Executive Summary—
Development and Validation of a Delineation of Practice and Test Specifications for a New Credentialing Program—CBPA-AP®

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Contents

Appendices

INTRODUCTION

Given the growing need to provide specialized, quality intervention for individuals diagnosed with autism spectrum disorder (ASD), the Autism Partnership Foundation (APF) decided to explore the development of a suite of credentialing programs that will promote a progressive approach to Applied Behavior Analysis (ABA) as a treatment method for ASD.

APF recognizes the importance of conducting all credentialing-related activities in alignment with industry standards and best practice. To help support and guide the credentialing development process, APF partnered with members of the ACT Credentialing & Career Services team which was comprised of recognized thought leaders and experts in the field of credentialing advisory services (Dr. Greenberg, Jacqueline Carpenito, and Carla Caro).

APF and ACT began their credentialing efforts with a series of strategic meetings—both in-person and virtual—to define the mission and vision of the proposed multi-tiered certification program. An 11-member Advisory Committee comprised of nationally and international recognized experts in progressive applied behavior analysis was assembled to iteratively develop the mission and vision statements and identify the potential levels of certification. The Advisory Committee provided conceptual guidance and input throughout the certification program development and validation process. Members of the Advisory Committee represented thought leaders, researchers, consultants, academics, and clinical program directors.

The following Mission and Vision statements document APF's aspirations regarding certification in a clear and concise manner, highlight the focus of APF's certification-related development and implementation initiatives, and provide a basis for developing non-certification related aspects of APF's strategic plan that complement the certification initiatives.

> **Mission Statement:** The Autism Partnership Foundation's credentialing programs will preserve and promote a progressive approach to Applied Behavior Analysis (ABA) as a treatment method for Autism Spectrum Disorder (ASD). These programs will use a combination of written- and performance-based assessments to identify qualified clinicians in the field of ABA and autism treatment.
>
> **Vision Statement:** APF-credentialed professionals educating, supervising, or directly implementing ABA-based procedures will produce an improved quality of life for individuals with ASD.

The Advisory Committee determined it was logical to begin with the credentialing program for those professionals functioning at an expert, strategic level—educating and training other professionals. APF began work with ACT's Credentialing & Career Services team to conduct a comprehensive study of the target role, and to identify and validate the domains of responsibility and the associated knowledge and skill base required for effective practice by such professionals.

The conduct of a defensible practice analysis study is required to meet the certification program accreditation requirements of the American National Standards Institute (ANSI, 2012) and the National Commission for Certifying Agencies (NCCA, 2014 [in effect at the time of the practice analysis] and updated in 2021). Such a study generally comprises two stages—the development of a draft delineation of practice followed by validation initiatives. In the case of an existing credentialing program, a practice analysis study involves the implementation of a large-scale survey of all credentialed practitioners.

In the current case, where the new credential was being developed and validated, the practice analysis study relied on a highly iterative process designed to incorporate multiple perspectives of individuals already operating at the target level for the credential. The existing target audience was deemed to be small. In part, the development of the credential was aspirational; that is, it was designed to identify existing expert, strategic

leaders and to inform a professional trajectory for others to follow in the future. Accordingly, no large-scale survey was conducted; rather efforts were made to include as many subject matter experts as possible in the development and validation process. To that end, approximately 50 SMEs contributed to the development and validation of the delineation.

According to standards established by the testing industry, the mechanism for establishing the content to be assessed in a certification examination is the conduct of a practice analysis study of the profession. Data from the APF practice analysis study were designed to support the development of a structured description of contemporary practice and were used to inform the content outline for APF examinations.

METHODOLOGY

The practice analysis study reported herein conforms to current testing and measurement requirements for the validation of certification examinations as found in the NCCA Standards for the Accreditation of Certification Programs (2021), the International Standards Organization (ISO) American National Standards Institute (ANSI), National Accreditation Board (ANAB), (ANSI 17024, 2012), as well as the AERA/APA/NCME Standards for Educational and Psychological Testing (2014).

1. APF and ACT facilitated an extended series of discussions including numerous face-to-face and virtual meetings with the members of the Advisory Committee regarding the conduct of a practice analysis study to support the development of a new credentialing program—one designed to recognize *expert, strategic leaders* in the field of progressive applied behavior analysis. The associated credential was to be known as *Certified Progressive Behavior Analyst—Autism Professional®* (CPBA−AP®). The Advisory Committee met in-person at four times at 2-day meetings in 2017 and 2018. In addition, monthly conference calls facilitated by ACT were conducted to develop, review, and refine the draft delineation of practice. To facilitate the work, the Advisory Committee identified a Task Group of four SMEs (Drs. Justin Leaf, Joe Cihone, John McEachin, and Ron Leaf) to produce an initial set of learning objectives that could serve as the basis for the subsequent iterative review and revision of a practice analysis delineation. Additionally, during successive months, ACT reviewed the statements drafted by the Task Group and provided feedback as to how they might be revised.

2. The Advisory Committee provided conceptual guidance throughout the course of the practice analysis process. They ensured that ACT and the many additional subject-matter experts (SMEs) provided guidance throughout the study. As with all new credentialing programs, their initial remit was extensive and included decision making regarding standards for eligibly, examination, and experience requirements, as well as ethics.

3. The work of the Advisory Committee was augmented by up to 30 SMEs to identify the breadth and depth of the delineation of practice. These subject matter experts represented diverse demographic backgrounds and came from all parts of the United States as well as globally. They provided the perspectives of researchers, consultants, academics, and clinical service providers. These SMEs participated in both an independent, structured review of the delineation and a feasibility survey about the value of such a credentialing program.

