investigator re-watched the video to check on the response and made the adjustment to the data.

RESULTS STUDY 1

The results of the current study are presented by each section of components (i.e., pre-assessment information, condition information, attention condition, escape condition, tangible condition, alone condition, control condition, data collection and graphing, and analysis and treatment). Demographic information is first presented to identify participant background information. Table 1 below lists each component assessed in the interview and the associated keyword utilized in the graphs to represent each question. Open-ended question comments are listed in Appendix E for reader reference.

Table 1

Component Questions and Associated Keywords

Question/Component	Keyword (on graphic display)
PA-1 Conduct an indirect assessment (e.g., *Functional Assessment Interview (FAI)*, Questions About Behavior Function (QABF), Functional Assessment Screening Tool (FAST)).	Indirect
PA-2 Conduct a descriptive assessment, which includes direct observation of the client behavior. This is frequently done through Antecedent Behavior Consequence (ABC) data collection.	Descriptive
PA-3 Conduct preference *and demand assessments*. The information from these assessments will identify moderately and highly preferred items/activities (e.g., types of attention and tangible items) *as well as task demands to be utilized in the FA conditions.*	Pref/Demand
PA-4 Determine whether an FA would be appropriate to conduct. Consider the following: 1. Severity of challenging behavior 2. Social significance of challenging behavior	Appropriate
PA-5 Ensure the following safety precautions are taken: 1. Involve enough experienced therapists to maintain safety. 2. Have protective equipment available, for the client and for personnel. 3. Set criteria for termination of sessions.	Safety
PA-6 Obtain consent for the FA assessment procedure from the client and/or guardian utilizing a written consent form. (This will inform the client/guardian of privacy and confidentiality issues and of the benefits and risks of the FA procedure.)	Consent
PA-7 Identify the location for the FA procedure. (The location must have enough room for the procedure, while having minimal distractor/unsafe items.)	Location
PA-8 Operationally define the challenging behavior of interest.	Define
PA-9 Measure a single challenging behavior to target throughout the functional analysis.	One bx
PA-10 Measure a challenging behavior and any additional behaviors that appear to be in the same response class (e.g., behaviors that occur earlier in the response hierarchy or sequence of behaviors that culminate in the challenging behavior).	Resp Class
PA-11 Design and operationalize the type of data collection procedure and create the data sheet.	Data sheet

Table 1- Continued

CI-1 Implement each test condition including, at minimum, the following test conditions: attention, escape, tangible, alone, and control (play).	Conditions
CI-2 Present discriminative stimuli associated with each test conditions (e.g., different colored t-shirts for each condition).	Discriminative
CI-3 Run each test condition for at least 10-15 minutes.	Time
CI-4 Repeat each test condition at least 4-5 times, either across sessions or within a single session.	Runs
CI-5 Randomly alternate between test conditions, so one condition does not consistently precede or follow another condition.	Random
CI-6 *Conduct conditions in a fixed sequence to control for motivating operations and carryover effects.*	Fixed
AC-1 Before the session begins, provide attention to the client for 15-30 seconds and then remove the attention.	Before
AC-2 Responding to Challenging Behavior: Provide attention in the form of a reprimand and physical attention.	Challenging
AC-3 Responding to Inappropriate behavior that is not targeted by the FA: DO NOT provide attention.	Inappropriate
AC-4 Responding to Appropriate behavior: DO NOT provide attention.	Appropriate
EC-1 Choose demands (known to individual) that may be physically prompted.	Demands
EC-2 Responding to Challenging Behavior: Provide a 15-30 second break from task demands by stating "Okay, you don't have to," and removing task materials.	Challenging
EC-3 Responding to Inappropriate Behavior that is not targeted by the FA: Ignore and continue to present task demands following the 3- step prompting hierarchy (verbal, gesture, physical).	Inappropriate
EC-4 Responding to Appropriate Requests to stop the task demands or requests for help with the task demands: Ignore and continue to present task demands following the 3- step prompting hierarchy (verbal, gesture, physical).	Appropriate
EC-5 Responding to Completion of task demand: Provide brief praise, and continue task demands.	Completion
TC-1 Before the session begins, allow the client to play with a highly preferred toy/item or engage in a preferred activity for 15- 30 seconds and then remove the item/activity.	Before
TC-2 Responding to Challenging behavior: Provide the preferred item for 15-30 seconds. After this time, state "my turn" and take the item back. If the individual begins to engage in the challenging behavior as you pull away, you may give the item back immediately.	Challenging
TC-3 Responding to Inappropriate and Appropriate Behavior not targeted by the FA: Do not provide access to the identified toy/item or activity.	Inapp/Appropriate

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Table 1- Continued

ALC-1 Leave the client alone in the room without any therapists or materials present. Observe and record the challenging behavior through an observation window *(or area non-visible to client)* for the entire session.	Alone
ALC-2 If the individual engages in high levels of dangerous challenging behaviors, end the condition to provide one to one care.	Safety
ALC-3 *If the target behavior requires interaction with a peer or adult (or the person cannot be left alone in a room), conduct a no-interaction condition where the therapist remains in the room but does not interact with the client throughout the entire condition.*	No interaction
CC-1 Deliver attention on a fixed time schedule (e.g., every 15-30 seconds).	Fixed
CC-2 Provide access to 1-2 moderately preferred items throughout the session.	Access
CC-3 Responding to Challenging behavior: Do not deliver attention within 5 seconds of that behavior.	Challenging
CC-4 Responding to Inappropriate behavior not targeted by the FA: Continue to provide attention on a fixed time schedule regardless of the temporal relationship with the non-targeted inappropriate behavior.	Inappropriate
CC-5 Responding to Appropriate behavior: Interact with client and answer appropriate questions.	Appropriate
CC-6 DO NOT place any demands or ask questions throughout the Control/Play session.	Demands
DC/G-1 Collect data in a manner that it can be linked to each separate test *and control* condition.	Linked
DC/G-2 Assign another individual to collect data concurrently with the primary data collector *during a portion of the conditions* to ensure interobserver agreement (IOA).	IOA
DC/G-3 Using a standard behavior analysis charting protocol, create a multi-element line graph that displays data across repeated sessions. Connect the repeated measures within each test condition; each test condition should be represented by a separate data path. For example, the graph might look something like the following: (graph displayed)	Multi-element
DC/G-4 Create a bar graph displaying levels of behavior across each test condition. For example, the bar graph might look something like the following: (graph displayed)	Bar Graph
A and T-1 Subject the graphic displays to a visual analysis by looking for significant differences between the data paths (or behavior levels) in the test conditions *compared to the control conditions.*	Visual
A and T-2 *Conduct visual analyses of the data within the session. Create and visually inspect the graphs to assess for trends and differences between conditions.*	Within
A and T-3 Apply a standardized visual inspection protocol to identify different behavioral levels for each test condition (e.g., Roane, Fisher, Kelley, Mevers, & Bouxsein, 2013; Hagopian, Fisher, Thompson, Owen-DeSchryver, Iwata, & Wacker, 1997).	Standardized

Table 1- Continued

A and T-4 Conduct appropriate statistical analyses to determine statistically significant differences between test conditions *and control conditions*.	Statistics
A and T-5 If all test conditions have elevated levels of challenging behavior, but the results are not differentiated: Attempt to clarify or increase the salience of discriminative stimuli associated with each test condition and re-run the FA.	Salience
A and T-6 If all test conditions have elevated levels of challenging behavior, but the results are not differentiated: *Run a pairwise analysis (or test-control) analysis to better pinpoint the function between control and test condition.*	Pairwise
A and T-7 If all test conditions have elevated levels of challenging behavior, but the results are not differentiated: Run extended alone test conditions to determine whether the function is automatic (sensory reinforcement).	Alone
A and T-8 Select test conditions with greater ecological validity by observing the contextual factors that are associated with challenging behaviors.	Context
A and T-9 Take steps to reduce measurement reactivity—possibly by arranging less intrusive and observable measurement or by conducting the FA in more naturalistic settings.	Reactivity

Note. Information in italics was added or modified from the original expert interview to the practitioner survey.

Demographic Information

The study consisted of interviewing eleven experts in the field of behavior analysis. The experts consisted of eight BCBA-Ds, two BCBAs, and one individual with a variety of behavior analytic clinical and research experiences. Nine of the eleven experts reported practicing as a BCBA or BCBA-D for more than fifteen years. The experts were then asked how they learned about FAs. Figure 1 below displays the results of this question.

Figure 1. Demographic Question 3 Expert. Participants could choose as many responses as were applicable with answers as follows: a. FA was covered in one or more courses in my education, b. FA was covered in my practicum training, c. I took one or more workshops on FAs, d. I am self-taught based on reading the literature about FAs, e. I conducted research on FAs.

For the final demographic question about how many FAs they completed, all experts well surpassed the maximum answer of completing forty-one FAs.

Preassessment Information

Questions discussed within this section of the results are questions labeled as PA 1-11 in Table 1. Figure 2 displays the associated keywords for each question in the preassessment

Figure 2. Preassessment Information Expert. Expert responses are on the vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree).

information section. This section of components describes aspects of FAs that occur prior to conducting the actual experimental analysis. Eleven components were assessed across experts. However, experts, on average, did not agree that all components are always essential to completing an FA (i.e., indirect assessments, descriptive assessments, and measuring a single challenging behavior). Experts reported neutral ratings about indirect and descriptive assessments, providing rationale that this would be dependent on other available resources (e.g., time, setting, etc.). Experts disagreed that measuring one behavior at a time is essential and instead agreed that measuring behaviors in the same response class is essential. Overall, experts had some variability in recommendations but agreed that the majority of the components were essential in completing an FA.

Condition Information

Questions discussed within this section of the results are questions labeled as CI 1-6 in Table 1. Figure 3 displays the associated keywords for each question in the condition information section. This section of components describes general aspects for all test and control

Figure 3. Condition Information Expert. Expert responses are on the vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree).

conditions of the FA. Five components were assessed across experts, and eight experts recommended adding one additional component. Experts averaged ratings of disagree to neutral for all initial components in this section. Experts cited current research and recent findings to indicate traditional recommendations for conditions can be adjusted and still produce appropriate results (e.g., running 5-minute conditions, instead of 10-15-minute conditions). However, there was a lot of variability in expert responding for component CI-5 (random). The standard

deviation for expert ratings of CI-5 was 1.37, with an average standard deviation of 0.75 across

all interview questions. Eight experts within CI-5 instead recommended it is often essential to

run sessions in a fixed order, based on establishing operations (Hammond, Iwata, Rooker, Fritz,

& Bloom, 2013). Based on expert recommendations, component CI-6 (fixed) was added for

Study 2. Experts tend to agree general aspects of conditions may vary across environments,

clients, and resources.

Attention Condition

Questions discussed within this section of the results are questions labeled as AC 1-4 in

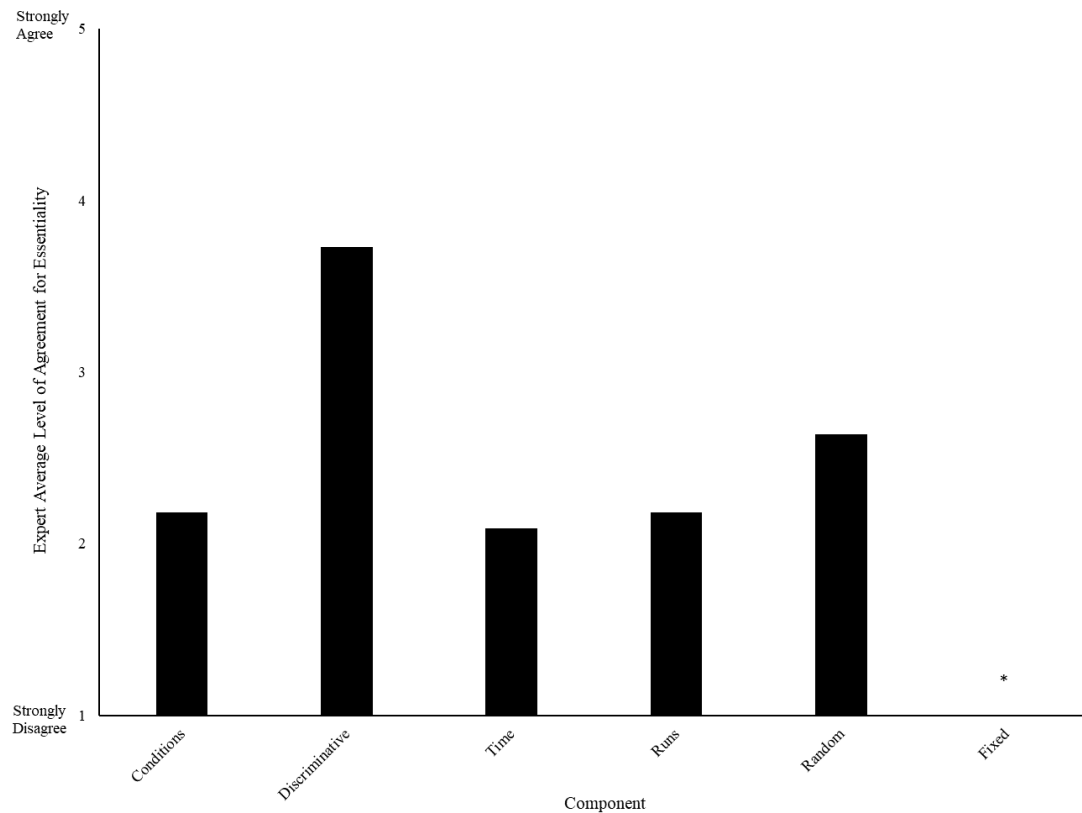Table 1. Figure 4 displays the associated keywords for each question in the attention condition

section. This section of components describes aspects if a practitioner were to run an attention

Figure 4. Attention Condition Expert. Expert responses are on the vertical axis with a scale of 1
(Strongly Disagree) to 5 (Strongly Agree).

condition. Four components were assessed across experts. Although experts agreed on what

should occur before the attention condition, and in response to appropriate and inappropriate

behavior not targeted by the FA, the experts were neutral about responding to challenging

behavior with a reprimand and physical attention. Instead, experts suggest the type of attention

should match client preference for certain types of attention, so reprimands and/or physical

attention may not always be appropriate.

