Towards a Practical Behavior Analytic Multitiered Consultation Model for Early Childhood Educators

Zachary C. LaBrot
University of Southern Mississippi, zachary.labrot@usm.edu

Emily R. DeFouw
University of Southern Mississippi, Emily.DeFouw@usm.edu

Marshall Lundy
marshall.lundy@usm.edu

Kayla McVay
University of Southern Mississippi, kayla.mcvay@usm.edu

Andrew Rozsa
andrew.rozsa@usm.edu

See next page for additional authors

Follow this and additional works at: https://digitalcommons.pace.edu/perspectives

Part of the Applied Behavior Analysis Commons, and the School Psychology Commons

Towards a Practical Behavior Analytic Multitiered Consultation Model for Early Childhood Educators

Cover Page Footnote

Zachary C. LaBrot, Ph.D. (corresponding author) zachary.labrot@usm.edu

Authors

Zachary C. LaBrot, Emily R. DeFouw, Marshall Lundy, Kayla McVay, Andrew Rozsa, and Brad A. Dufrene

Towards a Practical Behavior Analytic Multitiered Consultation Model for Early Childhood Educators

Zachary C. LaBrot, Emily R. DeFouw, Marshall Lundy, Kayla McVay, Andrew Rozsa, and Brad A. Dufrene

Impact statement: *This paper delineates an effective and potentially more efficient model for implementing behavioral consultation. This paper is meant to serve as a call-to-action for consultation researchers to further evaluate the effectiveness, efficiency, and feasibility of this model with early childhood education professionals.*

Abstract

Early childhood educators are in a critical position to support young children's social-emotional, behavioral, and learning development, which can be accomplished through consistent use of evidence-based practices delivered in day-to-day interactions. However, early childhood educators may require support for implementing evidence-based practices. The purpose of this paper is to introduce a novel form of behavioral consultation for early childhood educators. Specifically, a behavior analytic multitiered consultation model in which implementation supports become increasingly more intensive is described. Rationale, implementation, evidence base, and implications for practice and research are described. Finally, this paper concludes with an empirical case study to illustrate this model's implementation. This paper is also meant to serve as a call-to-action for researchers and practitioners to replicate this consultation model.

Introduction

Early childhood is a period of rapid development, which can be enhanced by positive family interaction, community engagement, and participation in early childhood education programs (Bick & Nelson, 2017; McWayne et al., 2004). However, pervasive risk factors that many families experience, such as poverty, family conflict, violence, and low parental education, can place young children at risk for developing internalizing and externalizing difficulties (Carter et al., 2010; Egger & Angold, 2005; Wichstrom et al., 2012). Because approximately 86% of young children attend some form of an early childhood education program (Hussar et al., 2020), early childhood educators play a critical role in promoting social-emotional and behavioral development that may serve to buffer young children from the various risk factors they experience. Additionally, social-emotional and behavioral skills fostered in the course of early childhood education often mediate successful transition into elementary education (Carter et al., 2010).

Given the vital role early childhood educators play in promoting young children's social-emotional and behavioral development, supports to aid these educators are often needed. That is, early childhood educators may encounter behavioral difficulties in the classroom they are not adequately equipped to address (Reinke et al., 2011; Snell et al., 2012). When this occurs, early childhood educators, or the program itself, may seek assistance from a consultant with expertise in behavior, development, and educational systems (Collier-Meek et al., 2017b). Consultants often recommend the use of educator-implemented, evidence-based classroom interventions to address presenting concerns. However, early childhood educators may encounter several barriers to intervention implementation, such as having several responsibilities throughout the classroom, inadequate intervention training, high levels of stress/burnout, and an inconsistent reinforcement history with intervention implementation (Allen & Warzak, 2000; Collier-Meek et al., 2017b;

Sanetti & Kratochwill, 2009a). Therefore, consultants may also provide implementation supports throughout the consultation process to aid early childhood educators in intervention delivery to promote high levels of integrity (i.e., extent to which interventions are delivered as intended; Gresham, 1989; Sanetti & Kratochwill, 2009a).