4. Subsequently, the work of the Advisory Committee was augmented by 15 subject matter experts participating in focus panels and online rating activities as part of a formal validation process. ACT facilitated three 120-minute focus panels with individuals *not* previously exposed to the delineation. Prior

to the conduct of the focus panel, panelists were emailed a copy of the delineation along with a brief survey. They were instructed to carefully review the content of the delineation and then rate the domains, subdomains, and associated knowledge and skills in the context of the proposed target audience for the credential and the associated education and experience requirements for the credential. Participants were asked to respond to the following:

- How essential is it that candidates know the content, or be able to perform the tasks, related to each domain?
- What percentage of the certification examination do you believe should focus on each domain?
- (For each domain): Would you add any additional content? Was anything missing?

During the focus panels, panelists were asked to comment on topics related to the development of the certification programs, including the potential draft delineation and eligibility requirements. They provided general feedback as to the importance and utility of each domain; how it might be expanded or narrowed, and whether the content was unique to progressive applied behavior analysis. Focus panelists provided suggestions for the enhancement of the delineation and estimates related to the value of each domain—that is, how much each domain might contribute to an assessment blueprint. See Appendix 1 for quantitative results from the focus panelists.

5. Finally, ACT facilitated a 2-day meeting of the Advisory Committee in April 2018. The Advisory Committee reviewed the draft delineation of practice. During the review, members of the Advisory Committee focused on reconciling the comments of all internal and external subject-matter experts and ensuring that the delineation reflected the Mission and Vision of the proposed credentialing program. They evaluated each statement as follows:
   - Was it *critical* to success?
   - Was it within the scope of an expert, strategic leader?
   - Could it be assessed via a multiple-choice or performance examination?

Practice Analysis Delineation and Final Assessment Blueprint

The following provides a summary of the fourth meeting of the Advisory Committee meeting during which the delineation of practice was reviewed and finalized. The final delineation included 10 domains and subdomains as well as associated knowledge and skills. The purpose of the meetings was to:

- Review and reconcile all internal and external SME feedback about the delineation
- Finalize the content of the delineation for use in a comprehensive assessment blueprint
- Identify possible assessment modalities for each element in the delineation
- Develop a comprehensive assessment blueprint to support the developed of a 2-part examination program, including a multiple-choice and a performance examination.

Members of the Advisory Committee created a process to *define* each of the 10 domains in the delineations. Each domain included multiple subdomains and associated knowledge and skills. The final set of domains and the numbers of associated knowledge and skills follows:

Domains	# sub-domains	# of KSs
Domain 1: Foundational knowledge of autism/ASD and ASD interventions	5	10
Domain 2: Principles, concepts, and history of behaviorism	4	7
Domain 3: Respondent conditioning theory and application	5	10
Domain 4: Contingency-focused responsiveness to child and progress of treatment	7	29
Domain 5: Dynamic application of basic behavioral tools	5	17
Domain 6: Progressive teaching procedures	5	18
Domain 7: Curriculum across the life span	7	21
Domain 8: Behavior intervention planning	10	31
Domain 9: Treatment Design and Decision-Making	4	11
Domain 10: Clinical Skills, Training, Supervision, and Consultation	6	25

As part of the meeting, each member of the Advisor Committee was asked to rate the degree to which each domain should be represented in an assessment blueprint. Two rounds of ratings were collected (Round 1 followed by discussion; and Round 2 rerating) to validate the final assessment blueprint. In making their ratings, the Advisory Committee was asked to consider the criticality of each domain, the amount of testable material in the domain, and the unique contribution the domain made to a progressive approach to applied behavioral analysis. Finally, members of the Advisory Committee were asked to make their ratings in the context of the aspirational goals of the proposed credential—a credential to recognize an expert, strategic level of performance to facilitate advancing services for clients with ASD.

The results of the ratings and discussions are summarized below and are the basis for the blueprint for the multiple-choice examination.

Table 1: Content Outline and Assessment Blueprint for Multiple-Choice Examination	
Domain 1: Foundational knowledge of autism/ASD and ASD interventions	8%
Domain 2: Principles, concepts, and history of behaviorism	8%
Domain 3: Respondent conditioning theory and application	7%
Domain 4: Contingency-focused responsiveness to child and progress of treatment	10%
Domain 5: Dynamic application of basic behavioral tools	12%
Domain 6: Progressive teaching procedures	14%
Domain 7: Curriculum across the life-span	7%
Domain 8: Behavior intervention planning	10%
Domain 9: Treatment Design and Decision-Making	12%
Domain 10: Clinical Skills, Training, Supervision, and Consultation	12%
Total	100%

Separately, the focus of the Content Presentation Evaluation, including the rubric and associated scoring categories and weightings were derived from the mission and vision of the credentialing program—to identify individuals functioning at an expert, strategic level; that is, those that can effectively compare and contrast progressive and conventional applied behaviour analysis (including the role of clinical judgment) in the context of what it means to provide services to those with Autism Spectrum Disorder.

Review and Approval of Delineation

Following the meeting, the delineation underwent an editorial review and minor grammatical issues were clarified. Subsequently, the delineation and the multiple-choice test blueprint was presented and unanimously adopted by the Advisory Committee during Fall 2018. See Appendix 2 for a comprehensive copy of the delineation.

