

CalABA 2026 Symposium

Citation Summaries

How Each Reference Supports the Presentation

"Beyond Observable Behavior: Measuring and Modifying the Function of Thought in School-Based Assessment"

PAPER 1: The Assessment Phase

EO-Behavior-AO Framework

Michael, J. (1993). Establishing operations. *The Behavior Analyst*, 16(2), 191-206.

This seminal paper introduces the concept of establishing operations (EOs) as distinct from discriminative stimuli. Michael argues that behavior analysis had conflated two separate functions: the discriminative function (signaling availability of reinforcement) and the motivating function (altering the value of a consequence). This distinction is critical for the symposium's claim that traditional ABC analysis captures only observable triggers while missing the motivational variables that truly drive behavior. When a student engages in self-talk or cognitive fusion before problem behavior, the EO is the verbal/cognitive event—not the environmental antecedent observers record.

Laraway, S., Snyderski, S., Michael, J., & Poling, A. (2003). Motivating operations and terms to describe them: Some further refinements. *Journal of Applied Behavior Analysis*, 36(3), 407-414.

This paper refined Michael's original terminology, introducing "motivating operation" (MO) as an umbrella term encompassing both establishing and abolishing operations. The authors clarify that MOs have two effects: value-altering (changing how reinforcing/punishing a stimulus is) and behavior-altering (changing the frequency of behavior that has produced that stimulus). For the symposium, this supports the claim that ACT interventions work by targeting the value-altering function—cognitive defusion reduces how "reinforcing" escape from uncomfortable thoughts becomes.

PAPER 2: ACT-Informed BIPs

ACT Core Framework

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2012). *Acceptance and commitment therapy: The process and practice of mindful change* (2nd ed.). Guilford Press.

This is the definitive clinical manual for ACT, providing the theoretical and procedural foundation for the symposium's intervention approach. The book establishes ACT's six core processes (acceptance, defusion, present moment awareness, self-as-context, values, committed action) and explains how psychological inflexibility—the rigid dominance of verbal/cognitive control over direct environmental contingencies—underlies diverse behavioral problems. For school BCBAs, this text justifies targeting "what happens inside the student" when traditional function-based interventions fail.

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy*, 44(1), 1-25.

This review summarizes the empirical basis for ACT across clinical populations. Crucially for the symposium's evidence claims, the paper documents ACT's efficacy across anxiety, depression, chronic pain, and workplace performance—demonstrating that psychological flexibility is a transdiagnostic process variable. The symposium leverages this evidence to argue that ACT-informed BIPs can address behaviors maintained by avoidance of internal experiences.

Relational Frame Theory

Hayes, S. C., Barnes-Holmes, D., & Roche, B. (Eds.). (2001). *Relational frame theory: A post-Skinnerian account of human language and cognition*. Kluwer Academic/Plenum Publishers.

RFT provides the behavior-analytic foundation for ACT. This edited volume explains how humans derive relations among stimuli through a history of multiple-exemplar training. The key insight for school behavior support: once a student derives that "I'm stupid" is equivalent to failure experiences, the thought itself acquires aversive functions—and escape from the thought (not just escape from the academic task) can maintain avoidance behavior.

Barnes-Holmes, Y., Barnes-Holmes, D., & McHugh, L. (2004). Teaching derived relational responding to young children. *Journal of Early and Intensive*

This foundational study demonstrates that derived relational responding can be explicitly taught to young children through multiple-exemplar training. The research establishes that the building blocks of complex verbal behavior—the same processes underlying cognitive fusion and rule-governed behavior—emerge through learning history rather than biological maturation alone. For the symposium's assessment methodology, this supports the premise that students' verbal statements (the content being challenged in the validating vs. challenging conditions) acquired their stimulus functions through derived relational responding, and therefore latency differences reveal differential fusion with specific verbal content.

Foody, M., Barnes-Holmes, Y., Barnes-Holmes, D., Törneke, N., Luciano, C., Stewart, I., & McEnteggart, C. (2014). RFT for clinical use: The example of metaphor. *Journal of Contextual Behavioral Science*, 3(4), 305-313. <https://doi.org/10.1016/j.jcbs.2014.08.001>

This paper bridges RFT theory and ACT clinical practice, demonstrating how metaphor functions through derived relational responding to promote defusion. The authors explain that metaphors work by establishing new relational frames that alter the functions of problematic verbal content without directly challenging the content itself. For the symposium, this citation supports the intervention phase: once the latency-based assessment identifies which verbal statements show least psychological flexibility (shortest latency to precursors when challenged), metaphor-based defusion interventions specifically target those high-fusion statements—the transformation of stimulus functions reduces the aversive properties of the verbal content.