Escape Condition

Questions discussed within this section of the results are questions labeled as EC 1-5 in

Table 1. Figure 5 displays the associated keywords for each question in the escape condition

section. This section of components describes aspects if a practitioner were to run an escape

Figure 5. Escape Condition Expert. Expert responses are on the vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree).
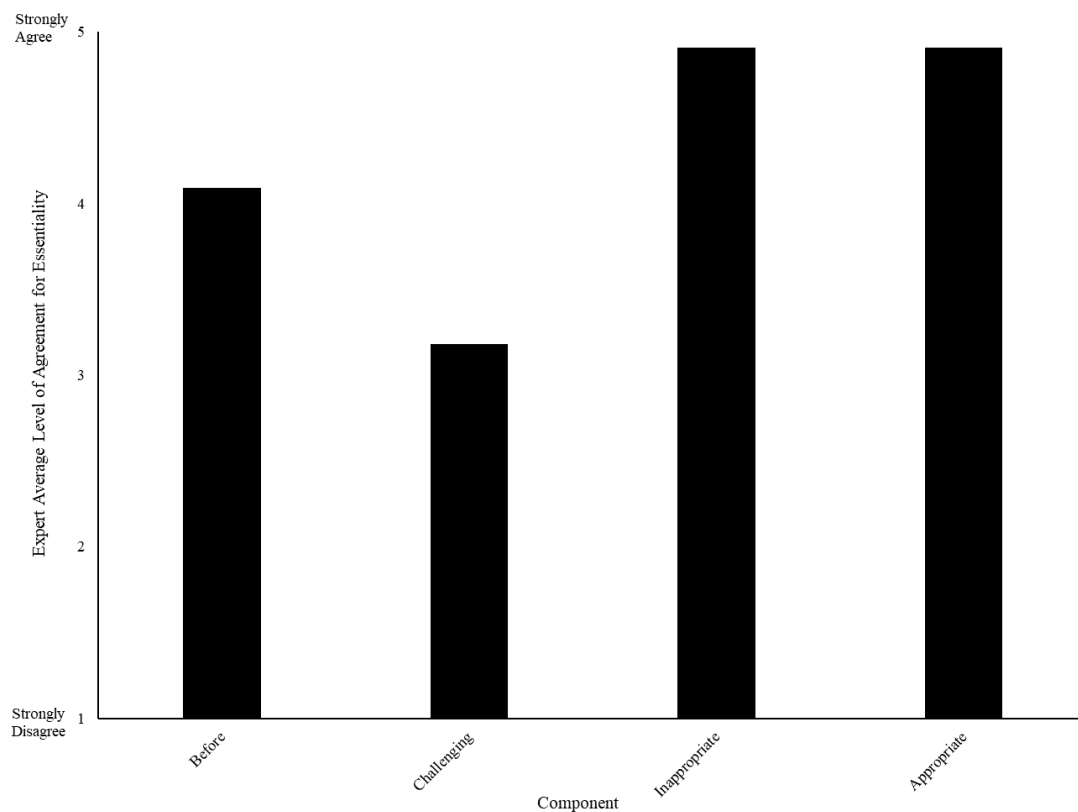
condition. Five components were rated by experts for this section. Experts agreed four

components (EC- 1, 3, 4, and 5) were essential in running an escape condition. However, four

provided a lower rating than agree for responding to challenging behavior (component EC-2).

They provided rationale that a therapist stating something like "Okay, you don't have to" may

add an unwanted attention component. Some experts also commented for EC-2 that the amount

of break should depend on the client and observations of what is part of the natural

contingencies.

Tangible Condition

Questions discussed within this section of the results are questions labeled as TC 1-3 in

Table 1. Figure 6 displays the associated keywords for each question in the tangible condition

Figure 6. Tangible Condition Expert. Expert responses are on the vertical axis with a scale of 1
(Strongly Disagree) to 5 (Strongly Agree).

section. The tangible condition section of components describes aspects if a practitioner were to run a tangible condition. Three components were assessed across experts, and experts agreed each component was essential. It is important to note however that in the interviews, many experts disagreed with running a tangible condition at all. Experts cited research stating that running a tangible condition may create false positives for a tangible function (Rooker, Iwata, Harper, Fahmie, & Camp, 2011). This issue will be discussed further in the discussion section.

Alone Condition

Questions discussed within this section of the results are questions labeled ALC 1-3 in Table 1. Figure 7 displays the associated keywords for each question in the alone condition
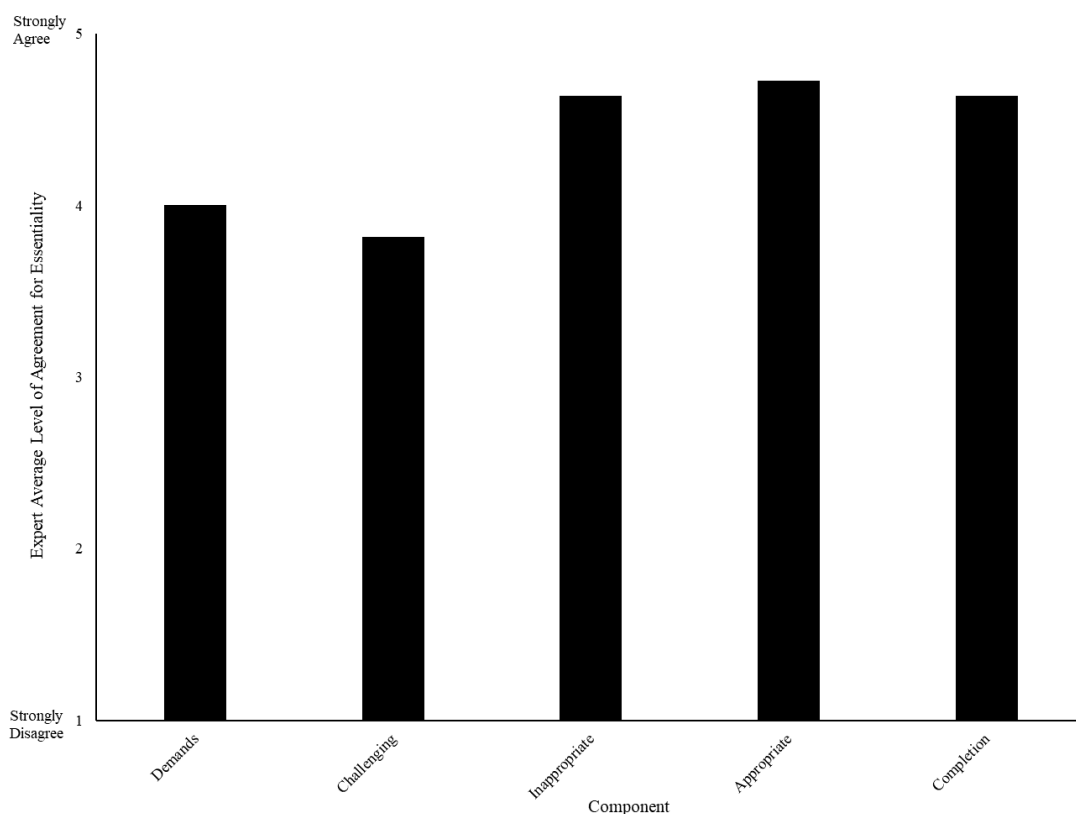

Figure 7. Alone Condition Expert. Expert responses are on the vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree).

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section. This section of components describes aspects if a practitioner were to run an alone

condition. Two components were assessed across experts, and the final component was an

additional expert recommendation from seven experts. Experts rated the first component (ALC-

1) at about a 3.9, right below agreement. Experts reported that they typically vary what the alone

condition looks like, depending on the challenging behavior of interest. Seven experts suggested

instead that an essential component be added to include a no interaction condition. Experts

found safety criteria to be essential but stated rationale that this must be outlined before the entire

assessment begins and not just right before the alone condition begins.

Control Condition

Questions discussed within this section of the results are questions labeled as CC 1-6 in

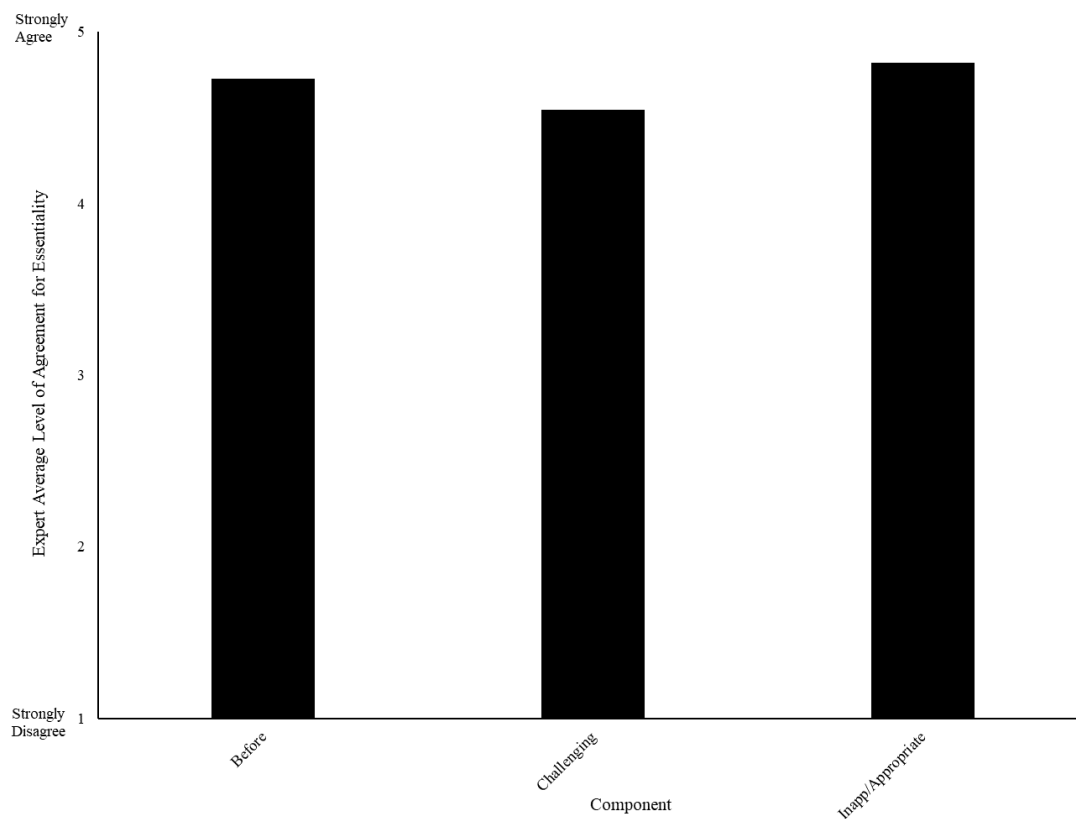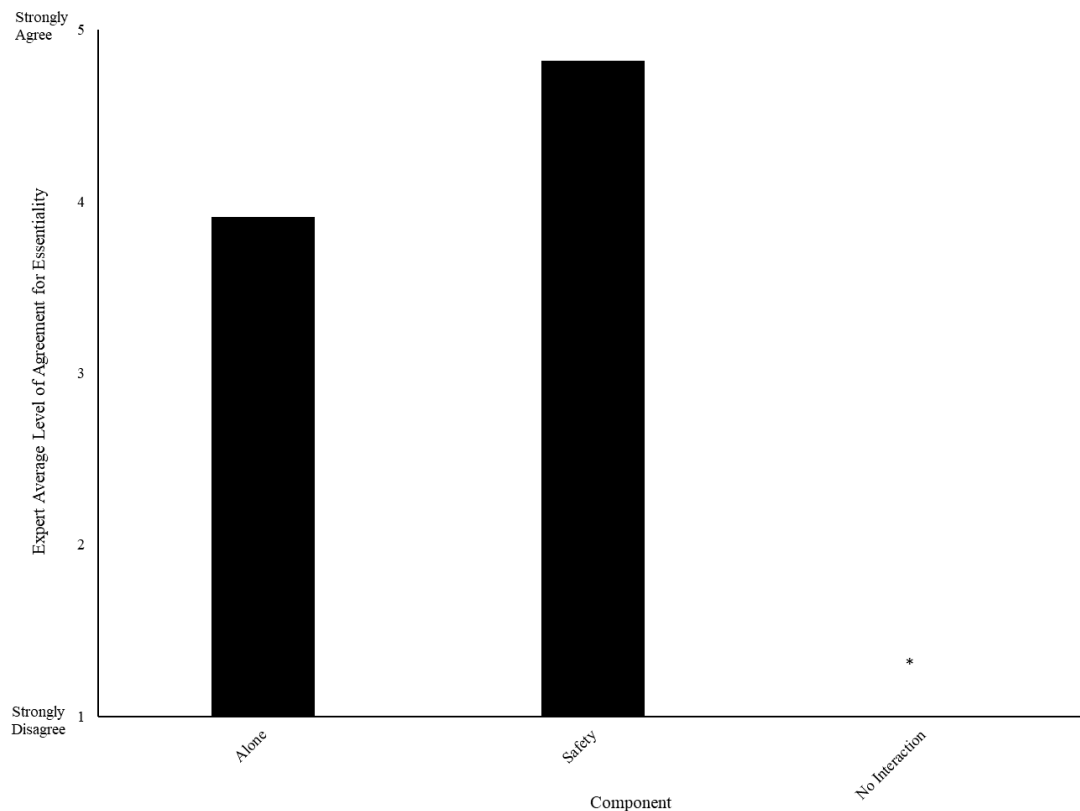Table 1. Figure 8 displays the associated keywords for each question in the control condition

section.

Figure 8. Control Condition Expert. Expert responses are on the vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree).

This section of components describes aspects of a control or play condition to be run to compare against other test condition levels of behavior. Six components were assessed across experts. Experts' average rating for CC-1 (fixed) fell exactly at agreement with a rating of 4.0. Several experts provided rationale to explain that they will often provide attention on a continuous schedule instead of a fixed time schedule. Experts also rated component CC-2 (access) as neutral, with many experts providing rationale that they utilized highly preferred items instead of moderately preferred items. CC-2 component had high variability for experts with a standard deviation of 1.40, again with the average of 0.75 across all components. Experts were neutral on the essentiality of component CC-3 (challenging). Experts stated that the response to challenging behavior would often instead involve acting however the therapist was

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prior to the challenging behavior, even if attention was being delivered. The last two

components involved experts agreeing on essentiality.

<div align="center">Data Collection and Graphing</div>

Questions discussed within this section of the results are questions labeled as DC/G 1-4

in Table 1. Figure 9 displays the associated keywords for each question in the data collection
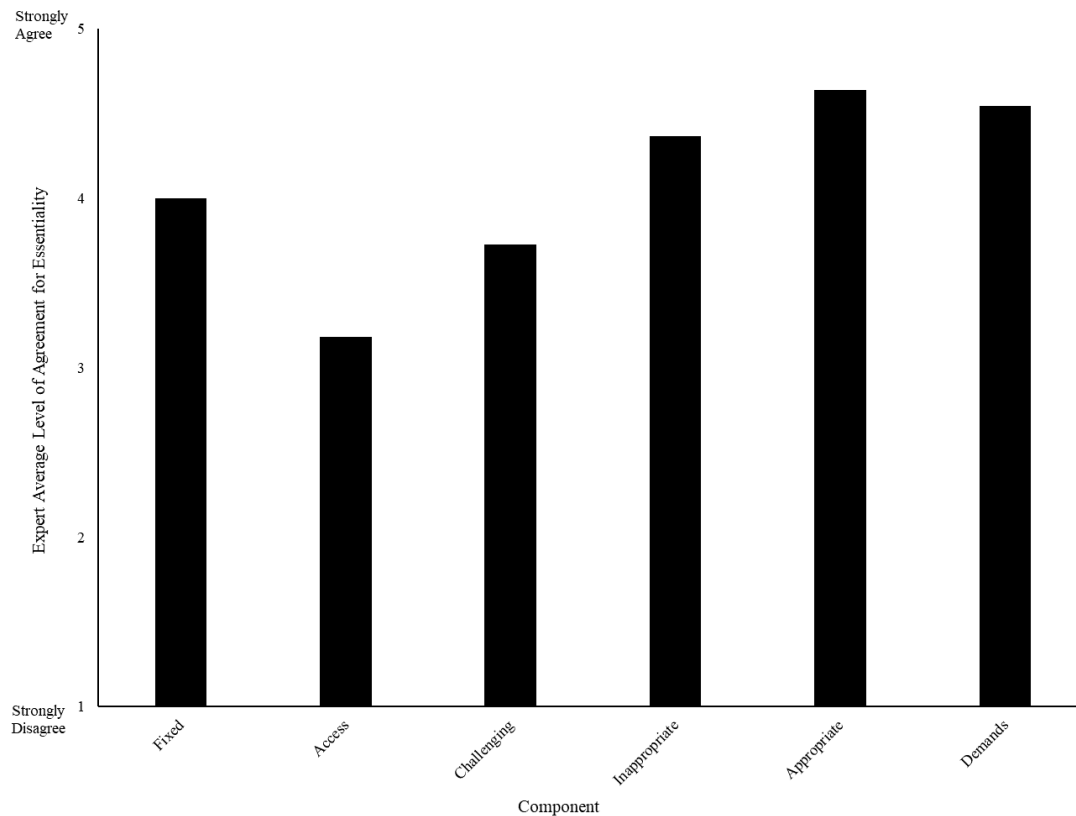
and graphing section. This section of components describes aspects related to how data is

Figure 9. Data Collection and Graphing Expert. Expert responses are on the vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree).

collected during session and then visually displayed following sessions. Four components were

assessed across experts. All experts strongly agreed on component DC/G-1. Experts reported

conducting IOA (DC/G-2) as essential, but not for every single session; so, the original

component was later modified for study 2 to include "during a portion of the conditions."