Appendix 1. Focus Panel Survey and Protocol

Online Data Collection Instrument—Screen Captures

Data collection
survey screen capture

Domain	% exam
Domain 1: Principles, concepts, and history of behaviorism	5.8%
Domain 2: Foundational knowledge of autism/ASD and ASD interventions	7.7%
Domain 3: Respondent conditioning theory and application	5.4%
Domain 4: Contingency-focused responsiveness to child and progress of treatment	10.5%
Domain 5: Principles and dynamic application of basic behavioral tools	10.5%
Domain 6: Progressive teaching procedures	11.8%
Domain 7: Curriculum across the life-span	8.0%
Domain 8: Behavior intervention planning	10.9%
Domain 9: Treatment Design and Decision-Making	9.5%
Domain 10: Training and Supervision	9.5%
Domain 11: Clinical Skills, Collaboration, Sensitivity, and Ethics	9.3%
Other (Specify.)	1.1%
Total	100.0%

Domains ranked in order of more to less essential	% indicating "most essential"	Rank order
Domain 6: Progressive teaching procedures	90.9%	Tied 1
Domain 8: Behavior intervention planning	90.9%	Tied 1
Domain 4: Contingency-focused responsiveness to child and progress of treatment	81.8%	Tied 3
Domain 5: Principles and dynamic application of basic behavioral tools	81.8%	Tied 3
Domain 9: Treatment Design and Decision-Making	81.8%	Tied 3
Domain 11: Clinical Skills, Collaboration, Sensitivity, and Ethics	72.7%	6
Domain 7: Curriculum across the life-span	54.5%	Tied 7
Domain 10: Training and Supervision	54.5%	Tied 7
Domain 2: Foundational knowledge of autism/ASD and ASD interventions	45.5%	9
Domain 3: Respondent conditioning theory and application	36.4%	10
Domain 1: Principles, concepts, and history of behaviorism	18.2%	11

Protocol

Hi and thank you again for taking the time to give us your input on this important initiative! As we have mentioned in our e-mails, the Autism Partnership Foundation, or APF is developing credentialing programs as one way to help preserve and promote a progressive approach to Applied Behavior Analysis (ABA) as a treatment method for Autism Spectrum Disorder. APF has engaged ACT-ProExam to help in this development effort. We are a mission-driven non-profit organization with more than 45 years of credentialing advisory services experience. APF has chosen to work with ACT-ProExam to ensure all credentialing efforts are done in accordance with industry standards.

I am a credentialing advisory services program director, and I am joined today by Sandy Greenberg who is the Vice President of credentialing advisory services. Also on the line is Julie Stiglich our project manager at APF.

The first credential being developed in this effort is a certification for individuals with a significant amount of experience implementing ABA-based procedures and we will review the proposed eligibility requirements that were sent prior to this panel in a few minutes.

First, we would like to take a moment to get to know you better and to have you introduce yourself to the other subject-matter experts on the line. Your unique perspectives are essential to ensuring we are building a valuable and on-target certification program.

If you could give us your name, location, and a little bit about your background, current practice setting and the work you're doing now

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Let's take a look at the proposed eligibility criteria for the certification – what we titles "description of target professionals for certification" in your pre-meeting mailing

We are discussing a potential certification for individuals with 5 or more years implementing ABA-based procedures working with individuals diagnosed with ASD.

There is a requirement (1,500 hours) that candidates have experience working directly with individuals diagnosed with ASD but may no longer be working in the direct service role (e.g., may working in education, training, or director roles).

Within the approx. 5 years of experience candidates for this level of certification are also expected to have at least 3,000 hours of supervisory or training experience

There is also an education requirement of at least a Master's Degree in applicable areas, but it is envisioned that some candidates may have a doctoral level degree.

We would like to get your initial reactions to the proposed new certification and the eligibility criteria.

- Any first thoughts?
- Do you think it will be valuable to the field?
- Do you see yourself as a potential candidate?
- Any feedback at a very high-level

Okay now I would like to move into the content description document – we are going to be showing a less detailed version on screen so there won't be too much scrolling – which is why we requested, that if possible, you have a hard copy of the document.

So, at the highest level, do you think these 11 areas were on target? We know there is lots of content underneath, but if you were to have seen a list of just the 11, do you think it's comprehensive? Would it give someone a good picture of the target professional?

I am going to show on screen some of the survey results on the 11 domains.

We will go through all of the domains to get your input, but I would like to start with a general discussion of the domains that were flagged as somewhat less essential than others – D1, D3

Let's start with Domain 1 – what makes this one less essential to focus on for the credential?

Even though it's lower, was there any content within this domain that made it more difficult for you to put it in the "least essential" box? Any content you would actually flag as essential to test?

Any other feedback on Domain 1? – if you need to, you can reference a specific statement number and I'll put that in the note.

Same for Domain 3

Let's talk about the 2 domains that rose to the top.

Let's start with Domain 6.

What were the pieces that made this so essential?

Any other feedback on Domain 6?

Domain 8, Domain 4, Domain 5, Domain 7, Domain 9, Domain 10, Domain 11

Do the ABCs make sense?

Thank you for great feedback on this foundational document – it will go a long way to making it stronger

We had some input on content that might be missing from the foundational document.

Since we have the time, I would like to give you the opportunity to add any further comments. All of your VERBATIM comments from the survey will be sent back to the Advisory Group, but I just pulled out some bullet points here for others to on the FP to read and react to as well.