ACT Matrix

Polk, K. L., & Schoendorff, B. (Eds.). (2014). *The ACT matrix: A new approach to building psychological flexibility across settings and populations*. New Harbinger Publications.

The ACT Matrix is a visual tool that helps individuals (including children) distinguish between "toward" moves (values-consistent behavior) and "away" moves (experiential avoidance). The symposium uses the Matrix as both an assessment tool (mapping students' current patterns) and an intervention framework (helping students notice the workability of their choices).

ACT with Youth

Greco, L. A., & Hayes, S. C. (Eds.). (2008). *Acceptance and mindfulness treatments for children and adolescents: A practitioner's guide*. New Harbinger Publications.

This edited volume addresses the unique considerations for ACT implementation with children. The authors discuss developmental adaptations including simplified language, concrete metaphors, and activity-based exercises. For the symposium's population (school-age students), this text provides empirical and clinical guidance supporting the feasibility of ACT-informed interventions in educational settings.

CPFQ Measurement

Dixon, M. R., & Paliliunas, D. (2018). Children's psychological flexibility questionnaire. In *Accept. Identify. Move: A behavior analytic curriculum for social-emotional development in children* (pp. 263-268). Carbondale, IL: Shawnee Scientific Press.

The Children's Psychological Flexibility Questionnaire (CPFQ) was developed specifically within a behavior-analytic framework to assess psychological flexibility in children. Unlike clinical psychology measures, the CPFQ is grounded in Relational Frame Theory and designed to be administered by behavior analysts in applied settings. The symposium uses the CPFQ as the primary outcome measure because it directly assesses the processes targeted by ACT-informed interventions.

Bachmann, K., Hinman, J. M., Yi, Z., & Dixon, M. R. (2021). Evaluating the convergent and divergent validity of the Children's Psychological Flexibility Questionnaire (CPFQ) among children with autism. *Advances in Neurodevelopmental Disorders*, 5, 298–303. <https://doi.org/10.1007/s41252-021-00206-w>

This validation study established the psychometric properties of the CPFQ, demonstrating convergent validity with other psychological flexibility measures and divergent validity from unrelated constructs. The study specifically validated the measure for use with children with autism, supporting its application in school-based behavior support contexts.

K-12 ACT Outcome Research

Meta-Analyses

Fang, S., & Ding, D. (2020). A meta-analysis of the efficacy of acceptance and commitment therapy for children. *Journal of Contextual Behavioral Science*, 15, 225-234. <https://doi.org/10.1016/j.jcbs.2020.01.007>

This meta-analysis synthesized RCT evidence for ACT with children and adolescents. Results demonstrated that ACT was superior to waitlist controls and broadly equivalent to active treatments in reducing psychological symptoms and improving quality of life. This provides Level 1 evidence supporting ACT-informed interventions with school-age populations.

Halliburton, A. E., & Cooper, L. D. (2015). Applications and adaptations of Acceptance and Commitment Therapy (ACT) for adolescents. *Journal of Contextual Behavioral Science*, 4(1), 1-11. <https://doi.org/10.1016/j.jcbs.2015.01.002>

This comprehensive review examined how ACT has been adapted for adolescent populations. The authors identify key developmental considerations and modifications necessary for effective implementation with youth, providing guidance for school-based practitioners.

School-Based RCTs

Van der Gucht, K., Griffith, J. W., Helleman, R., Bockstaele, M., Pascal-Claes, F., & Raes, F. (2017). Acceptance and Commitment Therapy (ACT) for adolescents: Outcomes of a large-sample, school-based, cluster-randomized controlled trial. *Mindfulness*, 8, 408-416. <https://doi.org/10.1007/s12671-016-0612-y>

This large-scale RCT (N = 553 adolescents) demonstrated significant reductions in depression and anxiety following school-based ACT intervention. Critically, effects were maintained at 6-month follow-up, and no moderation effects were found for gender, age, or school track—suggesting ACT can be effectively scaled across diverse school populations.

Hancock, K. M., Swain, J., Hainsworth, C. J., Dixon, A. L., Koo, S., & Munro, K. (2018). Acceptance and Commitment Therapy versus Cognitive Behavior Therapy for children with anxiety: Outcomes of a randomized controlled trial. *Journal of*

Clinical Child & Adolescent Psychology, 47(2), 296-311.

<https://doi.org/10.1080/15374416.2015.1110822>

This head-to-head comparison (N = 157 children, M age = 11) found ACT showed comparable efficacy to traditional CBT for childhood anxiety, with significant improvements in anxiety symptoms, quality of life, and acceptance/defusion skills maintained at 3-month follow-up.