Experts agreed multi-element graphs (DC/G-3) were essential, whereas bar graphs (DC/G-4) were not.

Analysis and Treatment

Questions discussed within this section of the results are questions labeled A and T 1-9 in Table 1. Figure 10 displays the associated keywords for each question in the analysis and
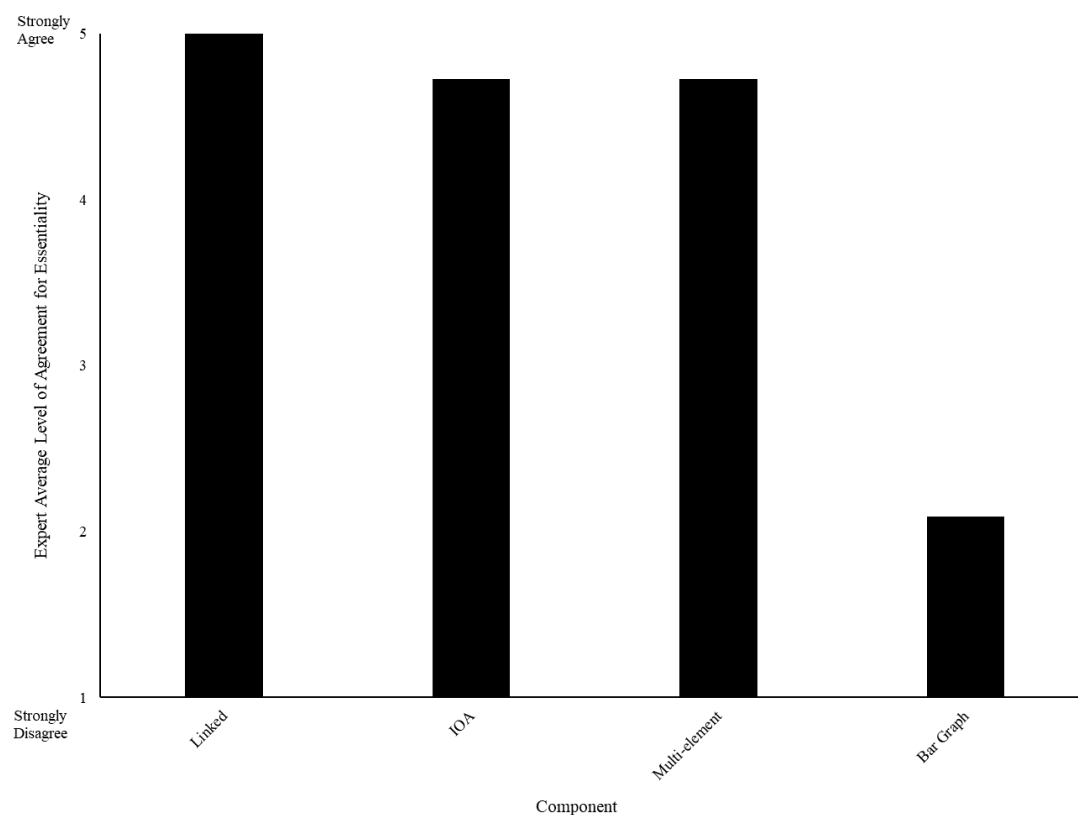

Figure 10. Analysis and Treatment Expert. Expert responses are on the vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree).

treatment section. This section of components describes aspects related to how data displays are analyzed and what to do if results are unclear to the therapist. Components A and T- 1, 3, 4, 5, 7, 8, and 9 were assessed across experts, and components A and T- 2 and 6 were both additional expert recommendations. Four experts recommended A and T -2 and four experts recommended A and T- 6. Experts rated A and T-1 as neutral, often with rationale involving the wording of the

component. The variability for this component was high amongst experts with a standard deviation of 1.54, with the average of 0.75 across all components. For Study 2, the component was clarified to explain that analysis would look at differences between test and control conditions, instead of simply between test conditions. Four experts also mentioned completing some of the visual analyses within session, instead of following the assessment. This component (A and T-2) was added to study 2. Experts varied on their recommendations for formalized visual analysis (A and T- 3) and extended alone condition (A and T- 7) components and averaged neutral overall. Overall, the experts averaged a strongly disagree rating for statistical analyses (A and T-4) for FAs. Experts were neutral on A and T-5 (salience) but recommended an additional essential component of completing pairwise analyses when the function is unclear. The final two components related to what to do when levels of challenging behaviors are low, and experts agreed each component was essential.

Overall, there was agreement among experts for many recommendations for essential FA components. Experts had some additional recommendations, and these were assessed in Study 2. The next section will include discussion on practitioner ratings of utilization compared to expert recommendations from Study 1.

METHODOLOGY STUDY 2

Overview

The goal of study 2 was as follows:

Identify the extent to which practitioners incorporate expert-validated components in their implementation of functional analyses in clinical practice.

Participant Recruitment

Potential participants were individuals who at minimum had BCBA or BCBA-D certification and who self-identified as having completed several FAs during their career. These participants were recruited through the Behavior Analysis Certification Board (BACB) with the email found in Appendix C. Potential participants were notified that four participants would be chosen at random to receive a $25 Amazon gift card. The BACB was contacted following HSIRB approval to obtain permission to send the survey out through the BACB email list. The BACB sent an initial email out with survey information and then sent the same email, as a follow up, one week later. Participants had to have participated in at least 5 functional analyses in the past 3 years to meet inclusionary criteria for the survey. Participants participated in the survey by clicking the link in the BACB email. The email prompted participants to contact the primary student investigator with any questions throughout the survey. For this study, the survey reached approximately 18,000 certified individuals, 378 participants began the study, 74 were excluded based on exclusionary criteria, and 198 completed the entire survey. The following results are based on the 198 participants who completed the entire survey.

Setting and Materials

As in Study 1, all analyses were conducted at Western Michigan University and through online communication. The participants were contacted through the BACB, and then completed the survey online through Qualtrics Survey program. The materials required for this study included the Qualtrics Survey program, the supplemented component questions based on the results of the expert interviews (see Table 1 for the survey questions), and four $25 Amazon e-gift cards.

Data Collection

Data included basic participant demographic information to assess certification, FA experience, and confidence in completing FAs. Then, data were collected for usage of components using a Likert scale rating system in addition to some open-ended response opportunities. All data were collected and analyzed through the Qualtrics survey program and transferred to a password-protected Excel file for further analysis. Participants provided email addresses if they wanted to be included in the gift card drawing. Survey data were collected anonymously, and the data were stored on the primary investigator's password-protected computer and transferred to a password protected flash drive at the end of the study.

Procedure

The participants completed the survey online anonymously through Qualtrics Survey program. They were first recruited through the BACB email by reading information about the study and exclusionary criteria. They then clicked on the Qualtrics email link and were directed to the survey. Once an individual opened the survey, the consent document information was made available (see Appendix D). Participants then began to answer basic demographic questions as described above. Participants would answer the final demographic question about

how many FAs they participated in. If the participants answered "less than 5," the survey ended

because their data would have been excluded based on exclusionary criteria outlined in the

original email and consent document. Anyone who answered with "5-10," or above, was given

the opportunity to begin the Likert scale questions and the remainder of the survey. Participants

were asked to identify how often they engage in each of the components identified in Study 1. A

Likert rating scale of 1-5 for usage (1- Never, 2- Rarely, 3- Sometimes, 4- Often and 5- Always)

was given for each step. Following each section of questions, there was an opportunity for

individuals to provide rationale or explanation in an open-ended format (see Appendix E for

these comments). At the completion of all surveys, four participants were chosen through a

random number generator to receive a $25 Amazon e-gift card.

RESULTS STUDY 2

The results of the current study are presented in the same way as Study 1, by each section of components. Demographic information is first presented to identify practitioner background information. Then expert recommendations are compared directly to practitioner (BCBA and BCBA-D) utilization for each component section. Additional discussion describes differences amongst BCBAs and BCBA-Ds within the practitioner group. Some questions were amended or added after the expert interview was completed, and these changes are be noted in Table 1. Open-ended question comments are listed in Table 2 in Appendix E for reader reference.

Demographic Information

The practitioner survey consisted of 198 individuals practicing in the field of behavior analysis. The participants were made up of 39 BCBA-Ds, and 159 BCBAs. Figure 11 displays the range of experience of the survey participants.

Figure 11. Demographic Question 2 Practitioner. The display provides information related to practitioner experience as a BCBA or BCBA-D.

Practitioner responses for "number of FAs they participated in" were distributed evenly across each potential response option (apart from "less than five," which previously excluded participants from the study). The practitioners were then asked how they learned about FAs. Figure 14 below displays the results of this question. As expected, practitioners now learn more about FAs through educational courses and workshops, as compared to experts who conducted much of the early research on FAs.

Figure 12. Demographic Question 4 Practitioner. Participants could choose as many responses as were applicable with answers as follows: a. FA was covered in one or more courses in my education, b. FA was covered in my practicum training, c. I took one or more workshops on FAs, d. I am self-taught based on reading the literature about FAs, e. I conducted research on FAs.

Practitioners were asked an additional question about their confidence in completing FAs. Over 80% of the practitioners rated their confidence as a 4 or above on a scale of 1 (not at all confident) to 5 (extremely confident). No practitioners rated confidence at a rating of "not at all confident."

<div align="center">Preassessment Information</div>

Questions discussed within this section of the results are questions labeled as PA 1-11 in Table 1. Figure 13 displays the associated keywords for each of the eleven components in the preassessment information section.

Figure 13. Preassessment Information Comparison. Expert responses are on the primary vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). Practitioner Responses are on the secondary vertical axis with a scale of 1 (Never Utilize) to 5 (Always Utilize).

As apparent in Figure 13, practitioners are implementing all preassessment components often to always in practice. No significant differences were found between BCBAs and BCBA-Ds. Expert recommendations aligned with practitioner utilization for some components (i.e., preference and demand assessments, determining when an FA is appropriate, considering safety issues, consent, location, operational definitions, and data sheet creation). However, other components (i.e., indirect assessments, descriptive assessments, and measuring a single challenging behavior) did not align with practitioner utilization. Practitioners are engaging in indirect and descriptive assessments often, while experts are neutral on whether these are essential. Practitioner ratings for both questions related to what behaviors to measure did not

align with expert recommendations. Practitioners reported simultaneously often measuring a single challenging behavior and often measuring behaviors in the same response class. Overall, practitioners are implementing the preassessment components that experts agree are essential. However, practitioners may be engaging in additional components more often than is necessary (e.g., indirect and descriptive assessments).

Condition Information

Questions discussed within this section of the results are questions labeled as CI 1-6 in Table 1. Figure 14 displays the associated keywords for each question in the condition information section.

Figure 14. Condition Information Comparison. Expert responses are on the primary vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). Practitioner Responses are on the secondary vertical axis with a scale of 1 (Never Utilize) to 5 (Always Utilize).

Practitioners reported utilizing each of these components at least some of the time. No significant differences were found between BCBAs and BCBA-Ds. However, like ratings amongst experts, there was a lot of variability in practitioner responding for component CI-5 (random). The standard deviation for practitioner ratings was 1.35 with an average of 0.92 across all questions. Practitioners report sometimes utilizing fixed sequences (CI-6) that experts recommended. In general, some practitioners may be engaging in traditional recommendations and not updating procedures to align with more recent research.

Attention Condition

Questions discussed within this section of the results are questions labeled as AC 1-4 in Table 1. Figure 15 displays the associated keywords for each question in the attention condition section.

Figure 15. Attention Condition Comparison. Expert responses are on the primary vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). Practitioner Responses are on the secondary vertical axis with a scale of 1 (Never Utilize) to 5 (Always Utilize).

Practitioners are often implementing most of the components recommended by experts. Interestingly, when practitioner data for CI-2 (challenging) is split between BCBAs and BCBA-Ds, this question leads to a rating of utilizing "often" for BCBA-Ds and "sometimes" for BCBAs. With the experts' recommendation of individualizing types of attention delivered contingent upon challenging behavior, practitioners with less experience may need more training on identifying different types of preferred attention.

Escape Condition

Questions discussed within this section of the results are questions labeled as EC 1-5 in

Table 1. Figure 16 displays the associated keywords for each question in the escape condition

section.

Figure 16. Escape Condition Comparison. Expert responses are on the primary vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). Practitioner Responses are on the secondary vertical axis with a scale of 1 (Never Utilize) to 5 (Always Utilize).
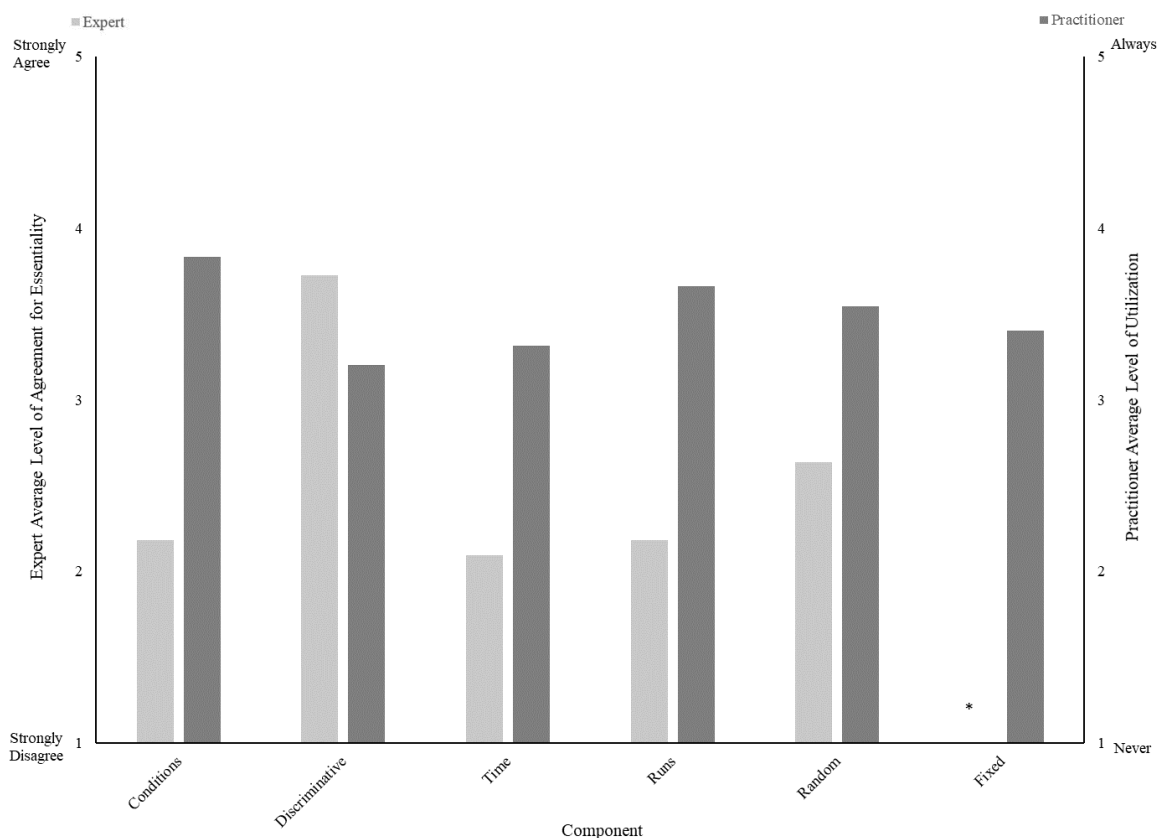
Four out of five components (EC-1, 3, 4 and 5) had ratings that aligned expert

recommendation to practitioner utilization. No significant differences were found between

BCBAs and BCBA-Ds. Based on expert recommendations for responding to challenging

behavior (EC-2), practitioners may need to adjust the responses to challenging behavior to

eliminate the verbal statement and adjust the amount of break to be more individualized per client.