Appendix 2. Final Delineations including Domains, Subdomains, and Knowledge and Skills

Meeting Output

Domain 1: Foundational knowledge of autism/ASD and ASD interventions

A. DSM

1. Describe the development, purpose, and current use of the levels of disability indicated with the DSM-5 ASD diagnosis.
2. Compare ASD to typical development and other Developmental Disabilities and list comorbidity rates of ASD with other disorders (e.g., Down Syndrome, Attention-Deficit/Hyperactivity Disorder [ADHD], Sensory Processing Disorder) or intellectual disabilities.
3. Identify diagnostic and behavioral differences between girls and boys across child and adolescent development.
4. Identify the changes from DSM-4R to DSM-5 in terms of the diagnosis of Autism Spectrum Disorders and the evolution of criteria for autism over the years.

B. Etiology

1. Identify major evidence and non-evidence based theories of ASD etiology.
2. Identify the results, claims, limitations, ethical concerns, and harm of Andrew Wakefield's claims about vaccines as it relates to ASD.

C. Assessments

1. Identify types of assessments (i.e., norm-referenced vs. criterion-referenced), content of assessments (e.g., intellectual, cognitive, behavioral, social, adaptive skills), and the application of assessment results that are used for individuals diagnosed with ASD.
2. Identify the types of assessments/screening tools and specific ones that are most appropriate to use in the assessment of individuals with ASD.

D. Impact of Autism on Parents and Siblings

1. Identify common challenges of parents/caregivers of an individual diagnosed with ASD (e.g., financial, cultural, family dynamics, understanding and connecting with beneficial resources).
2. Identify common challenges of siblings of an individual diagnosed with ASD (e.g., learning disabilities, social skills deficits, stress, depression, isolation).

E. Seminal Studies in Autism

1. Identify and describe the foundational and pertinent literature as it relates to the development of ASD and ASD intervention (e.g., DeMeyer et al., 1981; Kanner, 1943; Lovaas, Koegel, Simmons, & Long, 1973; Lovaas, 1987, add more references to make a broader).

Domain 2: Principles, concepts, and history of behaviorism

A. Basic Concepts

1. Identify the seven dimensions of applied behavior analysis (e.g., applied, behavioral, analytic).
2. Compare and contrast major components of social and experimental validity.
3. Identify major distinctions between behavior analysis and other fields of psychology (e.g., gestalt psychology, cognitive psychology, Freudian psychology).
4. Identify the differences between scientific, pseudoscientific, and antiscientific procedures currently available/presented to families and other practitioners as treatment alternatives.

B. Foundations of Behaviorism

1. Identify the founders of behaviorism (e.g., Pavlov, Skinner, Watson, Thorndike, and Tolman).
2. Identify the major contributions of the founders of behaviorism
3. Identify and describe the foundational and pertinent literature as it relates to the development of behaviorism (e.g., Pavlov, 1927; Skinner, 1935; Tolman, 1922).

C. Foundations of ABA

1. Identify the founders of ABA (e.g., Baer, Wolf, Risley).
2. Identify the major contributions of the founders of ABA
3. Identify and describe the foundational and pertinent literature as it relates to the development of ABA (e.g., Ayllon & Michael, 1959; Baer, Wolf, & Risley, 1968; Isaacs, Thomas, & Goldiamond, 1960).

D. Evolution of the Discipline

1. Identify important events of the beginning and evolution of applied behavior analysis (e.g., the creation of JABA, development of APA 25, and HDFL creation and how these events shaped the current field of ABA.

Domain 3: Respondent conditioning theory and application

A. Basic Concepts

1. Identify components of respondent conditioning.
2. Distinguish if a behavior is operantly controlled or respondent controlled.
3. Identify which respondent procedure(s) should be implemented based upon what is occurring in the environment.
4. Identify which respondent procedure is being implemented.

B. Acquisition & Extinction

1. Identify components of respondent acquisition.
2. Identify components of respondent extinction.
3. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature about respondent acquisition (e.g., Pavlov, 1927; Skinner, 1935).

C. Generalization

1. Identify characteristics of respondent generalization.

D. Exposure

1. Identify components and steps of respondent exposure procedures (e.g., graduated exposure).
2. Identify and describe the foundational and current pertinent literature about respondent exposure procedures (e.g., Wolpe, 1961).
3. Evaluate the application of respondent exposure procedures (e.g., graduate exposure).
4. Compare and contrast the components of the different exposure procedures.

E. Reciprocal inhibition

1. Identify components and steps of reciprocal inhibition procedures (e.g., systematic desensitization, flooding, or graduated exposure).
2. identify and describe procedures, results, limitations, and contributions of foundational and current pertinent literature on reciprocal inhibition (e.g., Lazarus, 1961, 193, Wolpe & Lang, 1964)
3. evaluate the application of different reciprocal inhibition procedures
4. Compare and contrast different reciprocal inhibition procedures.
5. Identify the advantages and disadvantages of different reciprocal inhibition procedures.

Domain 4: Contingency-focused responsiveness to child and progress of treatment

A. Basic Concepts

1. Analyze the application of basic concepts of providing reinforcement (e.g., age appropriate, consistent, and preferred).
2. Identify the variables that contribute to altering the effectiveness of reinforcement (e.g., satiation, timing, response effort).
3. Identify and describe procedures, results, limitations, and contributions of foundational and current pertinent literature on basic concepts as they relate to reinforcement (e.g., Ferster & Skinner, 1957).
4. Identify the major considerations in the use of reinforcement (e.g., age appropriate, consistent, and preferred) and why they are important.
5. Identify ways to thin schedules of reinforcement, shift to naturally available reinforcers, and use supplemental reinforcement.