Various implementation supports, such as prompts (LaBrot et al., 2022; Markelz et al., 2021), performance feedback (Barton et al., 2020; Gomez et al., 2021), modeling (LaBrot et al., 2020), and in situ training (Dufrene et al., 2012; LaBrot et al., 2016, 2021b), to name a few, are effective for promoting early childhood educators' intervention implementation. These supports vary in intensity and resources required for implementation, with limited empirical guidance that delineates their systematic delivery (Collier-Meek et al., 2017b). Furthermore, early childhood education programs historically have limited access to mental and behavioral health consultation and supports (Ali et al., 2018; Grace et al., 2006; National Center for Education Statistics [NCES], 2020). As such, a conceptual and empirically based model to guide school-based consultants in the systematic delivery of implementation supports for early childhood educators is needed.

Such a model should be effective and efficient, in which intensive consultation resources are conserved for those educators who require a greater amount of support. Further, such a model should be feasible in implementation to facilitate consultants' access to a greater number of programs and classrooms. Therefore, the purpose of this paper is to describe a multitiered consultation model for supporting early childhood educators' intervention implementation. This paper will first define this model and provide an empirical rationale for its use. Second, this paper will describe the application and adaptations of this model for early childhood education programs and educators. Third, current research, implications for applied practice, and future directions are discussed. Finally, this paper concludes with an empirical case study that demonstrates this model's application and effectiveness.

For the purposes of this paper, consultation refers to the overarching process in which consultants work with educators, and implementation supports are the specific strategies used within consultation (e.g., prompts, performance feedback) to target educators' intervention implementation.

Multitiered Consultation Model

Previous research has emphasized the importance of ensuring high levels of treatment integrity when addressing student concerns (Sanetti & Kratochwill, 2009a). Often, educators are the implementers delivering these interventions and supports. However, educational background and training is often inconsistent across educators (Freeman et al., 2014). As such, delivering implementation supports through consultation on a systematic continuum may be an effective and efficient approach to address early childhood educators' unique training needs.

Similar to the Pyramid and Multi-tiered Systems of Support (MTSS) models that support children's social-emotional, behavioral, and academic needs (Fox et al., 2010; Marsh & Mathur, 2020), a multitiered consultation framework can be also applied to support educators' intervention implementation (Sanetti & Collier-Meek, 2015). Multitiered consultation is a three-tiered framework that provides universal, targeted, and individualized support strategies to increase educators' implementation of various interventions (Fallon et al., 2018; LaBrot et al., 2020; McKenney et al., 2019; Myers et al., 2011). This model of consultation is grounded in behavioral consultation, in which consultants (e.g., school psychologists, behavior analysts, mental health professionals) guide consultees (e.g., educators, center staff) through a collaborative and problem-solving process to address the needs of clients (i.e., children). Specifically, this model follows behavioral consultation's four-stage problem-solving process (i.e., problem identification, problem analysis, plan implementation, and plan evaluation) (Dufrene et al., 2016).

Within a multitiered consultation model, Tier 1 implementation supports can be universally delivered to all educators. For example,

a common Tier 1 implementation support is individual or universal professional development trainings (e.g., Collier-Meek et al., 2017a; Fallon et al., 2018; LaBrot et al., 2021a). These trainings often involve the consultant introducing the intervention, modeling the intervention, providing an opportunity to practice, and delivering feedback (Sterling-Turner et al., 2002). Although professional development trainings are widely utilized, they may not be enough to adequately improve early childhood educators' intervention implementation (e.g., Dufrene et al., 2012). Consequently, educators may require additional and more targeted Tier 2 implementation supports that specifically address implementation barriers (e.g., knowledge, beliefs, skills, training, stress/burnout) that cause low or declining levels of treatment integrity (See Sanetti & Kratochwill, 2009a for an overview of treatment integrity barriers). Tier 2 implementation supports generally involve more direct one-to-one work between a consultant and educator, but can be less direct in implementation (e.g., automatically delivered emailed prompts; Fallon et al., 2018). However, educators' implementation that does not reach desired levels may require more intensive and individualized Tier 3 supports. Similar to the Pyramid and MTSS models, Tier 3 implementation supports are individualized, more frequent, and require more time and personnel support (Sanetti & Collier-Meek, 2015). For example, performance feedback can be tailored to an educator's intervention implementation and requires consistent progress monitoring and delivery.