Questions discussed within this section of the results are questions labeled as TC 1-3 in Table 1. Figure 17 displays the associated keywords for each question in the tangible condition

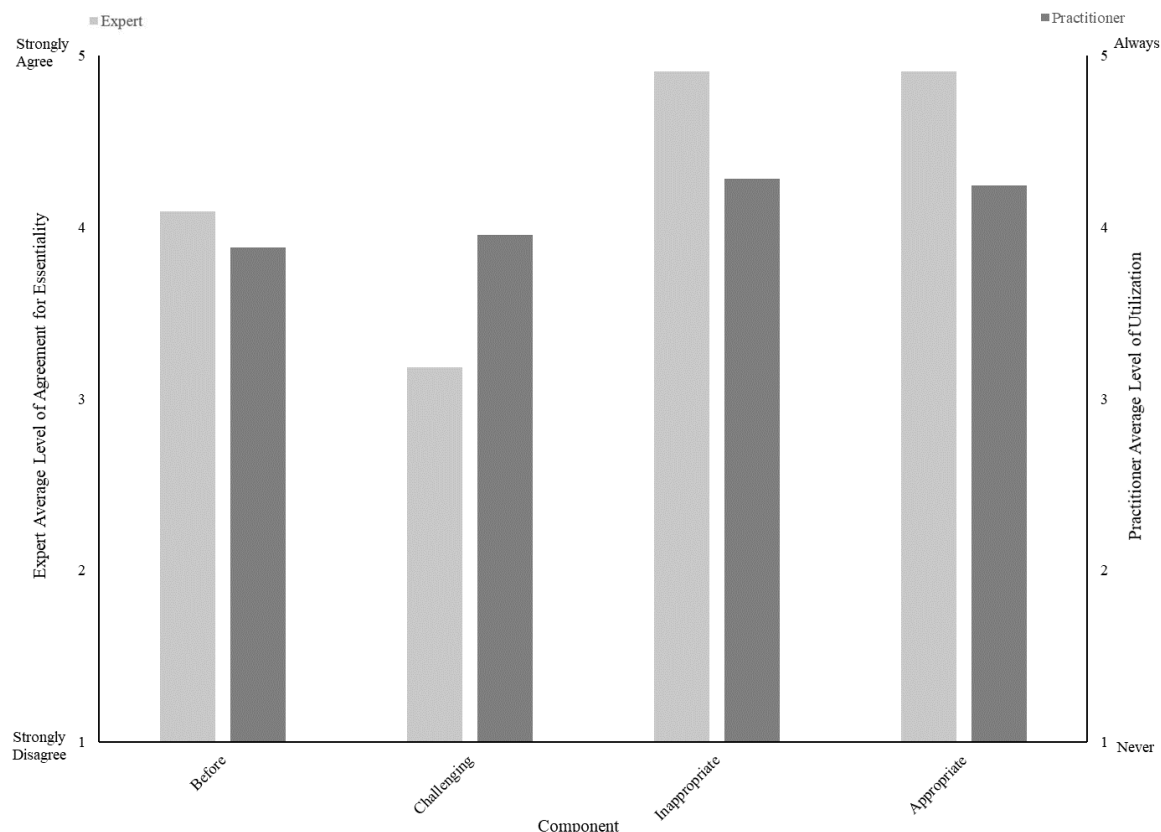**Figure 17.** Tangible Condition Comparison. Expert responses are on the primary vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). Practitioner Responses are on the secondary vertical axis with a scale of 1 (Never Utilize) to 5 (Always Utilize).

section. Practitioners are implementing each of the essential components often, and no significant differences were found between BCBAs and BCBA-Ds. As mentioned in Study 1, experts did not recommend running a tangible condition for each FA, and this will be addressed

in the discussion. However, when practitioners are running tangible conditions they are

including components rated as essential by experts.

Alone Condition

Questions discussed within this section of the results are questions labeled ALC 1-3 in

Table 1. Figure 18 displays the associated keywords for each question in the alone condition

section.

Figure 18. Alone Condition Comparison. Expert responses are on the primary vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). Practitioner Responses are on the secondary vertical axis with a scale of 1 (Never Utilize) to 5 (Always Utilize).

Practitioners are sometimes implementing the traditional alone condition (ALC-1) but aligned

with experts in their recommendations for variation. No significant differences were found

between BCBAs and BCBA-Ds. The third component in Figure 18 (no interaction) was reported

by practitioners to be utilized often. Practitioners also reported utilizing safety criteria (ALC-2) often. Alone condition components appear to be consistently used as recommended.

Control Condition

Questions discussed within this section of the results are questions labeled as CC 1-6 in Table 1. Figure 19 displays the associated keywords for each question in the control condition section.
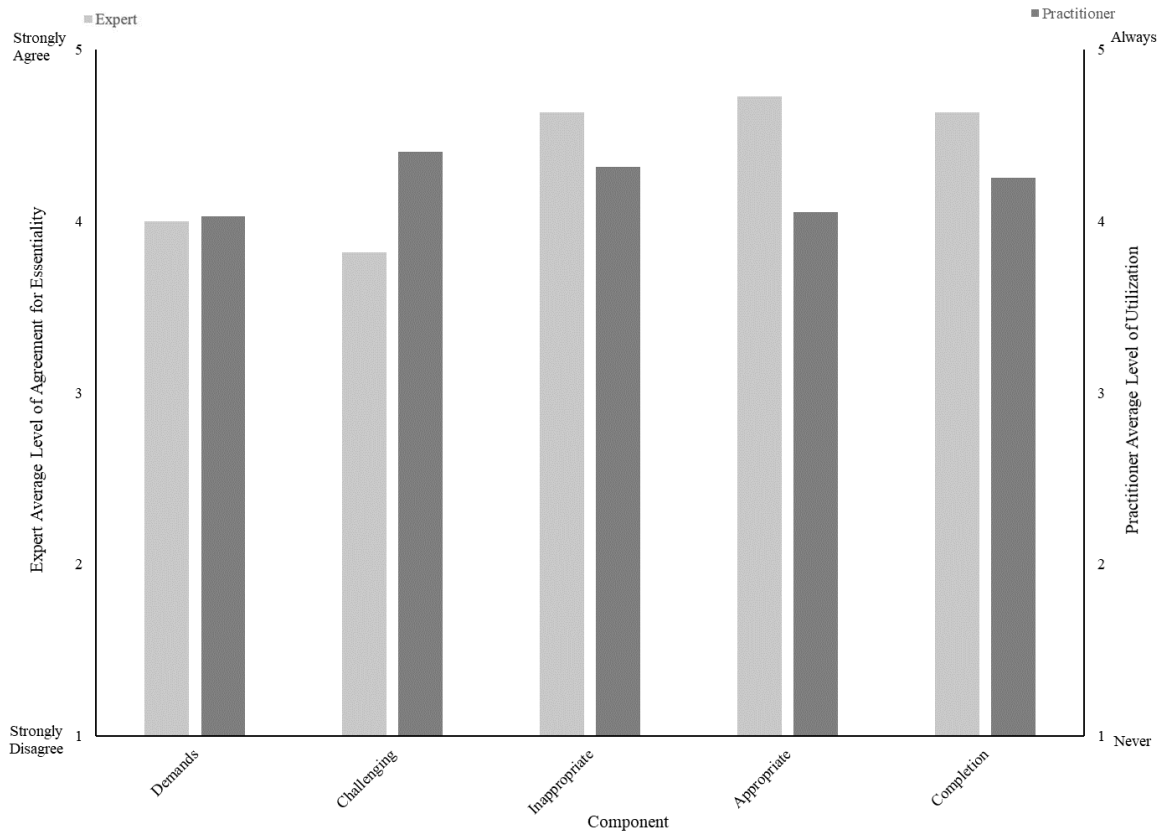

Figure 19. Control Condition Comparison. Expert responses are on the primary vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). Practitioner Responses are on the secondary vertical axis with a scale of 1 (Never Utilize) to 5 (Always Utilize).

Practitioners report implementing CC-1 and 2 often, with experts only agreeing CC-1 (fixed) is essential. As mentioned in Study 1, experts feel access (CC-2) should be to highly preferred items, not moderately preferred items. Practitioners also often implement component CC-3 in

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how to respond to challenging behaviors, while experts were neutral on the essentiality of this component. Component CC-4 was rated differently by BCBAs in relation to BCBA-Ds. The average rating ended up as falling under utilization of "sometimes," but BCBAs reported use as "often" and BCBA-Ds reported use as "sometimes." This may be a component that experts agree is essential, but practitioners are not often implementing for responding to inappropriate behavior not targeted by the FA. The last two components (CC-5 and 6) involved practitioners implementing recommended components often.

<center>Data Collection and Graphing</center>

Questions discussed within this section of the results are questions labeled as DC/G 1-4 in Table 1. Figure 20 displays the associated keywords for each question in the data collection and graphing section.

Figure 20. Data Collection and Graphing Comparison. Expert responses are on the primary vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). Practitioner Responses are on the secondary vertical axis with a scale of 1 (Never Utilize) to 5 (Always Utilize).
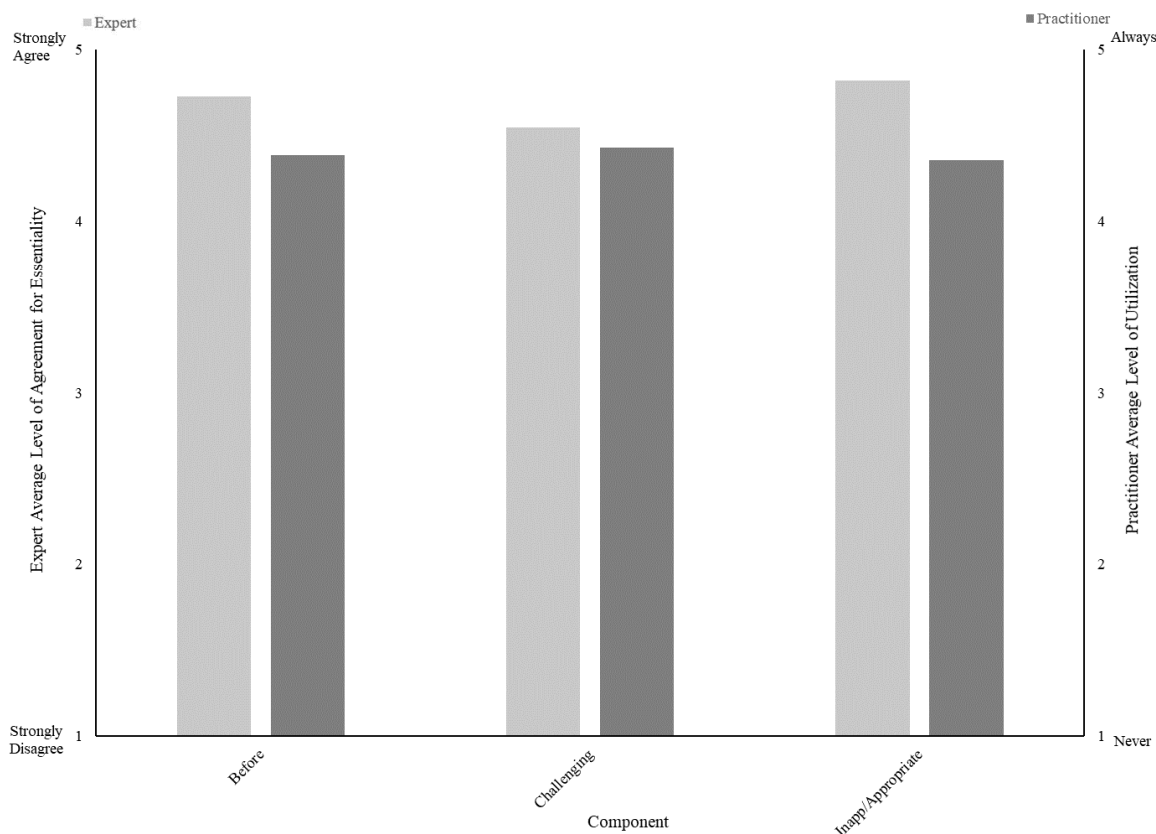
Despite all experts strongly agreeing on DC/G-1 (linked), some practitioners reported not always engaging in it. Even with the modification to DC/G-2 (IOA), there were still differences between BCBA and BCBA-D ratings. BCBA-Ds rated using the component often, whereas BCBAs reported using the component sometimes. It is often difficult for practitioners to find appropriate resources for conducting IOA, and this may influence the responses. Practitioners aligned with recommendations utilizing multi-element graphs (DC/G-3) often and bar graphs (DC/G-4) rarely.