B. Conditioning

1. Identify components of conditioning stimuli (e.g., favorable affect, demonstrate novel ways, incorporate individual preferences) for individuals with ASD.
2. Identify and describe procedures, results, limitations, contributions of foundational and current pertinent literature about conditioning (e.g., Fuller, 1949, Greer, Singer-Dudek, Longano, & Zrinzo, 2008; Isaacs, Thomas, & Goldiamond, 1960).
3. Evaluate the application of conditioning procedures (e.g., favorable affect, demonstrate novel ways, incorporate individual preferences).
4. Describe why it is important to condition reinforcers for individuals diagnosed with ASD.

C. Identifying Reinforcers

1. Identify components of identifying reinforcers (e.g., verbal behavior, non-verbal behavior, sampling) for individuals with ASD).
2. Identify and describe procedures, results, limitations, and contributions of foundational and current pertinent literature about identifying reinforcers (e.g., DeLeon & Iwata, 1996; Leaf et al., 2016; Roane, Vollmer, Ringdahl, & Marcus, 1998)
3. Evaluate the application of identifying reinforcers (e.g., verbal behavior, non-verbal behavior, sampling).
4. Compare and contrast progressive (e.g., in the moment reinforcer analysis) and standard approaches (e.g., MSWO, paired stimulus preference assessment) to identifying reinforcers for individuals with ASD.
5. Identify what variables are critical and why they are critical when identifying reinforcers.

D. Using Reinforcement Differentially

1. Identify components of using reinforcement differentially (e.g., quality, quantity, schedule, or intensity) for individuals with ASD.
2. Identify and describe procedures, results, limitations, and contributions of foundational and current pertinent literature about reinforcing differentially (e.g., Kassardjian et al., 2016; Karsten & Carr, 2009; Vladescu & Kodak, 2010).
3. Evaluate the application of using reinforcement differentially (e.g., quality, quantity, schedule, or intensity).
4. Compare and contrast progressive and standard approaches to using reinforcement differentially.
5. Identify rationales for and advantages of using reinforcement differentially.

E. Schedules

1. Identify types of reinforcement schedules (e.g., fixed, variable, ratio, interval, mixed).
2. Identify and describe procedures, results, limitations, and contributions of foundational and current pertinent literature about reinforcement schedules (e.g., Ferster & Skinner, 1957).
3. Evaluate the implementation of various reinforcement schedules (e.g., basic, variable mixed).

4. Identify the pros and cons of the various reinforcement schedules as they relate to intervention for individuals diagnosed with ASD.
5. Identify what reinforcement schedule (e.g., basic, variable, mixed) was implemented based upon graphical representation.
6. Identify behavioral patterns of each schedule of reinforcement (e.g., basic, variable, mixed).

F. Punishment

1. Identify components of punishment (e.g., immediacy, consistency, and intensity).
2. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature on punishment (e.g., Baer, 1970; Foxx & Azrin, 1973; Risley, 1968)
3. Evaluate the implementation of punishment guidelines (e.g., immediacy, contingent, and intensity).
4. Identify the range of potential punishers from low- to high-intensity.
5. Describe the aversives controversy (e.g., corporal punishment versus non-corporal punishment, push to eliminate punishment in practice).
6. Identify how to implement punishment effectively, ethically, and minimize potential negative side effects when implementing punishment.

G. Contingency Systems

1. Identify various contingency systems (e.g., level system, basic token system, response cost, and magic number) that can be implemented during intervention with individuals diagnosed with ASD.
2. Identify the components (e.g., contingent, "cash in," conditioning) of various contingency systems that can be implemented during intervention with individuals with ASD.
3. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature on various contingency systems (e.g., level system, basic token systems, magic number) (e.g., Ayllon & Azrin, 1965; Kazdin, 1982).
4. Evaluate the application of various contingency systems (e.g., level system, basic token economy, magic number).
5. Identify which contingency system (e.g., level system, basic token economy, and magic number) is being implemented.
6. Compare and contrast progressive and conventional approaches to implementing contingency systems.

<u>Domain 5: Dynamic application of basic behavioral tools</u>

A. Basic Concepts/General Teaching

1. Evaluate intervention for maximizing the number of learning opportunities.
2. Analyze the application of pacing during teaching.

B. Prompting and Flexible Prompt Fading

1. Identify the components of various prompting systems (e.g., flexible prompt fading, most-to-least, and constant time delay) as they relate to intervention for individuals diagnosed with ASD.
2. Identify various prompt types (e.g., point, positional, physical) and the advantages and disadvantages of these prompt types as it relates to intervention for individuals with ASD.
3. Identify which prompting system is being implemented.
4. Describe issues around prompt dependency and how to decrease prompt dependency.
5. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature about prompting and flexible prompt fading (e.g., Leaf et al, 2014; Leaf et al., 2016; Soluaga et al, 2008).
6. Evaluate the application of flexible prompt fading (e.g., timing, type of prompt, or intrusiveness).
7. Compare and contrast progressive prompting (flexible prompt fading) to standard approaches (e.g., most-to-least) of prompting.

8. Identify the strengths and limitations of prompting systems (e.g., flexible prompt fading, most-to-least, and constant time delay).
9. Identify considerations for choosing between prompting and shaping.