Although the multitiered consultation model has garnered promising evidence for improving implementers' treatment integrity (e.g., LaBrot et al., 2020; Myers et al., 2011; Sanetti & Collier-Meek, 2015; Simonsen et al., 2014; Thompson et al., 2012), implementation supports utilized within Tiers 2 and 3 vary. For example, Myers et al. (2011) evaluated a multitiered consultation model for increasing middle school teachers' behavior specific and general praise rates. Tier 2 involved in-person weekly performance feedback meetings and Tier 3 involved in-person daily performance feedback (i.e.,

consequent-based supports for both tiers). Similarly, LaBrot et al. (2020) utilized this consultation model to increase preschool and elementary school teachers' rates of behavior specific praise. Tier 2 involved weekly emailed performance feedback with video models (i.e., consequent-based support) and Tier 3 involved a teacher wearing a device that provided tactile prompts (i.e., antecedent-based support). Results of these studies indicated that teachers' rates of behavior specific praise increased, although both may have used unnecessary time and resources (e.g., continuous monitoring and data collection to provide performance feedback) for lower-level tiers, when less resource-intensive strategies (e.g., brief prompts) may have sufficed. Therefore, a conceptual model that guides which implementation supports are delivered within each tier is needed.

Behavior Analytic Conceptualization of a Multitiered Consultation Model

One solution for a multitiered consultation model that may effectively and efficiently allocate consultative resources and help differentiate Tier 2 from Tier 3 strategies is a behavior analytic application of implementation supports (Collier-Meek et al., 2017b). Through the lens of Applied Behavior Analysis (Baer et al., 1968), socially important behavior (i.e., intervention implementation) is evoked by antecedents (e.g., intervention prompts) and maintained through consequences (e.g., implementation feedback) (Collier-Meek et al., 2017b). Given this logic, the range of various implementation supports may be conceptualized as either antecedent-based, consequent-based, or combined.

Antecedent-based implementation supports involve proactively providing instructions or reminders to evoke intervention implementation (Collier-Meek et al., 2017a). Conversely, consequent-based implementation supports are delivered in response to intervention implementation and involve providing positive and corrective feedback to function as positive reinforcement (i.e., teachers engage in intervention implementation to increase desired

child behaviors) or negative reinforcement (i.e., teachers engage in intervention implementation to remove supports) for treatment integrity (Collier-Meek et al., 2017a).

Although both antecedent- (e.g., prompts) and consequent-based (e.g., performance feedback) implementation supports have evidence demonstrating their effectiveness for improving treatment integrity (Collier-Meek et al., 2017a; Duchaine et al., 2011; Fallon et al., 2018; O'Handley et al., 2018), educators' response to these supports can be variable (e.g., LaBrot et al., 2020, 2021a). This may be due to the fact that more traditional consultation models, such as behavioral and direct behavioral consultation, tend to continuously deliver a single implementation support regardless of approach (antecedent or consequent) and ideographic educator response (e.g., Dufrene et al., 2012; LaBrot et al., 2016, 2021b).

Thus, a data-based model that conceptualizes intervention implementation from a behavior analytic standpoint and includes a continuum of implementation supports could be an effective and efficient option for maintaining treatment integrity. Within a behavior analytic multitiered consultation framework, lower-level tiers consist of antecedent-based supports (e.g., professional development trainings at Tier 1, prompting at Tier 2) to evoke intervention implementation (Collier-Meek et al., 2017b). To the degree that educators fail to consistently increase treatment integrity in response to antecedent-based supports, consequent-based supports (e.g., performance feedback at Tier 3) are added to both evoke and maintain educators' treatment integrity.

Fallon et al. (2018) utilized a behavior analytic multitiered consultation model to increase three elementary teachers' treatment integrity of group contingency implementation. In this study, didactic training (i.e., Tier 1) resulted in variable and low increases in treatment integrity. Following didactic training, Fallon and colleagues delivered emailed prompts (i.e., Tier 2) that described intervention steps which resulted in increased, albeit variable, treatment integrity. Finally, emailed performance

feedback (i.e., Tier 3) was implemented, which resulted in treatment integrity levels above those in the emailed prompt phase for all three elementary teachers. Additionally, participants rated this model of implementation supports as feasible, understandable, and effective (Fallon et al., 2018). Results of this study provide evidence for the effectiveness and feasibility of behavior analytic multitiered consultation. However, conceptual guidance for its implementation with early childhood educators is necessary to guide use in early childhood settings.