Analysis and Treatment

Questions discussed within this section of the results are questions labeled A and T 1-9 in Table 1. Figure 21 displays the associated keywords for each question in the analysis and
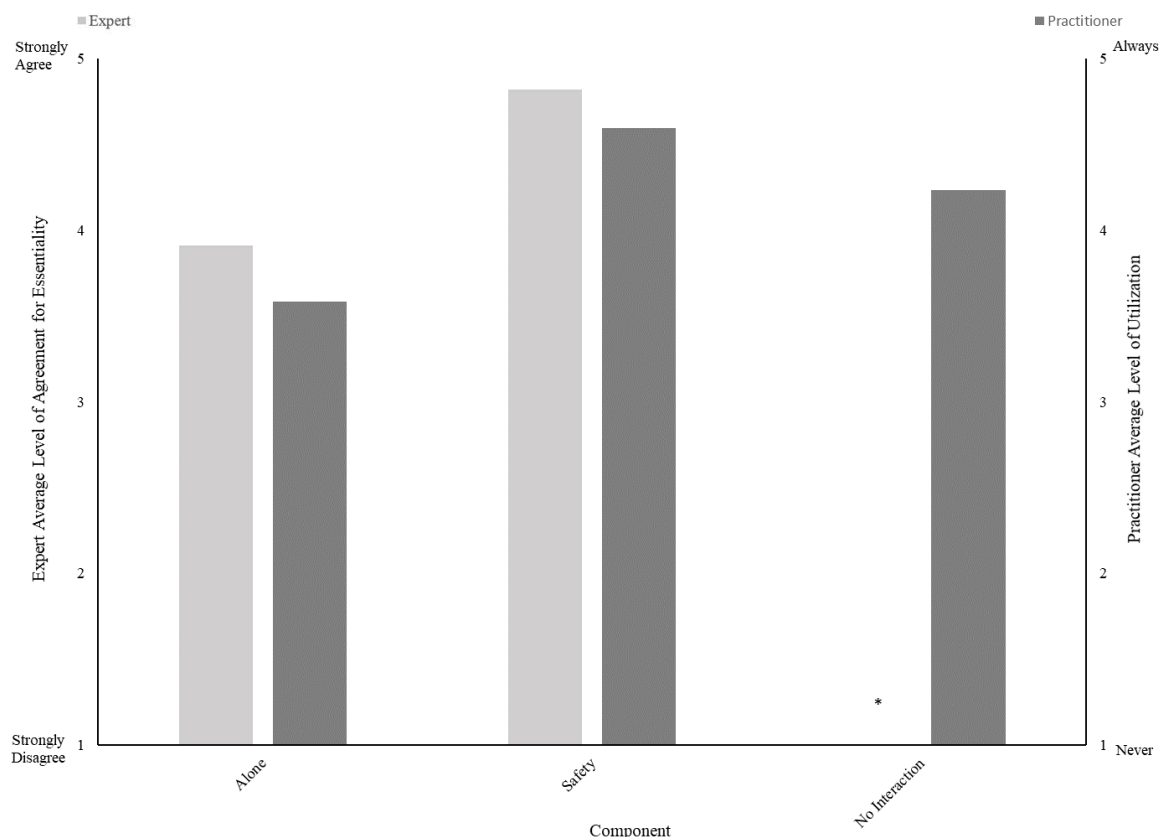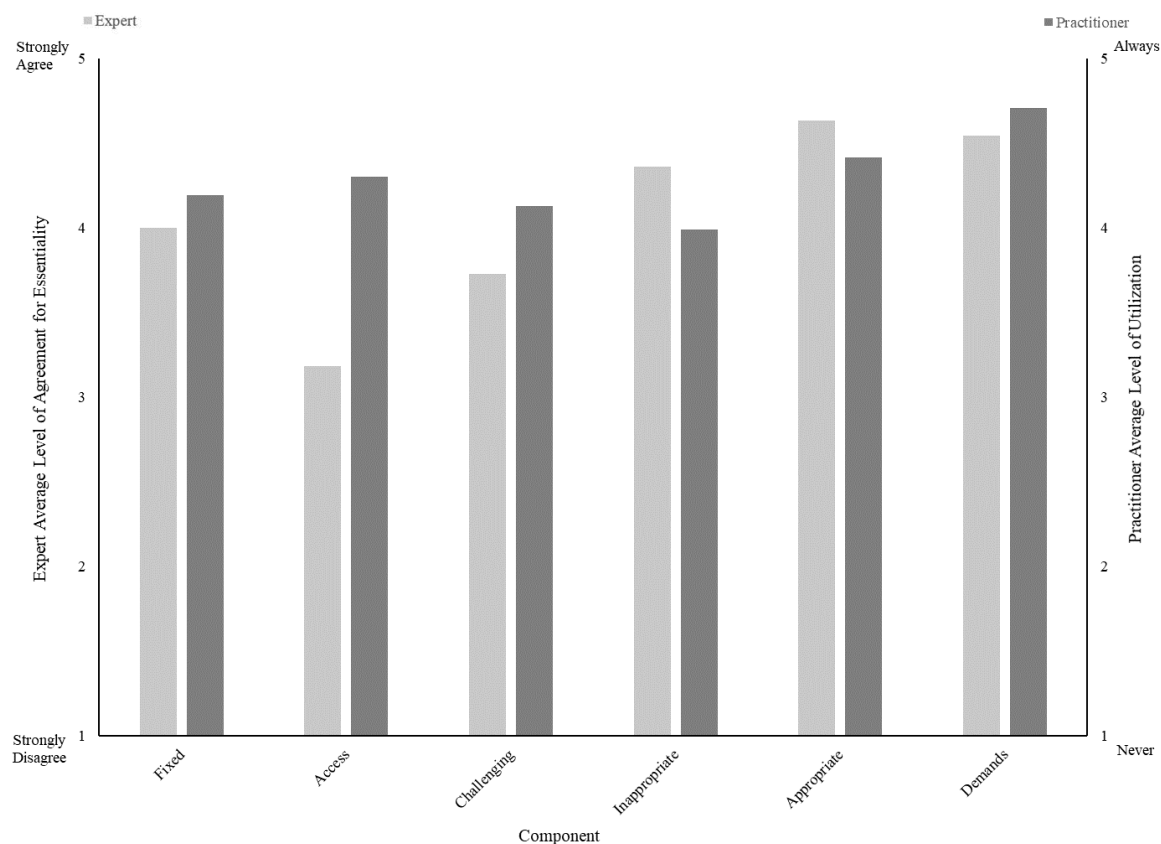
Figure 21. Analysis and Treatment Comparison. Expert responses are on the primary vertical axis with a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). Practitioner Responses are on the secondary vertical axis with a scale of 1 (Never Utilize) to 5 (Always Utilize).

treatment section. Components A and T- 2 and 6 were both additional expert recommendations.

For the practitioner survey, the component A and T-1 was clarified to explain that analysis would

occur to look at differences between test and control conditions, instead of simply between test

conditions. This led to practitioner ratings of engaging in this component often. Practitioners

rated that they were also doing component A and T-2 (within) quite often. Practitioners align

with experts, who were neutral, on A and T-3 (standardized), by rarely engaging in this

component. The component related to statistical analysis (A and T-4) showed differences

between average ratings for BCBAs and BCBA-Ds. BCBAs rated rarely engaging in these

analyses, while BCBA-Ds reported never engaging in these analyses. Practitioners sometimes

engage in A and T-5 but also only sometimes engaging in expert recommended pairwise

analyses (A and T-6) as an alternative. The final two components related to what to do when levels of challenging behaviors are low. Practitioners rated that they only engage in these components sometimes. However, BCBA-Ds did report engaging in component A and T-8 often. Therefore, these further analyses may be part of more advanced training.

Although the data reported herein document some differences in expert recommendation versus practitioner utilization of FA components, the practitioners are often engaging in recommended essential components. There may even be some components that practitioners engage in unnecessarily and others that practitioners may need more updated information and training on. The next section will include discussion of possible conclusions, limitations, and future research directions.

DISCUSSION

The results reported herein support the following tentative conclusions. First, experts generally agreed most components in the interview were necessary to complete an FA. Although a few components led to variability in responses, this was often due to the wording of the component or variations depending on each expert's research and clinical background (e.g., some experts researched and/or practiced primarily in hospital clinics, some in residential treatment centers, and others in school settings). Some components (i.e., statistical analyses and bar graphs) were also added by the author to ensure not all components were rated in the same manner. Additionally, some variation was expected based on the various populations, settings, and target behaviors the experts work with. Experts did address variations from traditional Iwata et al. (1982/1994) recommendations. Most notably, many experts had concerns about running a tangible condition. The experts provided the rationale that running a tangible condition may create a tangible function that did not exist before (Rooker et al., 2011). However, experts did agree overall that there are recommended variations in FA conditions from the traditional protocol, and some of these variations are appropriate and should be implemented.

Second, practitioners appear to be implementing most of the recommended components often. Again, there was certainly variability amongst practitioners, especially some specific differences between BCBAs and BCBA-Ds. However, the author was not expecting the practitioners to report implementing so many components, so often in practice. Practitioners in previous research noted that FAs were difficult to implement at all as part of the FBA process, due to lack of resources (i.e., time, materials, and training) (Roscoe et al., 2015). So, the author

was surprised to learn practitioners reported having access to the resources to implement so many of the components, so often. This point about resources is critical in that perhaps the survey participants have found ways to improve upon resources in their settings to better train, implement, and monitor FAs in practice. If we utilize the list of essential components to update and improve training, many more BCBAs and BCBA-Ds can be implementing such important analyses.

Training on the essential components is not only important for new BCBAs but also for those that may have been practicing in the field for several years. Those new to the field would benefit from more in depth and intensive training on FAs, while practicing BCBAs with FA experience may need training on updated research conclusions about more of the traditional FA components. Intensive trainings should involve updating task analyses to include the essential component recommendations and then utilizing a behavior skills training model. Then trainings for practicing BCBAs with FA experience could potentially occur through continuing education unit presentations and workshops during conferences. With updated and clarified task analyses and training methods, behavior analysts can then implement better quality functional behavior assessments, especially functional analyses.

Limitations

The author first notes that not all FA experts were included in the sample for Study 1. A few experts were unable to make an interview work into their schedules, and a few did not respond to the recruitment email. Other experts in FAs may have also been inadvertently overlooked due to their involvement with more clinical-based practice and less published research. However, this selection of experts was designed to provide a representative sample of experts, not an exhaustive sampling of every FA expert in the entire discipline. Second,

practitioners in Study 2 are also part of a specific sample of individuals. Although a large number (198) of BCBAs and BCBA-Ds completed the survey, there are thousands of BCBAs and BCBA-Ds in the world. All individuals who participated in the survey were also willing to spend a portion of their time completing the survey and were at least somewhat confident in conducting FAs. Many other practitioners were not included in the research who may also not be implementing FAs regularly, or at all, due to lack of resources and training (Roscoe et al., 2015).

Third, it must be noted that practitioners completed the survey online through self-report measures. And so, these responses must be taken as reported in the data, despite potential over/under reporting. Therefore, some responses may not align with what practitioners actually implement in clinical practice. To keep the data anonymous, specific data were not collected on practitioner academic background, training, or clinical practice settings. These components could all also contribute to individual responding. Practitioners who have completed very few FAs and have minimal training on FAs would also not have participated in the study. These untrained practitioners may provide more insight to current FA implementation for newly certified BCBAs. With an increasing growth in the number of BCBAs and BCBA-Ds across the world, this type of data on training and assessment knowledge is extremely important.

<center>Future Directions</center>

Functional analysis as a crucial component of clinical practice is widely acknowledged (e.g., see BACB PECC, 2014), and the practice continues to develop and grow in applicability, just as the field of behavior analysis does the same. The author recommends the essential FA component findings be developed into a formalized list that can further be validated through direct observation of practitioner implementation. The list can then be used for task clarification

and feedback within clinical settings. Further research can then analyze whether clinicians are not only implementing the components but implementing them correctly. The more research on procedural integrity for FAs and other assessments, the more behavior analysts can improve quality of services across clients.

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APPENDIX A

Expert Recruitment Email

Hello (<u>fill-in expert</u>),

      I am contacting you as someone who was identified as an expert in the topic of functional analysis within the field of applied behavior analysis. As part of my dissertation, I am collecting information related to the essential or necessary components of a functional analysis procedure. I will then utilize these components to formulate a survey to better understand which of these components are utilized consistently by Board Certified Behavior Analyst practitioners in the field when they are conducting functional analyses. If you choose to participate in this research, we would schedule an interview via Zoom that would take approximately 30 minutes to 1 hour to complete. Your participation would involve providing responses on a Likert Scale as well as an open-ended fashion, and the interview will be recorded for further data analysis.

Please let me know whether you are interested in participating in the current study.

Thank you in advance for your time and input for this study.

Sincerely,
Alissa Conway
Doctoral Student
Behavior Analysis
Western Michigan University

APPENDIX B

Expert Consent

Please read this consent information before you begin the interview.

You are invited to participate in a research project entitled "*Evaluating Recommendations versus Utilization of Essential Components of a Functional Analysis Procedure*" designed to better understand the essential components of a functional analysis. The study is being conducted by Dr. Richard Wayne Fuqua and Alissa Conway from Western Michigan University, Department of Psychology. This research is being conducted as part of the dissertation requirements for Alissa Conway.

This interview is comprised of several components that will be rated on a Likert scale, as well as opportunities for open-ended responding. The interview will take approximately 30 minutes to 1 hour to complete.

Your responses will be video recorded and stored on a password protected flashdrive for three years. When you begin the survey, you are consenting to participate in the study and agree to have the interview video recorded.

If you do not agree to participate in this research project, simply state so now. If, after beginning the interview, you decide that you do not wish to continue, you may stop at any time. You may choose to not answer any question for any reason. If you have any questions prior to or during the study, you may contact Richard Wayne Fuqua at (269-387-4474), Alissa Conway at (570-504-6570), Western Michigan University Department of Psychology, the Human Subjects Institutional Review Board (269-387-8293) or the vice president for research (269-387-8298).

Participating in this interview indicates your consent for video recording and the use of the answers you supply.

APPENDIX C

Practitioner Recruitment Email

Hello BACB Certificant,

Behavior analysts frequently conduct functional behavior assessments, and part of this process often involves a functional analysis. The functional analysis is a well-known procedure, but currently there is not a validated task analysis detailing the essential components conduct the assessment. For my dissertation, I am investigating which components of a functional analysis are consistently utilized by BCBAs in the field. If you are currently certified as a BCBA or BCBA-D, have participated in 5 functional analyses in the past three years, and are interested in participating, please click the link below. The study will take approximately 30 minutes –1 hour to complete over one session and your responses will remain anonymous. Following your participation, you will be given the chance to be entered into a lottery to receive 1 of 4 $25 Amazon gift cards. Questions concerning this research may be directed to Alissa Conway at Alissa.a.conway@wmich.edu.

LINK *(to be determined with BACB confirmation)*

Thank you in advance for your time and input for this study.

APPENDIX D

Practitioner Consent Document

Please read this consent information before you begin the survey.

You are invited to participate in a research project entitled "*Evaluating Recommendations versus Utilization of Essential Components of a Functional Analysis Procedure*" designed to better understand the essential components of a functional analysis. The study is being conducted by Dr. Richard Wayne Fuqua and Alissa Conway from Western Michigan University, Department of Psychology. This research is being conducted as part of the dissertation requirements for Alissa Conway.

This survey is comprised of several components that will be rated on a Likert scale, as well as opportunities for open-ended responding. The survey will take approximately 30 minutes to 1 hour to complete. At the end, you will have an opportunity to enter in a lottery to win a $25 Amazon gift card.

Your replies will be completely anonymous. When you begin the survey, you are consenting to participate in the study. If you do not agree to participate in this research project, simply exit now. If, after beginning the survey, you decide that you do not wish to continue, you may stop at any time. You may choose to not answer any question for any reason. If you have any questions prior to or during the study, you may contact Richard Wayne Fuqua at 269-387-4474, Alissa Conway at 570-504-6570, Western Michigan University Department of Psychology, the Human Subjects Institutional Review Board (269-387-8293) or the vice president for research (269-387-8298).

Participating in this survey online indicates your consent for use of the answers you supply.