C. Shaping

1. Identify components of a progressive approach to shaping (e.g., identifying next steps, increase variability, and expanding response class) for individuals diagnosed with ASD.
2. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature about shaping (e.g., Ferguson & Rosales-Ruiz, 2001; Peterson, 2000; Stuecher, 1972)
3. Evaluate the application of a progressive approach to shaping (e.g., identifying next steps, increase variability, and expanding response class).
4. Compare and contrast progressive and standard approaches to shaping.

D. Chaining Procedures

1. Identify components of chaining procedures (e.g., forward, backward, whole chain).
2. Identify which chaining procedure is best to implement given certain contextual variables.
3. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature about chaining (e.g., Hagopian et al., 1996, Kayser et al., 1986, Jerome et al., 2007)
4. Evaluate the application of various chaining procedures.

E. Task Analysis

1. Identify components of a task analysis for a given skill (e.g., self-help, daily living, or social skill).
2. Evaluate the application of task analyses.

<u>Domain 6: Progressive teaching procedures</u>

A. Discrete Trial Teaching (DTT)

1. Identify components of a progressive approach to DTT (e.g., flexible rotation of stimuli, shaping attending, instructive feedback).
2. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature on a progressive approach to DTT (e.g., Leaf, Cihon, Leaf, McEachin, & Taubman, 2016; Leaf et al., 2016).
3. Evaluate the application of progressive DTT (e.g., flexible rotation of stimuli, shaping attending, instructive feedback).
4. Compare and contrast progressive and standard DTT.
5. Identify when to use various data collection procedures used when implementing DTT.
6. Provide rationales for the components of a progressive approach to DTT (e.g., instructive feedback, flexible).
7. Predict the next targets within the instructional time by evaluating variables (e.g., success rate, attending, novelty) that the child is currently displaying.

B. Incidental Teaching

1. Identify components of incidental teaching (e.g., arranging environment, following lead, withholding reinforcers) for individuals diagnosed with ASD.
2. identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature on research for incidental teaching (e.g., McGee et al., 1983, Hart & Risley, 1975)
3. Evaluate the application of incidental teaching (e.g., arranging environment, following lead, and withhold reinforcers).
4. Describe the benefits and limitations of incidental teaching and other naturalistic procedures.

C. Modeling and rehearsal

1. Identify key components of teaching procedures using modeling and rehearsal (e.g., Cool/Not Cool, video modeling, teaching interaction procedure, behavioral skills training)
2. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature on teaching procedures using modeling and rehearsal (e.g., Au et al., 2016; Leaf et al., 2016; Milne et al., 2017 ADD MORE TO MATCH EGs up above)
3. Evaluate the application of teaching procedures using modeling and rehearsal (e.g., demonstrations, role-play, and reinforcement).
4. Describe the strengths and limitations of implementing various teaching procedures using modeling and rehearsal
5. Compare various teaching procedures using modeling and rehearsal to each other.

D. Group Instruction

1. Identify key components of providing effective group instruction for individuals diagnosed with ASD.
2. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature on group instruction (e.g., Laugeson et al., 2008, Leaf et al., 2017, Sartini et al., 2013).
3. Evaluate the implementation of group instruction.
4. compare and contrast a progressive approach to a standard approach when implementing group instruction
5. Identify the roles (e.g., group leader or shadow support) and responsibilities that these roles have (e.g., reinforcement, prompting, teaching) when implementing group instruction.
6. Identify teaching methods that can be implemented in group instruction (e.g., choral responding, teaching interaction procedure, cool versus not cool).

E. Observational Learning

1. Identify components of observational learning teaching strategies (e.g. observing a peer, reinforcing for engaging in similar behavior, vicarious punishment).
2. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature on observational learning procedures (e.g., Leaf et al., 2012; Leaf et al., 2015; Singer-Dudek & Oblak, 2013)
3. Evaluate the application of observational learning teaching strategies (e.g. observing a peer, reinforcing for engaging in similar behavior, vicarious punishment).
4. Compare the observational learning procedure to other similar interventions (e.g., behavioral skills training).

<u>Domain 7: Curriculum across the life-span</u>

A. Learning how to learn

1. Identify key target skills of learning how to learn programming (e.g., attending, sitting, waiting)
2. Identify the molar and molecular goals (i.e., small and big picture goals) of learning how to learn programming (e.g., if you are teaching not grabbing the purpose is so that the client doesn't grab at cards during teaching, learns to be patient and wait for necessary information).
3. Identify clients' current strengths (e.g., what behaviors are being displayed) and weaknesses (e.g., what behaviors are not being displayed) in learning how to learn skills.
4. Identify ways to facilitate generalization of learning how to learn skills.

B. Academic

1. Identify the molar and molecular goals (i.e., small and big picture goals) of academic programming (e.g., you are teaching addition to improve quantitative skills).
2. Identify clients' current strengths (e.g., what behaviors are being displayed) and weaknesses (e.g., what behaviors are not being displayed) in academic related skills.

3. Identify ways to facilitate generalization of academic skills to new situations/contexts.

C. Language

1. Identify key components, scope, and sequencing of language programming (e.g., receptive language, expressive language, matching, and non-verbal imitation).
2. Identify the molar and molecular goals (i.e., small and big picture goals) of language programming (e.g., if you are teaching matching the goal is increasing language development).
3. Identify clients' current strengths (e.g., what behaviors are being displayed) and weaknesses (e.g., what behaviors are not being displayed) in language related skills.
4. Identify ways to facilitate generalization of language skills to new situations.