PAPER 3: Implementation & Fidelity

Behavioral Skills Training (BST)

Parsons, M. B., Rollyson, J. H., & Reid, D. H. (2012). Evidence-based staff training: A guide for practitioners. *Behavior Analysis in Practice*, 5(2), 2-11.

This paper provides the gold standard for training implementers in behavior-analytic procedures. BST consists of four components: instruction, modeling, rehearsal, and feedback. The symposium's implementation protocol uses BST to train teachers and paraprofessionals in ACT-informed strategies. This citation supports the claim that effective BIP implementation requires more than just handing staff a written plan.

Sarokoff, R. A., & Sturmey, P. (2004). The effects of behavioral skills training on staff implementation of discrete-trial teaching. *Journal of Applied Behavior Analysis*, 37(4), 535-538.

This empirical study demonstrated that BST significantly improved staff implementation of discrete-trial procedures, with improvements maintaining at follow-up. The symposium extrapolates this evidence to ACT-informed BIP implementation.

Implementation Fidelity Research

Noell, G. H., Witt, J. C., et al. (2005). Treatment implementation following behavioral consultation in schools: A comparison of three follow-up strategies. *School Psychology Review*, 34(1), 87-106.

This study found that teachers' implementation of behavior plans dropped to 40-60% accuracy within days after initial training unless follow-up support was provided. Performance feedback—brief meetings providing implementation data—maintained higher fidelity than either no follow-up or commitment emphasis alone. The symposium cites this research to justify the implementation support systems described in Paper 3.

DiGennaro Reed, F. D., Coddington, R., Catania, C. N., & Maguire, H. (2010). Effects of video modeling on treatment integrity of behavioral interventions. *Journal of Applied Behavior Analysis*, 43(2), 291-295.

This study demonstrated that video modeling combined with performance feedback improved treatment integrity for behavioral interventions. The symposium's implementation protocol incorporates video modeling as part of the BST sequence.

PAPER 4: Outcomes & Social Validity

Social Validity Framework

Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis*, 11(2), 203-214.

Wolf's classic paper argues that behavior analysis must attend to three dimensions of social validity: (1) the social significance of goals, (2) the social appropriateness of procedures, and (3) the social importance of effects. The symposium's inclusion of student voice data, teacher acceptability ratings, and family feedback directly implements Wolf's framework.

Function-Based Intervention Effectiveness

Newcomer, L. L., & Lewis, T. J. (2004). Functional behavioral assessment: An investigation of assessment reliability and effectiveness of function-based interventions. *Journal of Emotional and Behavioral Disorders*, 12(3), 168-181.

This study found that function-based interventions were significantly more effective than non-function-based interventions (effect size $d = 0.78$). The symposium uses this evidence to argue that identifying the correct function—including when internal verbal events are the functional variable—is essential for intervention success.

Functional Analysis Methodology

Classic FA

Iwata, B. A., Dorsey, M. F., Slifer, K. J., Bauman, K. E., & Richman, G. S. (1982/1994). Toward a functional analysis of self-injury. *Journal of Applied Behavior Analysis*, 27(2), 197-209. <https://doi.org/10.1901/jaba.1994.27-197>

This landmark paper established the standard FA methodology comparing attention, escape, tangible, and alone conditions. While the symposium argues that traditional FA may miss internally-mediated functions, this citation acknowledges the foundational contribution and explains that latency-based FA is an extension—not a replacement—of established methods.

Practical Functional Assessment (IISCA)

Hanley, G. P., Jin, C. S., Vanselow, N. R., & Hanratty, L. A. (2014). Producing meaningful improvements in problem behavior of children with autism via synthesized analyses and treatments. *Journal of Applied Behavior Analysis*, 47(1), 16-36. <https://doi.org/10.1002/jaba.106>

This paper introduced the Interview-Informed Synthesized Contingency Analysis (IISCA), which uses a single test and control condition based on caregiver interview. The symposium references this as "Pathway A" for behaviors maintained by external contingencies. Hanley's practical functional assessment is faster and more clinically relevant than traditional extended FAs.

Jessel, J., Hanley, G. P., & Ghaemmaghami, M. (2016). Interview-informed synthesized contingency analyses: Thirty replications and reanalysis. *Journal of Applied Behavior Analysis*, 49(2), 217-235. <https://doi.org/10.1002/jaba.282>

This study replicated the IISCA across 30 cases, demonstrating its effectiveness for identifying functions of problem behavior across a variety of topographies, participants, and settings. The methodology proved robust across diverse clinical presentations.

Jessel, J., Ingvarsson, E. T., Metras, R., Kirk, H., & Whipple, R. (2018). Achieving socially significant reductions in problem behavior following the interview-informed synthesized contingency analysis: A summary of 25 outpatient

applications. *Journal of Applied Behavior Analysis*, 51(2), 282-297.
<https://doi.org/10.1002/jaba.436>

This summary of 25 outpatient cases demonstrated that IISCA-informed treatments achieved socially significant behavior reductions across diverse settings and populations, supporting the practical utility of interview-informed assessment approaches.