APPENDIX E

Open-ended Question Responses

Open-Ended Question Responses

Question/Section	Comments
	Preference assessments conducted more than demand assessments.
	For some intense and dangerous behaviors, we may measure latency and cut sessions short. In addition, sometimes we may be measuring a precursor behavior and may not ever see the actual procedure.
	You're asking about functional assessments, not a functional analysis, where all conditions are presented(?) this is my understanding of your questions, although there was a concern in the wording of some questions. I have conducted both. I also work for the State of Texas which has standards of procedure which are determined by a settlement agreement with the Department of Justice.
	I always include at least one behavior to track but allow data collectors a free area on data sheets to collect data on antecedent behaviors in a descriptive format. Even though it may not necessarily be included in standard data analysis, it can be helpful if a second iteration of the assessment is necessary.
	If there is a single challenging behavior, the focus would be placed on that specific target but if there are multiple behaviors that are anticipated to serve the same function, assessment is completed on the class.
	Topography vs function. I would measure all behaviors observed to serve the same hypothesized function. Unless there is simply one behavior in question. Ex: biting, hitting, hair pulling could serve the same attention function.
	I typically use systematic manipulations that do not always require that you evoke agression or SIB to evaluate the reinforcing effects of the consequences maintaining problem behavior. Thus limiting the need for protective equipment and reducing the risk to client and staff
	Indirect and descriptive FA lack reliability, are prone to false positives, and are insufficient for establishing a functional relationship. While I will conduct interviews to develop working ideas for antecedents, behaviors, and consequences, these data are in no way able to establish a functional relation.
	While I always conduct a functional assessment interview I do not use a structured or semi-structured interview, but conduct an unstructured interview.
	I often am requested to assess more than one behavior for given client. In these cases, I will conduct the FA for each of the behaviors on different days in order to assess them individually. I may also better identify precursor behaviors for these which may allow me to shape up lower intense behaviors within the behavioral chain...this helps when designing interventions following the FA.
	frequently track more than 1 targeted behavior
	I most often use brief FA with contingency reversal

I would say that I never do an FA on only 1 behavior. We are always collecting data on all behaviors that occur during an FA as part of the response class.
I measure multiple responses; however, the contingency is only applied to one target.
Whether it is response class or specific behavior depends on behavior of concern as well as if there are precursor behaviors. For example if a severe aggression never occurs without a milder challenging behavior occurring first I would do the fa on the milder challenging behavior and interrupt before severe behavior occurred.
If I am taking data myself, I may not have a specific data sheet that I make up myself, but use a general one and fit it to my needs.
I use Interview Informed Synthesized Contingency (IISCA) protocol.
- having the question including preference assessments and demand assessments may skew your results. I answered always because I always do preference assessments, however, I sometimes conduct a demand assessment. It was a little tricky as to how to answer those questions because they are so different and are conducted for different reasons.
I rarely measure just one challenging behavior but will also measure & operationally define several challenging behaviors & adaptive behaviors as well
Whether I am measuring one behavior or additional behavior in a response class or precursor behavior depends on the child. and on what the environment will support. We don't always need protective clothing but you do need to have termination criteria.
re: safety precautions, some limitations exist in attempting to do an FA in a public school setting, which is where I have worked for 15+ years as a BCBA
I collect data using B-DataPro and previously used a older version called DataPal. So I don't exactly create a "data sheet" because I use the data collection program where I create the KSF.
The specifics of the client's behavioral issues and information that come up in interviews and direct assessment will strongly affect how the functional analysis is conducted. Also, in answer to a previous question, I was first trained in functional analysis during an internship.
All FAs are planned using a checklist and implemented by a team of members.
All of the above are set up prior to conducting FA's including any potential modifications that might be made to the procedures.
All decisions about planning and setting up for the FA are situational and dependent on a lot of individual factors.
Depending on the type of FA, and the target behaviors, we may need to do more or less of any particular prep. I find that teaching staff how to do the FA and to adapt to changes during the procedure is a bit of a challenge as

	masters programs now rely too much on route learning and not enough on conceptual learning. I pick up that part when I supervise them as professionals
	It is important to change and create conditions as needed to adequately determine function
	Seems like any answer to these questions other than "always" would signal and ethical problem!
	If there is a reliable precursor to the target behavior, I will conduct a functional analysis on the precursor as opposed to the target behavior. In most cases, only if it a target behavior that can cause harm to the individual or others.
	Deciding which FA to use based on information you gather.
	I use a variety of data sheets, but typically use electronic means to collect data.
	If there are jmuktiple bxs I hypothesize as part of a response class I will measure them as part of the fa
	I typically only assess one behavior at a time, but also take note of other behaviors that might be observed during the condition. The only exception has included when additional data has indicated hierarchy of behaviors and/or response class).
	I said sometimes for measuring additional behaviors because, when sessions are video taped, it is easy to go back and take additional data; however, if they are not taped, it is not usually possible to accurately complete data collection on multiple behaviors.
	My organization has created an FA proposal form that is reviewed by clinical leadership for approval. In addition we have an FA Clinical competency Checklist. The only BCBA's in the organization who can conduct FA's independently are this with this checklist on file
	Severe behaviors don't always apply
	Do not always move to analysis. Often end with descriptive assessment. If treatment based on descriptive not effective, analysis is considered. Prior experience before current practice, analysis was always conducted.
	Regarding the following item: Determine whether an FA would be appropriate to conduct by considering the following: 1. Severity of challenging behavior 2. Social significance of challenging behavior Answered "Never" because an FA is always conducted (FA meaning a systematic manipulation of variables to uncover possible functional relations for a relevant target behavior). Some form of these analytic procedures can always be conducted under the appropriate supervision.
Condition Information	I rarely include alone in multielement designs and only tangible if I have reason to believe the behavior is maintained by access or if gaining that information would change the course of treatment in any way. I am most likely to use extended no-interaction or alone series to test for automatically maintained behavior. Additionally, sometimes I use FA design modifications such as pairwise, latency, reversal designs, and sometimes a combination of these modifications depending on behavior, severity, and number of test conditons. For the

	number of repetitions of each condition, sometimes I will do 3 sessions (minimum) if the data in the test conditions are clearly differentiated from control.
	I only run a tangible condition if descriptive data suggest that challenging behavior might occur to gain access to tangible items. Otherwise I don't include this condition in order to avoid creating contingencies that are not in place. Typically FA sessions that I run are 5-10 minutes.
	Not all "standard FA conditions" are relevant for every learner. I select the conditions that are most appropriate for the learner. Sometimes I run a Brief FA with 5 minute conditions. Sometimes I do trial-based or precursor behavior with latency to first behavior. The "standard" FA is much to restrictive and clinical for what I am doing most times.
	Alone, attention, play, demand, tangible (if needed)
	Like stated above, sessions do not last the full 10-15 minutes if it is a dangerous behavior and we are measuring latency. In addition, we do not wear different shirt colors because we use a different BCBA for each condition. We do not always run a tangible condition...in My experience, this condition can be a false positive. But if we are fairly sure it is tangible, we will run it.
	direct observation provides opportunities to observe the behavior in the natural environment with antecedents observed as well as consequences. An analogue analysis is rarely needed.
	It would be better to refer to stimuli as either condition-correlated stimuli or schedule-correlated stimuli. If they have no effect on behavior, they are not discriminative stimuli.
	The number of times conditions are repeated is based on obtained data
	I typically avoid traditional analog assessments as I work with high severity problem behavior. I implement Trial Based or Latency analyses most often. I also, rarely, include access to tangible conditions due to ethical concerns of providing direct edible/tangible reinforcement for engaging in dangerous behavior.
	Depends on type of FA. Multi element vs trial based for example.
	Becasue of how I collect consequence data on the target behvior- I rarely test conditons that do not actually occur - thus cannot be maintainng the problem behavior - I find that highly inefficient
	If responding occuring at high rates with little latency to response will run 5 minute sessions
	We are typically using Brief FA's
	I frequently use pairwise design - alternating between one test and a matched control condition, and testing one function at a time. I got into the habit of doing so when I was working in a program in which assessment time was extremely limited. The rationale was that if I could thoroughly rule in or out one of the functions in the limited time I had, then we were farther ahead than if we had insufficient data to draw conclusions from for all the functions.
	usually I fix the sequence to control for MO and carryover but I have done it randomly

I typically run a complete set of conditions at least 3 times before eliminating or modifying test conditions. I will sometimes run brief 5 minute sessions.
I frequently use latency analysis; consequently sessions may be very short. otherwise, the session may be 5-10 minutes. If I am doing SIB FA, then I used foxed sequence utilizing MO's. If not, then I use a random sequence.
Usually brief FA with contingency reversal or hypothesis testing
I rarely repeat each condition 4-5 times. 2 is the typical amount, unless the data is not clear.
I don't always use the standard multi-element design format, or reflect measurements as rate. The design depends on many contextual factors as well as the topography, onset, and latency to offset of the target behavior.
Whether an ATD is used as the design depends on different factors but when we do use those and we have more than 2 conditions, we rapidly alternate.
I work mostly with adults with high impact behaviors. Repeating conditions for 4-5 trials in my setting would not be practical for many of the behaviors I am asked to help with.
IISCA focuses on control of the behavior not on isolated function, so the idea of carryover effects does not apply.
-We almost always conduct an control/free play, attention, escape and tangible condition, however, we only include an alone/ignore condition is we suspect that one or more of the behaviors are maintained by automatic reinforcement - we generally run our conditions for 5 minutes unless our interview/descriptive data suggest that we need to conduct sessions for a longer time period or unless we are not observing any problem behavior when sessions are 5 minutes in length - we don't have a set number of times we repeat conditions, we conduct sessions until we see a trend in problem behavior. generally we like to see at least 3 data points, but may do more if the trend isn't clear OR we may stop after 2 sessions of one condition if the behavior is lawful and it is very clear that this is the function (and that we may lose control of the session if we were to continue) - overall, all FAs are individualized for each student, therefore, which conditions we test, how long each session is, how many times we repeat a condition, which design we use, etc.
I always run an FA until differentiated, but sometimes that is often in fewer than 4-5 repetitions.
Due to clinical limitations, sessions are 5 minutes long and the goal is to run each session three times. The treatment clinic I am in is brief & only allows 14 sessions.
Sequence of conditions depends on the situation and the type of FA. In a trial-based FA the condition times are shorter. My decisions may also be influenced by teacher confidence and competence if I'm supporting classroom staff in running a trial-based FA. If I'm using an IISCA format I may not run all possible conditions.
I was trained by Henry Roane to run 5 minute sessions. I will run 10 minute sessions if the EO is not strong or 5 minutes is not enough time for the effects of the EO to take place.

The duration of sessions and number of times sessions are run for each condition will vary with the specifics of the procedures. For example, if the problem behavior of interest is self-injurious behavior, the dependent measure may be latency instead of frequency to limit the number of times self-injury occurs; this necessarily means that the sessions will sometimes be shorter than the scheduled duration. Also the number of sessions may be affected by issues that have nothing to do with the actual procedure (e.g., administrators who don't know anything about functional analysis getting in the way of actually running the procedure properly).
I did not answer the first question bc I have never been able to test the alone condition legally.
I usually don't do long condition times (10-15 min) - prefer Iwata's latency based (up to 5 minutes per condition)
I have frequently run FAs where we measure latency to the target behaviour so conditions do not run for 10-15 mins.
Sometimes we run trial based FAs for a variety of reasons. These segments are shorter than the standard 10 minutes.
If conducting a standard FA, I will do 10 minutes sessions - modifications may include increases in time of sessions; however have run brief FA for 5 minutes, 3 minute Trial based sessions with control, test and 2nd control sessions and other modifications as needed
I do random all the time, so that is why I do not do fixed sequence
Every case is different, so each FA must be consistent with what we know about the client, the environments the client is exposed to, and the experience of the client in more than one setting. Otherwise we can do more than one FA, taking environment into account to help see what we can do. We must be flexible to allow for varied conditions (e.g., baited environment of testing for pica), we must continue to encourage practitioners to stick with the original FA plan, with clinical room to alter the conditions as behavior suggests we should. We need competent flexibility.
I only conduct the tangible condition when access to tangibles is suspected as a function and I only conduct the alone (or ignore) condition if the suspected function is automatic. Additionally, I occasionally only test for suspected functions and conduct a control condition when operating under certain constraints, such as time.
Currently using abbreviated FA procedures as described by Gregory Hanley with similar success to traditional FA procedures.
I base the condition order on research by Hammond, Iwata, Rooker, Fritz, & Bloom, 2013.
I do not always include an alone condition unless an automatic function appears possible during any initial DNA steps

		Almost always do an FA, but determine what FA (e.g., standard, trial-based, single test/control, IISCA) to run based on client/hypothesis and most efficient way to get data. Often analyse within-session data and reduce # of sessions.
		I don't always run a tangible condition
		I utilize the IISCA model more often than the isolated conditions described by Iwata, so many of these sections are not applicable to my method.
		My FAs in the school setting have mostly included brief A-B-A reversal designs. A true FA could take on any experimental design as long as there is a comparison of performance between test and control conditions.
		Always have a control/play condition between conditions. Random conditions.
Attention Condition		For the pre-session attention, I usually provide up to 2 min. For the type of attention following target behavior, I usually provide the reprimand and physical attention, but I had one client that we conducted an attention assessment to evaluation what types of attention were associated with the highest levels of target behavior and then used that type of attention in the FA (similar to demand assessment).
		We never use physical attention for these conditions, and we match attention responses to whatever the parent provides, which is not always a reprimand.
		The type of attention a learner receives in an FA is going to match what occurs in the natural environment. In a trial-based FA, there may be attention given for other behaviors.
		I've only done latency based functional analysis. The conditions ends when the student engages in the target behavior.
		We have found that the function is attention and have then completed different session of attention. We will have one session with a reprimand, one for physical attention such as tickles, and possible one where the child can sit on my lap.
		The last two questions were difficult to understand exactly what you are asking. Any challenging behavior has to be addressed due to ethical considerations and requirements by the state. With respect to replacement behavior, I am also conducting probes for baseline to assess how to efficiently develop the teaching and preventing strategies. Given time constraints this is the most efficient method for me. A functional assessment is to develop a hypothesis, then work off the hypothesis.
		You might consider broadening you definition of attention. The attention should mirror what occurs in the individual's everyday environment.
		I also control for positive verbal/physical attention.
		Attention is delivered in whatever form is derived from the descriptive assessment (reprimand perhaps or comforting statement/hug
		All of this would depend on the target behavior and the hypothesized functions we are testing.

| If during the initial assessment - I have identified that a specific form of attention may be reinforcing teh problem behavior - I may confirm/disconfirm the reinfocing effects of that form of attention emprically - by providing it contingent upon a specific- adaptive response- under controlled conditions |
| May give a "not right now response" to appropriate mands if a mand repertoire is being targeted in skill acquisition |
| I would provide attention (and terminate the test condition) for appropriate behaviors in the event that a client requested to go to the bathroom, or another request that did not feel ethical to ignore. |
| Unsure what responding w/o attention would look like. |
| I will often provide attention in the form of a reprimand or physical attention contingent on target behavior occurrences, unless direct observations in the natural environment indicate that another form of attention is more likely to occur. |
| If inappropriate behavior that is not targeted by FA meets termination criteria we may deliver attention. Also, attention to challenging behavior that is targeted by FA may not be reprimand (Depends on individual's preferences) |
| would not recommend providing attention for any behavior unless it is specifically targeted in the FA protocol. Responding to Challenging Behavior: the attention provided is not always reprimand paired with physical. The form of attention that I typically provide is found in other assessments prior to the FA. |
| responding to inappropriate behavior can be complicated and attention may be required if its a concerning behavior. |
| For a student with little to no functional mands and very severe problem behavior, I may respond to appropriate behavior, such as mands for example, so as not to extinguish that behavior outside of sessions. |
| For responding to inappropriate behavior not target by FA, this question was tricky to answer. We respond to all inappropriate behavior during the FA as part of the response class. |
| I do not only provide attention in the form of pats on the back and verbal reprimand. A descriptive assessment may reveal that a parent, for example, picks up a child and plays with him following problem behavior. If this is the case, then reprimand would be unusual and wouldn't tap into the relationship. |
| We never provide ANY attention for anything other than the target behavior |
| We provide at least 15-30 seconds of attention prior to removing attention and starting the session. We provide a reprimand almost always (if that is what is happening in the actual environment) and only physical attention if that is how adults respond when problem behavior occurs. |
| If you've been running for a while and haven't observed target R but do see other inappropriate beh, I may decide to switched targeted topographies and reinforce other Rs |