D. Adaptive behavior and independent living

1. Identify key components scope, and sequencing of self-help programming, including, but not limited to brushing teeth, making bed, and showering.
2. Identify the molar and molecular goals (i.e., small and big picture goals) of self-help programming (e.g., you are teaching brushing teeth so that client can increase independence/maintain health).
3. Identify clients' current strengths (e.g., what behaviors are being displayed) and weaknesses (e.g., what behaviors are not being displayed) in self-help skills.
4. Identify ways to facilitate generalization of self-help skills.

E. Social Competence

1. Identify key components, scope, and sequencing of social programming, including, but not limited to sharing, turn taking, or inviting a peer to join in.
2. Identify the molar and molecular goals (i.e., small and big picture goals) of social programming (e.g., if the program is teaching joint attention that the long-term goal is increasing social connection and engagement).
3. Identify clients' current strengths (e.g., what behaviors are being displayed) and weaknesses (e.g., what behaviors are not being displayed) in social skills.
4. Identify ways to facilitate generalization of social skills.

F. Play, Recreational and Leisure

1. Identify key components, scope, and sequencing of play, recreational and leisure programming.
2. Identify the molar and molecular goals (i.e., small and big picture goals) of play, recreational and leisure programming (i.e., if you are teaching rollerblading so a client is able to enjoy time outdoors with his active family and friends).
3. Identify clients' current strengths (e.g., what behaviors are being displayed) and weaknesses (e.g., what behaviors are not being displayed) in play, recreational and leisure related skills.
4. Identify ways to facilitate generalization of play, recreational and leisure skills.

G. Vocational skills

1. Identify key components, scope, and sequencing of vocational skills programming.
2. Identify the molar and molecular goals (i.e., small and big picture goals) of vocational skills programming.
3. Identify clients' current strengths (e.g., what behaviors are being displayed) and weaknesses (e.g., what behaviors are not being displayed) in vocational-related skills.
4. Identify ways to facilitate generalization of vocational skills programming.

Domain 8: Behavior intervention planning

A. Basic Concepts of Behavior Management

1. Identify various proactive and reactive approaches to problem behavior.
2. Identify and select treatments consistent with, least restrictive, yet most effective intervention.

3. Present an argument for the importance of including restrictive programming options in the continuum of approaches to dealing with problem behavior (i.e., reference to the ABA Policy on Right to Effective Treatment).

B. Data

1. Identify strengths and limitations of various data collection procedures (e.g., discontinuous, continuous, estimation) and the conditions under which each is most suitable.
2. Identify procedures, results, limitations and contributions of foundational and current pertinent literature on data collection procedures (e.g., Repp et al., 1976, Taubman et al., 2012).
3. Evaluate the application of data collection procedures (e.g., discontinuous, continuous, estimation).
4. Compare and contrast progressive and standard approaches to data collection.

C. Functional Behavior Assessment (FBA) and Functional Relations

1. Identify why behavior occurs (e.g., operant, respondent, health).
2. Identify components of functional behavioral assessment.
3. Identify various approaches to functional analysis (e.g., Iwata type, IISCA, Brief).
4. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature on functional behavioral assessment (e.g., Iwata 1982/1994, Hanley et al., 2011).
5. Evaluate the application of functional behavioral assessment (e.g., interviews, ABC data, observation, and analysis).
6. Compare and contrast progressive and standard approaches on the implementation of functional behavior assessment.
7. Identify advantages and limitations of FBAs and functional analyses.

D. Functional Replacement Skills

1. Select an appropriate skill or skills to teach based upon function and goals (e.g., FCT).
2. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature on functional replacement skills (Carr & Durand, 1985; Hagopian et al., 1998; Wacker et al., 1990).
3. Evaluate the application of functional replacement skills.

E. Tolerance Development

- Should be a citation by Hanley in this section

1. Identify components of tolerance development procedures (e.g. denial of desired items, doing things instructor's way).
2. Evaluate the application of tolerance development.
3. Compare and contrast progressive and conventional approaches to tolerance development.

F. Antecedent-based Procedures

1. Identify types of antecedent based procedures (e.g. restricting access, reducing demands, making accommodations).
2. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature on antecedent based procedures (e.g., Kern et al., 2002; Simpson 2001).
3. Evaluate the application of antecedent based procedures.

G. Differential Reinforcement (DR) Procedures

1. Identify the components of differential reinforcement procedures (e.g., DRL, DRI, DRA).
2. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature on differential reinforcement procedures (e.g., Davis & Bitterman, 1971, Iwata, 2007; Thompson & Iwata, 2005)

3. Evaluate the application of various differential reinforcement procedures (e.g., DRL, DRI, DRA).
4. Compare and contrast differential reinforcement procedures and will identify conditions under which various differential reinforcement procedures should be implemented.

H. Extinction

1. Identify the components, advantages, disadvantages, and potential negative side effects of extinction procedures.
2. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature research on extinction (e.g. Lerman & Iwata, 1995; Zarcone et al., 1993).
3. Evaluate the application of extinction.
4. Identify the conditions under which to implement extinction procedures.

I. Response Cost

1. Identify the components, advantages, disadvantages, and potential negative side effects of response cost.
2. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature on response cost (e.g., Gresham, 1979).
3. Evaluate the application of response cost.
4. Identify the conditions under which to implement response cost.