Hanley, G. P. (2012). Functional assessment of problem behavior: Dispelling myths, overcoming implementation obstacles, and developing new lore. *Behavior Analysis in Practice*, 5(1), 54-72. <https://doi.org/10.1007/BF03391823>

This review addresses common misconceptions about FA implementation in applied settings. Hanley argues for flexible, clinically-informed approaches rather than rigid protocols. The symposium extends this flexibility argument to include assessment of internal verbal events when behavioral indicators suggest internal mediation.

Latency-Based Functional Analysis

Thomason-Sassi, J. L., Iwata, B. A., Neidert, P. L., & Roscoe, E. M. (2011). Response latency as an index of response strength during functional analyses of problem behavior. *Journal of Applied Behavior Analysis*, 44(1), 51-67.
<https://doi.org/10.1901/jaba.2011.44-51>

This study demonstrated that latency measures can identify behavioral function more efficiently than traditional rate-based measures. Response latency serves as an index of response strength, allowing practitioners to identify function with fewer trials and less exposure to problem behavior—critical for school-based assessment.

School-Based Functional Analysis

Lloyd, B. P., Wehby, J. H., Weaver, E. S., Goldman, S. E., Harvey, M. N., & Sherlock, D. R. (2015). Implementation and validation of trial-based functional analyses in public elementary school settings. *Journal of Applied Behavior Analysis*, 48(4), 1-21. <https://doi.org/10.1002/jaba.241>

This study validated teacher-conducted, trial-based FA in public elementary schools. Results demonstrated that teachers could implement brief FA trials within typical classroom routines, making functional assessment feasible in educational settings without removing students or requiring specialized clinical environments.

Rule-Governed Behavior Assessment

Kissi, A., Hughes, S., Mertens, G., Barnes-Holmes, D., De Houwer, J., & Crombez, G. (2017). A systematic review of pliance, tracking, and augmenting. *Behavior Modification*, 41(5), 683-707. <https://doi.org/10.1177/0145445517693811>

This systematic review examines the empirical support for Zettle and Hayes's (1982) classification of rule-governed behavior into pliance, tracking, and augmenting. Understanding these verbal mediation processes is essential for assessing when behavior is controlled by verbal rules rather than direct environmental contingencies—the core distinction underlying the symposium's "Pathway B" assessment approach.

Summary Table

| Claim in Presentation | Supporting Citation | Key Evidence |
|--|---|--|
| EOs are distinct from discriminative stimuli | Michael (1993) | Conceptual analysis of motivational vs. discriminative functions |
| ACT has broad empirical support | Hayes et al. (2006) | Meta-analysis across clinical populations |
| ACT effective with K-12 students | Fang & Ding (2020); Van der Gucht et al. (2017) | Meta-analysis + N=553 school RCT |
| ACT comparable to CBT for child anxiety | Hancock et al. (2018) | N=157 RCT, M age = 11 |
| Psychological inflexibility is measurable in youth | Dixon & Paliliunas (2018); Bachmann et al. (2021) | CPFQ validated for children with autism |
| RFT explains rule-governed behavior | Hayes et al. (2001) | Derived relational responding framework |
| Derived relational responding is teachable in children | Barnes-Holmes et al. (2004) | Multiple-exemplar training with young children |
| Metaphor promotes defusion via RFT | Foody et al. (2014) | Transformation of stimulus functions through relational framing |
| ACT Matrix is practical for schools | Polk & Schoendorff (2014) | Clinical manual with applied examples |
| BIP implementation drops without support | Noell et al. (2005) | 40-60% fidelity within days |
| BST improves implementation | Parsons et al. (2012) | Evidence-based staff training |
| Function-based BIPs outperform default | Newcomer & Lewis (2004) | Effect size d = 0.78 |
| Social validity matters | Wolf (1978) | Three dimensions framework |
| IISCA is practical FA | Hanley et al. (2014); Jessel et al. (2016, 2018) | 30+ replications; N=25 outpatient cases |

| Claim in Presentation | Supporting Citation | Key Evidence |
|--------------------------------------|------------------------------|--|
| Latency-based FA is more efficient | Thomason-Sassi et al. (2011) | Latency as response strength index |
| Teachers can conduct FA in schools | Lloyd et al. (2015) | Trial-based FA validated in elementary schools |
| Rule-governed behavior is assessable | Kissi et al. (2017) | Pliance, tracking, augmenting review |

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"Beyond Observable Behavior: Measuring and Modifying the Function of Thought in School-Based Assessment"
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