	For the type of attention provide - I do not always provide physical or reprimands, I try to provide the attention that is provided as a consequence in the natural environment (as described in the indirect assessment). For example, if mom says she hugs and provides comfort following SIB, that is what we will do.
	I typically am involved in FAs that does not provide consequences for inappropriate behavior (client is not given attention for inappropriate or appropriate behavior).
	Time for attention or breaks may be longer than 15-30 seconds.
	the duration of attention provided and "type" depends on what was learned in the interview.
	Question 1, we provide attention for 2 minutes then take attention away.
	We try our best not to reinforce appropriate behavior. However, sometimes we may bring in parents to help run segments in the home. We cannot always control for parent behavior.
	Attention in response to challenging behavior always provided but not necessarily in the form of a reprimand and physical attention.
	Control condition will typically occur for max of 2 min.
	I do not "reprimand" -- I say "stop that" in a soft voice. I will conduct a set of conditions in which a possible alternative replacement behavior receives the attention and the challenging behavior is ignored.
	The last one doesnt make sense to me
	Questions are strangely worded. Nonattention for any behavior that is not specifically targeted.
	Sometimes the form of attention delivered is modified due to idiosyncratic variables or needed individualization on a case-by-base basis.
	The last two questions we're unclear.
	Sometimes the form of attention being delivered in the FA cannot be a reprimand, based on the preference assessment/interviews, so we might have conducted an attention FA (Gardner, et al) prior, OR teased out that only certain types of attention will reinforce problem behaviors prior to the FA. Additionally, we will typically provide brief praise statement for appropriate behavior, but only if a demand has been accidentally given. Typically, this would not be the case, and need for any other attention would not be necessary.
Escape Condition	Demands may not be known to client if client has little/no mastered targets.
	Contingent upon the challenging behavior, escape is always provided. The verbal attention ("You don't have to") may or may not be added.
	The type of escape a learner receives in an FA is going to match what occurs in the natural environment. In a trial-based FA, there may be escape given for other behaviors.
	I don't understand why the need to use a 3 step prompting hierarchy. It implies that all 3 are required to get a response from the student.

Nothing is said following targeted behavior, just the removal of demand to control for attention. No praise is provided to increase value of escape and to evoke targeted behavior sooner.
For comple Ion Of task demands, we do not provide praise....we just continue to deliver demands.
How I respond depends on the severity of the behavior, whether it is ethical to place it on escape extinction, or whether the risk/benefit of serious injury is too great. If a probe indicates that escape extinction is viable, this is what is used. I base my decision on what I learn from the assessment process, realize that I am required to use three different FA methodologies (I prefer and use a standardized FAI, the QABF and direct observation in natural environment as well as staff/individual interviews for all functional assessment reports.)
If the student is never physically prompted, we will not use that prompt rather, we will persist with the verbal/gestural prompt.
If I am assessing the potential reinforcing effects of praise- I may provide it after an adaptive response or task completion to detrmine its effects on rates of that response
My FAs are individualized based on the contingencies in their natural environment. I often utilize Greg's synthesized FA methods
Responding to inappropriate behavior: I will ignore and continue to present the demands, but will not always follow the 3-step prompting hierarchy and may use a different prompting sequence depending on the child.
Again for the responding questions: I do not always use a 3- step prompting method. The prompting procedures are typically individualized to the client.
In this condition I do not provide praise, only demands both familiar and unfamiliar.
Some children engage in problem behavior when asked to complete Verbal behavior tasks
We don't often say anything when we deliver the break because that could function as attention
I answered often to most because there could always be an individual circumstance that may require us to do something a little different, however almost always is basically how I want to answer. For how we respond to challenging behavior, we usually say "ok, we can take a break" or "we don't have to do this" however, on occasion, we may not remove the task because for some kids it becomes more of a tangible situation where the child is trying to get the work back. So, we may say, "we don't have to work" but leave the work items on the table. Also, if we provide praise for compliance, it is very neutral and brief because for some kids providing praise for work completion is an intervention, as it is enough to keep the kid working.
Accepting an appropriate request for escape varies by student but is usually the goal and would be reinforced unless the behavior is excessive requesting (even if appropriately done) and then it would be ignored
I clicked "often" because there have been a few instances where circumstances unique to the individual may have caused me to set criterion somewhat differently than stated in this set of questions. Additionally, I have

	been, at times, over-ruled by nonbehaivoral team members -IEP team despite my suggestions/recommendations.
	I don't always provide praise following task completion, and sometimes only use gestural and physical prompts.
	depends on interview. this survey seems to assume the analog FA is what we should be using. Not sure why.
	"Brief praise" is usually in a neutral tone.
	Don't always use 3 step prompting sequence, might use hierarchy specific to client
	Depending on what stimuli attempting to escape from, not always possible to follow prompting hierarchy culminating in physical prompts.
	Control condition will typically occur for max of 2 min.
	We don't generally provide any praise after completion of task demands. We just move on to the next demand.
	I will conduct a set of conditions in which a possible alternative replacement behavior receives the escape from task (task termination) and the challenging behavior is ignored.
	These answers explicitly reflect my behavior in a traditional iwata style FA. The Hanley version requires different responses but I haven't done as many of those. But my "often" answers reflect that.
	I usually do not pair the break with any comment, only removing the stimuli and turning slightly away from the patient.
	If attention is provided for an appropriate request condition terminates...
	"that may be physically prompted." is confusing I would only choose demands that have a history of noncompliance
	I select demands have have occasioned problem behavior in the past - these may not be able to be physically prompted. In those cases, I keep the demand in place and repeat it verbally.
	I would not typically respond verbally, but it would need to be tailored for the specific client.
	Prompting hierarchies are individualized, as are responses in some cases.
	If client is high functioning and asks for a break, we might attend to the first request with a "maybe later" type statement, then ignore subsequent requests.
	Praise may be given for completing demands ONLY if it has been observed and reported as a naturally occurring event following demands outside of the FA setting. This is consistent with trying to replicate naturally occurring circumstances in my FAs
	Appropriate request to stop qpuld be acknowledge with request to complete one more known easy demamd.
Tangible Condition	Pre-session access may be up to 2 min.
	Contingent upon the challenging behavior, tangible item is always provided. The verbal attention ("Here you go") may or may not be added.

The type of tangible a learner receives in an FA is going to match what occurs in the natural environment. In a trial-based FA, there may be tangible given for other behaviors.
Item is taken away without vocal comment after 15-30 seconds and given back contingent on targeted behavior
Again, your questions relate to a functional analysis, where conditions are presented not a functional assessment.
Pre-session access is usually closer to 1-2 mins
I do not typically use this condition on ethical grounds.
I may not use a verbal statement in this condition ("my turn") as to account for attention effects.
Again, we practice by responding to the entire response class. Therefore, I would respond to all inappropriate behaviors.
The therapist is silent in this condition
For adults with severe challenging behavior in residential placement, I give more time than 15-30 seconds in the tangible activity. It is also very tricky to remove items from adults, and difficult to train staff when this is appropriate after the session is over without infringing on adults rights, so not used very often.
We may say "my turn" and take a turn with the item or we may say "we are all done with this" and put it "up" but in sight of the student, as those are 2 tangible situations that may occur in the classroom (sharing and having an item removed because the teacher says you are done). How we conduct this is decided based on our interview and observations in the natural environment
The reinforcement interval following the target behavior may vary depending on what occurs in the natural environment and the tangible. If the item is a video game, for example, I may provide the client with more than 30 seconds as the duration of interaction has shown to influence preference and motivation.
Depending on item the timing could be slightly more than 30 seconds.
Question 1, we provide 2 minutes with item then take away.
I will conduct a set of conditions in which a possible alternative replacement behavior receives the tangible and the challenging behavior is ignored.
Again, depending on traditional iwata or Hanley versions
I often allow the patient 30 seconds-1 minute of access to the item before beginning the session.
In my company's standard procedure, we allow 2 minute access to highly preferred items prior to removal.
I suppose this is the only condition where I would break my policy of trying to replicate naturally occurring circumstances. This specifically pertains to not providing access to tangibles for non-targeted behaviors. The risk of reinforcing non-targeted behaviors and creating new functions are far too high with this condition.
Often find we only require the one trial in extream behaviours. Will end session and repeat later session

Alone Condition	Our learners are never alone and therefore we would never run the alone condition. We would only run the no-interaction condition if there was reason to believe there was an automatic function.
	I've had a lot of students that have aggression as the target behavior and I will skip this condition because there is no one there for the student to be aggressive with.
	Conduct an FA on precursor behaviors when severe behaviors are a possibility to minimize risk.
	I wait 30 seconds before ending condition if targeted behavior occurs to avoid artifact of attention by entering room and interacting unless dangerous. I may not include alone condition if behavior requires another person assuming social mediation. Exception could be using an ignore condition if suspect non-social mediation happens to involve another person (e.g. tissue damage).
	If an individual engages in dangerous condition, we may stop session but we will not provide one-on-one care unless medical attention is necessary. If a child cannot be left alone, we will conduct a classroom FA. The alone condition is difficult due to all the stimuli in the room.
	Terminating any session is dependent on termination criteria
	I do not run typical Iwata FA assesmsents - particularly conditions such as the Alone conditoin for challenging behavior. So most of my answer reflect a very diferrent assessment procedure
	I do not have the ability to leave the client and observe discretly
	May leave neutral materials in room - non competing stimuli
	Providing in home care and not having a clinical space to conduct FA's we are often not able to fully sanitize environments, but try to remove all preferred materials
	Though I prefer to conduct true "alone" conditions, I often end up conducting "alone" conditions as a "no-interaction" session for the following reasons: child distressed by being alone in a strange room, child is in a familiar room but one that has no observation window. In "no-interaction" conditions the therapist is one that has little to no history with the client. This person may also be collecting data, if there is no way to collect data otherwise.
	I conduct FAs within a school setting and policies prevent me from implementing a true alone condition. I am required to always have an individual within the room during alone conditions.
	The rarely response to "if the individual engages in high levels of dangerous problem behavior" ... I don't conduct Alone sessions when the target behavior is dangerous. In that case I would conduct an ignore condition where I could be in the room and intervene more quickly if need be.
	Latency analysis frequently will preclude extreme bouts of targeted behavior.
	I rarely leave an individual alone in the room. If high levels of dangerous behavior happen then I will terminate the phase. I have yet to experience this.
	not able to leave client alone in a room due to safety and logistics.

	true alone conditions are hard to arrange in schools
	Often times when running FA's in schools, we have an adult in the room who is not interacting at all (unless they need to block severe SIB), as schools are more comfortable not leaving a student alone completely.
	termination criteria would depend upon the level of behavior, medical condition of student, risk given the setting and this criteria would be determined prior to the start of sessions and would be included in the consent
	I've found a no-interaction to be useless. Any behavior that occurs in that condition could be interpreted as maintained by attention and evoked by therapist presence. Also, in running many FAs across many settings and populations, have *never* seen a case of aggression maintained by Auto Sr. Seems rare enough of a phenomenon to safely ignore - just omit Auto Sr test if aggression is the target.
	I always have a termination criteria set prior to starting an FA, especially for the alone condition.
	Typically during all conditions but especially during the alone condition, I look for precursor behaviors that indicate more severe behaviors are going to occur. At this point, I provide the consequence so the more severe behavior is not getting reinforced. It also gives me time during the alone condition to move from the observation spot to the client.
	I often conduct FAs on aggression which requires another person. Also, when done in a session room, I have had difficulty keeping the individual in the room during the Alone condition. So when they attempt to leave the room and I deny access it turns into a new functional context.
	I would terminate the condition based on pre-determined criteria for ending the assessment due to risk of harm
	We can't do the alone condition
	many clinics I've run FAs in do not have a two way mirror so I often sat in the room but did not provide any attention.
	Most FAs I conduct are completed in the day program setting
	For dangerous behavior, would generally have decided to do a latency-based FA or FA of precursor behaviors ahead of time.
	we do not have the facilities to conduct a true alone condition
	I will also monitor possible alternative replacement behaviors
	Again, mostly following Hanley vs Iwata protocol. However we have had to make extreme modifications for extreme situations, including a yoked condition for severe SIB. No space available to observe the client without being in the room with her/him.
	Dangerous is little subjective. If a client was actually injured then of course we would stop and offer care, but many of Our FAs are with what could be considered dangerous behaviors
	Sometimes provide low-preferred materials due to a completely empty room devoid of all material being unrealistic

		A pure alone condition is often not feasible when implementing this condition in the home.
		Sometimes run alone condition in a big therapy common area
		I prefer in vivo alone conditions where the individual is alone from others in a known environment with familiar materials.
		Never had facility that allowed for safe observations from another room.
Control Condition		Attention is provided on a fixed time schedule during the control condition. However, if the individual engages in the target behavior at the moment when attention is to be delivered, wait 5 seconds to provide attention and then resume original fixed time schedule for attention delivery.
		I may provide access to more than 2 moderately preferred items.
		With respect to delivering attention for challenging behavior, going in I usually have been able to identify or at least narrow down functions from interviews with staff and direct observation. if it increase when attention has been observed to have been given, then I don't give attention. I forgot to mention a functional assessment is required yearly and there is data from year to year that is available and reviewed.
		Typically use HP toys rather than MP toys
		again - since I do not do an Iwata et al assessment - my answers are based upon another procedure and may nbot be applicable
		Ensure 5 second delay before providing attention for any inappropriate bx
		Attention may be delivered on a continuous basis - particularly if the parent is conducting the control condition and if this is how they interact with their child naturally. r.e. demands: It is always part of the protocol to not include demands, but i the parent is conducting the session the parent is coached to not provide demands, but some demands may slip in there anyhow. The 5 s "time out" for attention
		Attention is provided, but not on a fixed schedule. I may also saturate the environment with preferred items and not limit to 2-3.
		I would respond to all inappropriate behaviors the same way, not just the one "targeted" by the FA. We look at the entire response class.
		All answers depend on whether using an omnibus (play) control, or test-relevant controls
		We use high preference items and deliver continuous attention in most cases
		We use an almost constant schedule of delivering attention rather than a fixed time 15-30. So, the 2 answers above that are sometimes are based on that
		In all these cases the circumstances dictate the response because there is simply a test condition where we attempt to evoke.
		We have our free plays as natural as possible. We have high and moderately preferred items available. We provide as much or as little attention as the student prefers (based on our interview and observation). We do

	NOT use a fixed time schedule to deliver attention as that is unnatural. We play with the student, as long as they want us to play with them. We do not place any demands, but we do ask questions if we are having a back and forth conversation with the student. As mentioned before, our FAs are individualized based on each student.
	response to inappropriate behavior other than targeted behavior would be determined by severity of behavior and need to keep client and others safe
	I typically use a variable schedule for my attention delivery and have at least 1 highly preferred item present in the room - especially if I suspect a tangible function as the lack of the top preferred tangible may evoke problem behavior.
	control should be matched to test condition, I rarely run an omnibus control
	Again, I will conduct session that focus on the possible replacement behavior
	I usually provide access to more than 2 preferred items to prevent satiation within the session.
	I was trained to provide a highly preferred item during the control condition.
	Whether I ask questions in the control depends on the client and whether that was reported to be a demand/antecedent to problem behavior in the past.
	Depending on the synthesized condition, the control will be matched. Thus it depends on what has been identified in the interview and observation what the control looks like. I'm additon, if challenging behavior occurs more than once in the control I would stop the FA and redesign to ensure that I have complete control over the challenging behavior (being able to turn it off completely in the control session)
	Must be individualized.
	If play is the control condition, I try to make sure that the therapist responds to non-targeted behaviors as they normally would during any given day.
	I use continuous attention and highly preferred items. That's why answers above are never.
Data Collection and Graphing	When people are available for IOA, but insurance often won't pay for additional people.
	Sometimes video recording is used so IOA is collected non-concurrently with the primary data collector.
	It is not always practical to have multiple observers.
	Sometimes video is used for IOA rather than concurrent data collection
	We also conduct TI checks
	IOA collection is a luxury if we have an extra person to do so!
	sometimes an extra observer is not available so cannot do IOA every test, but I try for each FA to have some conditions with IOA
	We collect IOA on at least 30% of testing sessions.
	At times, this may be difficult for each condition due to limited staff that are trained.
	Video recording

I don't have the luxury of extra staff to collect IOA very often.