J. Time-In

1. Identify components of time-in procedures.
2. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent on the time-in procedure (e.g., Alberto et al., 2002, Leaf et al., 2012).
3. Evaluate the application of the time-in procedure.
4. Compare and contrast progressive and conventional approaches to time-in procedures.
5. Identify the conditions under which to implement time-in.

K. Time-Out

1. Identify components of time-out procedures (e.g., exclusionary or non-exclusionary).
2. Identify and describe procedures, results, limitations and contributions the foundational and current pertinent literature on the time-out procedure (e.g., Foxx & Shapiro, 1978, McKeegan et al., 1984).
3. Evaluate the application of the time-out procedure.
4. Identify the conditions under which to implement time-out.

<u>Domain 9: Treatment Design and Decision-Making</u>

A. Clinical Judgment

1. Identify the components of a progressive approach to ABA (e.g., flexibility, ongoing assessment, and direct observation).
2. Identify and describe procedures, results, limitations and contributions of foundational and current pertinent literature on progressive ABA (e.g., Leaf et al., 2016, Lovaas, 1987).
3. Compare and contrast progressive and standard approaches to ABA
4. Identify the components of clinical judgment.
5. Evaluate rationales provided by implementer for program changes.

B. Intervention Evaluation

1. Identify sources and methods to evaluate the quality and quantity of evidence for interventions.
2. Distinguish among evidence-based, empirically-supported, science, pseudo-science, and anti-science interventions.

3. Identify how to best proceed when non-evidence based procedures are being implemented considering both the ethical requirements of being a behavior analyst as well as promoting the most effective practices for the benefit of the client.

C. Quality Teaching

1. Identify the key components of a successful teaching session (e.g., maximizing teaching time, balancing alternation of work and free time, type of language)
2. Identify the key components of preparing for a successful teaching session (e.g., having all reinforcers, toys in working order, environmental set up conducive to learning).
3. Demonstrate the ability to analyze a teaching session and to make recommendations about how alterations should proceed to maximize progress.

D. Socially-valid Outcomes

1. Identify characteristics of socially valid outcomes (e.g., meaningful, long lasting, improving the quality of an individual's life).
2. Assess outcomes for social validity.

Domain 10: Clinical Skills, Training, Supervision, Collaboration, and Consultation

A. Interpersonal Skills, Cultural and Professional Competence

1. Identify components of working sensitively and professionally with others (e.g., calm voice tone, not interrupting, summarizing content of discussions, perspective taking).
2. Evaluate the application of working sensitively and professionally (e.g., calm voice tone, not interrupting, summarizing content of discussions, perspective taking).
3. Identify resistance and respond differentially.
4. Define cultural diversity, clinical responsivity, and clinical sensitivity.
5. Identify components of cultural background and how they may affect intervention (e.g., nationality, age, SES) and require adjustments in clinical work.
6. Analyze the occurrence or non-occurrence of cultural sensitivity.
7. Identify components of how to develop successful collaboration with ABA and non-ABA professionals.
8. Evaluate the application of professional collaboration.

B. Training and Supervision of Supervisees

1. Identify components of quality staff training (e.g., provide rationales, BST, modeling, feedback delivery, identifying and prioritizing training goals).
2. Compare and contrast psychoeducational and prescriptive models of staff training.
3. Identify contextual and implementer variables (e.g., seriousness of behavior, experience level, if parent is present, level of rapport) that may affect training and supervision.
4. Evaluate delivery of training (e.g., modeling, feedback delivery, identifying goals).

C. Parent Support

1. Identify major roles of family members within the course of behavior analytic intervention (e.g., parents, siblings, or other family members serving as therapists).
2. Discriminate among parent support, parent education, and parent training.
3. Identify the components of parent support (e.g., affirmation, receptivity, follow- up questions) in providing parent support.
4. Evaluate a therapist engaging in parent training (e.g., modeling, asking open ended questions, being clinically sensitive).
5. Identify goals that parents should work on outside of formal teaching, and that the parents will be part of the process of goal identification.

6. Identify the components of professional behavior (e.g., dress, smiles, arriving on time) that strengthens or weakens relationships with parents.
7. Identify and describe (e.g., contributions) the foundational and current pertinent literature on parent support (e.g., Harris et al., 1981; Harris et al., 1983, Ingersoll et al., 2013).

D. Case Management

1. Identify components of successful case management system (e.g., organization, effectiveness, efficiency, data-based decision making)
2. Evaluate appropriateness of individualized teaching goals developed based on assessment results.

E. Schools and agencies

1. Identify the problems and issues that arise about implementing a behavioral model and services when trying to successfully work with a school district/agency/classroom.
2. Identify key elements of successfully working in a school district/agency/classroom (e.g., creating a behavioral culture, creating a collaborative relationship, active listener, no job is beneath oneself).
3. Identify key components of a quality classroom (e.g., uses reinforcement at a high rate, uses a variety of reinforcers, meaningful curriculum, ongoing supervision and training).
4. Identify key attributes of a quality teacher (e.g., receptive, systematic, and adaptable).
5. Identify key components of a quality school district and agency (e.g., adherence to evidence-based practice for education, emphasis on training, ongoing supervision).
6. Identify the challenges that school districts, agencies, schools, classrooms, and teachers face as it relates to ASD intervention (e.g. policies, laws, financial, working with unions, assigned staff, no extensive training).

F. Ethics

1. List the components of the APF Code of Ethics.
2. Exhibit good signal detection as it relates to ethical contexts.
3. Identify common ethical errors and appropriate remedies.