We usually gather IOA for at least 50% of sessions, if possible

I am not quite sure what you mean about the first question with data being linked to each test and control - if you mean that I take session data for each condition so I know under what condition problem behavior occurred - then yes, I always do that. for the second question - if I do not have a second person consistently and the behavior is not dangerous, I will have the individual conducting the FA sessions (the therapist in session collect data).

at times I have used video to allow another person to score IOA; a challenge of public school service is that it's often not possible to get a 2nd person unless the student has an assigned pca/instructor/nurse

treatment integrity data too

Again, I use B-DataPro. Usually we collect IOA data using a separate computer and behind a one-way mirror at our clinic.

generally I videotape so we can independently take data and compare our findings.

Percentage of sessions with an IOA data collector is lower when conducting FA's in contexts other than a clinical setting (i.e., schools, homes, day-programs, etc.)

IOA is collected if a second observer is available or video recording is conducted.

I work in a school, so I can do IOA. I wouldn't do this if in a home.

Unless I am conducting a study, the need is not high for IOA.

May use video to have another observer collect data at later time.

Only exception is if design modifications are used- but always use line graphs.

Bar graph may be used for specific targets based on relevant research in area (i.e., transition FAs by Iwata presented data in bar graph form)

I use latency to onset of the target behavior on my y-axis

I also graph nontargeted behaviors on a separate graph in multi-element design.

I typically use a standard behavior chart to plot results. I have used Hagopian methods for interpretation of undifferentiated results if using an equal interval graph. I will also calibrate to keep zero off of the x axis to avoid point falling on line. I am more likely to use a histogram for trial-based functional analyses.

We may do a bar graph if measuring latency. However, this is not always the case.

I don't think it's a great idea to limit graphing to a multi element or bar graph. There is a nice literature on within-session analyses and different designs (e.g., pairwise).

Bar graphs sometimes used for Trial-based FAs, not like the bar graph depicted above.

I typically implement Trial Based Functional Analyses which require the use of a bar graph.

As Hank Roane once told me, "If you are using bar graphs, you're hiding something"

90

	We only graph with a line graph, we do not graph FAs with bar graphs
	Believe that the bar graph is easier to interpret for staff and parents when reviewing results
	depends on how many conditions and what type of analysis I am doing.
	Bar graphs are sometimes easier for the family to read and use in a discussion.
	I create bar graphs for simplistic viewing by caregivers and other non-behavioral professionals. But, I use the line graph when I am evaluating the data.
	I have sometimes included something like a bar graph to make it easier for non-Behavior Analysts to read. Nominal vs ordinal data
	I would only use a bar graph for a Trial-Based functional analysis.
	If data were confusing to a parent (bounce across conditions), I might create a bar graph for parent to understand, but I would analyze data as a line graph.
	I graph, but there will only be two paths: control and test. I generally don't use bar graphs, but will sometimes separate within sessions by topography etc. As well as sometimes doing within session analyses.
	My FAs have often involved simple A-B-A reversal designs, so my graphs are developed in that manner utilizing standard single subject graphing protocol
	If analysis done, always graph on line graph
	Once asked for a bar chart.... They then wanted it as a pie chart! That was not provided.
Analysis and Treatment	sometimes increase length of session as well
	It ia difficult to rework the functional analysis in a school setting at times.
	We will do a classroom FA since that is the natural environment.
	I have to look at medication changes as the majority of our population is dually diagnosed. these are the most important condition changes that impact behavior. Also, the functional assessment process is an ongoing one and this information is shared with the team and psychiatry so changes can be made if needed. Knowing a challenging behavior is more likely to occur during the demand phase for say being prompted to attend programs, based on interviews, this is a time when direct observation is more likely to occur to determine a hypothesis escape as a function. And to assess potential interventions. Trialing replacement behavior is sometimes as or more important than the challenging behavior. Personal experience indicates to me that we place too much emphasis on the CB as opposed to the RB.
	We are finding more and more that there are often multiple functions, so unless all behavior is occurring at a low level, we will normally accept them as accurate rather than trying to alter conditions to differentiate further.
	collect more data on the changes in the environment after the behavior occurs - gain more specificity about these changes

I may extend condition times if behaviors are low and undifferentiated. One may also consider if undifferentiated low or high indicate Automatic (subtype 1 or 2).
Tau U data analysis is a very helpful statistical analysis that produces effect sizes and significance levels to which non ABA folks can frequently relate. Also try to use the IISCA approach to begin with to get the best information related to possible conditions.
Typically conduct FAs in the natural environment and usually am running brief or hypothesis testing because I have strong support for the hypothesized function
It depends sometimes on how the sessions "look" or how the student looks or is acting during the sessions relative to how he looked during the observations
I say sometimes on all of these because "it depends" on the individual student, our observations, and input from people who know him/her. We may do any of the above if our information supports it.
The choices I make when this happens really depends on what I'm observing/what I know about the client. It could be the average IRT between behaviors is longer so I increase my condition lengths. I might change my location to a slightly less ideal testing environment to more closely resemble the situation the behavior is likely to occur in. It just depends.
Any of these would be done BEFORE or instead of an analog FA based on information from interview
I was trained by Henry Roane so I use his 2013 article every time. Also, If there are no target behaviors occurring, I will speak with the caregivers in more detail and possibly use an open-ended interview as outlined by Hanley et al 2014.
Also reassess for carryover effects
We often run FAs in the client's home. If we do not see differentiation we may bring in parents or other family if appropriate.
TBA- almost always in a naturalistic setting
There are way too many bcbas in Ontario with more than 5 years of experience who do not understand how to run an FA or what it means. It's problematic when we share staff or clients, and that supervisors are unconcerned.
Sometimes changes with the condition is needed
Also determine if session length needs to be increased.
When it can be difficult to evoke challenging behaviors in a novel environment, returning to an environment where the behavior has historically occurred can lead to better results.
The IISCA is already conducted with a single test condition and matched control. If the analysis is not differentiated I would re-evaluate, maybe clarify the interview, include caregivers in the analysis etc.

	We will sometimes continue FA during the first few days of therapy when we do not see the behavior during assessment.
	Levels of behaviour are often determined prior to the FA. Low level behaviour would not have an FA, but data collection via abc and review after week of data collection to find pattern.
Additional Components	staff training
	I often include idiosyncratic conditions as well as enriched and barren control conditions. I have additionally divided the attention condition into absent and divided attention conditions where appropriate for the child.
	I often practice Hanley's FA
	None; you have everything we do covered
	Staff training with role play for all conditions and data collection for observers
	Thenroom we use for the FA is a padded room with a locked door. If during an alone condition, the child bangs on the door, we will stop the condition and allow him/her to come out or we will go in. However, we will continue to run the condition again.
	variations on type of FAs available
	How tasks are selected for demand condition
	The questionnaire covered everything I typically do.
	working in schools, there are rarely austere room; one of the many challenges of using FA in applied settings
	Explicit data collection on the environmental changes immediately following the occurrence of problem behavior
	If a technician is involved in data collection during the FA, ensuring that inter-rater reliability is demonstrated prior to data collection for FA
	consider time within each condition (more or less may be necessary)
	I always have at least two observers even when not conducting IOA. I also utilize behavioral skills training when training staff (usually classroom staff) to implement conditions. Due to legal timelines, I have on occasion implemented conditions myself due to control for fidelity of implementation procedures.
	Run an alternative FA like a Latency or Pre-cursor.
	discuss with colleagues
	Interview staff/family prior to FA to find most likely times/functional hypothesis and to rule out attempting certain conditions (such as automatic) if indicated not necessary.
	Pairwise is close. But there could be a section on multiply-controlled behaviors.
	In attention conditions- we generally only leave moderately preferred items, so as not to have the high preferred items compete with the value of attention if we think this could occur. In the tangible conditions, we generally only have high preferred and low preferred items, then when we remove the high preferred items there is

something low preferred available to play with. However, if we observe the student to be left with nothing when preferred items are removed we will do this instead. Ideally, we have someone the student knows run conditions, with coaching as needed, (instead of a random therapist), to try and keep it as natural as possible. Ultimlately, as stated numerous times, we do not have a strict protocol that we follow for every FA. Every student is different and their environment is different. We try and set up our FA to model what is happening in the classroom as closely as possible.

records review, medical consent, multi-component analysis if two functions appear to occur concurrently, breaking down a function into sub=components: for example running both positive and negative attention (perceived to the giver as punishment) as two separate conditions. This is especially true of grounding and can be potent information for staff to help them understand that any attention is attention even if it seems punishing to them.

I may also include idiosyncratic functions based on the indirect assessment and/or observations from the FA sessions.

I submit FA protocols for a department peer review prior to implementing the FA

Well I'm not sure if this is an essential practice but I make sure to have a brief meeting with the person conducting IOA to make sure they are clear on what they are taking data on.

Idiosyncratic conditions

At our clinic we also use a walkie with an ear bud so the session therapist can be prompted if a condition was not being completed with fidelity.

ISCA

Use of latency-based functional analysis to limit damage caused by self-injurious behavior.

I often conduct training and practice to mastery with persons who are helping but may be unfamiliar with the procedures before starting the analysis.

Assess for carryover effects if seems indifferentiated.

Procedural integrity. Data collector to ensure staff are running everything correctly

Procedural fidelity and procedural fidelity IOA when sufficient staff available; training of FA condition

procedures and data collection to ensure consistent observations

thorough records review, review of all previous treatments; open ended interview

I have noted in several places that I attempt an FA on the possible alternative behavior...one that the person already does...to determne if it may have the same function as the challenging behavior. That way I do not have to teach a new response, just reinforce an existing functionally equivalent response.

Clear explanation of each phase and step and what is expeufrom each participant. Frequent feedback throughout the conditionon on correct and incorrect implementation. I no longer include participants to help with

	conducting FAs who are not board certified or working towards some sort of certification and want to understand why we are doing it.
	Creating conditions when the standard conditions are not effective
	Obtaining medical clearance when the behavior could have a physiological cause (e.g., head banging, pica, etc.) sometimes behaviors are under stim control of a particular person (parent) thus we may include them in relevant conditions
	Parent as the contingency presenter
	Following the FA, have extended time in a "control condition-like conditions to decrease the likelihood there are global carryover effects from the FA context to the natural context (i.e., clinic to home, pull-out area to classroom, etc.). Per the BACB ethical guidelines, graph and present the findings to the relevant stakeholders in language that is understandable. I do this immediately and provide opportunity for stakeholders to ask questions about the assessment procedures and results.
	Utilize conditional and background probabilities to choose antecedent events most closely associated with evocation of problem bx and match in fa
	Precursor fa; trial based Fa; latency based Fa
	I emphasize ecological validity from the start for all FAs, rather than following traditional protocols
	Determine conditions to include based on results from the indirect and direct assessments.
	sometimes training for participants... parents involvement.

APPENDIX F

Participant Response Distribution

Component	Response Options				
	1	2	3	4	5
PA-1	2	26	26	44	100
PA-2	0	2	20	40	136
PA-3	2	6	31	79	80
PA-4	2	1	6	34	155
PA-5	0	3	8	28	159
PA-6	1	3	6	16	172
PA-7	0	1	4	18	175
PA-8	0	1	0	1	195
PA-9	2	5	33	67	91
PA-10	1	4	27	75	91
PA-11	0	1	1	18	176
CI-1	0	16	51	80	50
CI-2	25	35	50	51	37
CI-3	6	36	75	52	29
CI-4	3	19	62	72	42
CI-5	24	23	32	59	60
CI-6	14	28	57	61	37
AC-1	14	14	36	51	83
AC-2	5	5	50	71	66
AC-3	10	8	19	39	121
AC-4	12	8	20	37	120
EC-1	1	7	42	82	65
EC-2	5	2	19	53	118
EC-3	4	6	21	59	108
EC-4	10	13	31	45	97
EC-5	9	6	15	64	104
TC-1	5	10	12	47	123
TC-2	6	7	12	44	129

TC-3	8	7	16	42	124
ALC-1	18	25	37	58	59
ALC-2	3	5	10	32	146
ALC-3	3	7	25	69	94
CC-1	5	9	26	61	97
CC-2	2	5	25	64	101
CC-3	7	6	30	65	89
CC-4	13	11	26	61	85
CC-5	4	6	18	44	124
CC-6	0	0	9	39	148
DC and G-1	0	2	3	11	182
DC and G-2	0	14	43	65	76
DC and G-3	1	6	17	48	125
DC and G-4	58	50	47	27	16
A and T-1	0	1	4	30	162
A and T-2	2	14	36	40	106
A and T-3	43	40	38	43	32
A and T-4	85	51	31	14	17
A and T-5	9	26	76	61	25
A and T-6	16	24	71	76	11
A and T-7	8	26	91	61	11
A and T-8	5	9	48	97	38
A and T-9	1	20	52	90	35

APPENDIX G

HSIRB Approval Letter

Institutional Review Board
FWA00007042
IRB00000254

Date: May 25, 2018

To: Wayne Fuqua, Principal Investigator
         Alissa Conway, Student Investigator for Dissertation

From: Amy Naugle, Ph.D., Chair

Re: HSIRB Project Number 18-05-19

This letter will serve as confirmation that your research project titled "Evaluating Recommendations versus Utilization of Essential Components of a Functional Analysis Procedure" has been **approved** under the **exempt** category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note: This research may **only** be conducted exactly in the form it was approved. You must seek specific board approval for any changes in this project (e.g., *you must request a post approval change to enroll subjects beyond the number stated in your application under "Number of subjects you want to complete the study*)." Failure to obtain approval for changes will result in a protocol deviation. In addition, if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

Reapproval of the project is required if it extends beyond the termination date stated below.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: **May 24, 2019**

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