Behavior Analytic Multitiered Consultation for Early Childhood Educators

In early childhood education programs, the behavior analytic multitiered consultation model follows the same behavior analytic conceptualization, in which antecedent-based supports are delivered in Tiers 1 and 2 and consequent-based supports are delivered at Tier 3. Similarly, this model also follows the same four-stage problem-solving process as behavioral consultation (i.e., problem identification, problem analysis, plan implementation, plan evaluation; Dufrene et al., 2016). However, data collected, variables assessed, and targeted interventions vary in early childhood education settings, as these settings are markedly different from elementary and middle schools.

It is important to note that there are currently no established standards for foundational knowledge and resources necessary to implement this model of consultation. However, this model is a derivation of behavioral consultation as implemented in educational settings (See Erchul & Martens, 2012). Therefore, at minimum, consultants should have knowledge of the behavioral consultation process (delineated below), which includes interviewing relevant individuals and systematic and ongoing data collection. Furthermore, this model would be best implemented in conjunction with both educators and center administrators to ensure a consolidated plan is being implemented. See Figure 1 for a visual representation of the behavior analytic conceptualization of a multitiered consultation model.

Figure 1

Visual Representative of the Behavior Analytic Multitiered Consultation Model
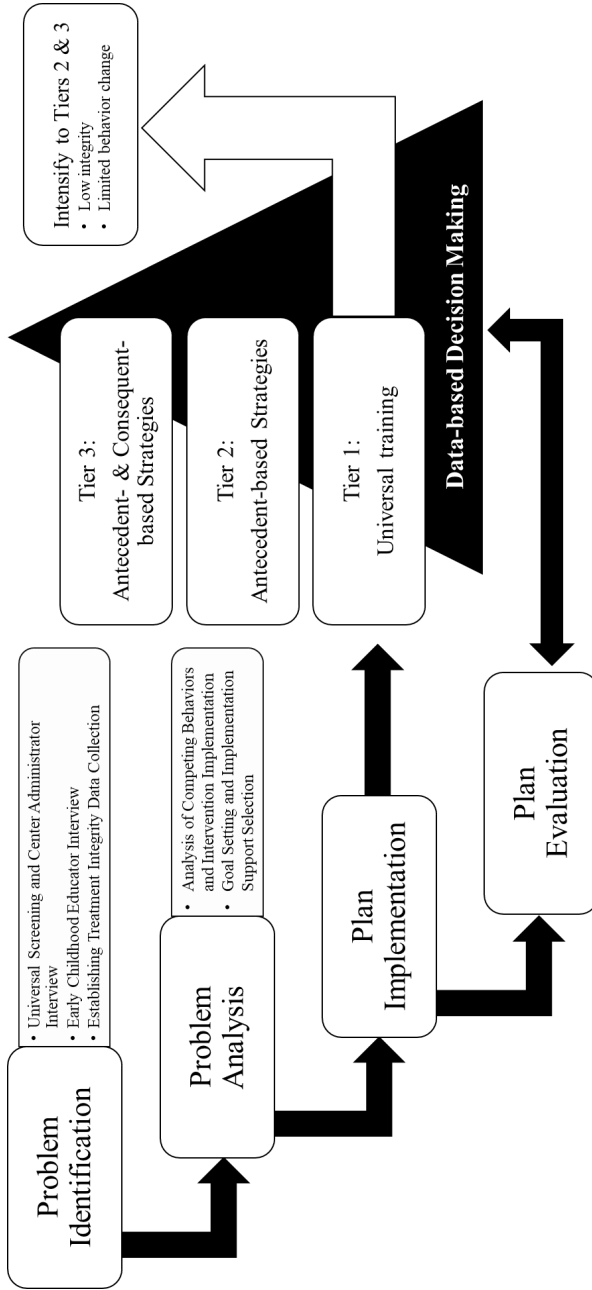
Problem Identification

The first step of the behavior analytic multitiered consultation model involves universal screening and interviews with administrators and early childhood educators. The goal of these interviews is to identify potential underlying problems (e.g., lack of training in effective classroom management strategies) associated with educators' poor intervention implementation (Dufrene et al., 2016). Through the Problem Identification process, multiple variables are assessed related to the referral concern. Objectives of Problem Identification include goal specification, performance assessment, and procedural specification. Although the following sections outline the type of data to be collected during the problem identification process, readers should also reference the Planning Realistic Implementation and Maintenance by Educators (PRIME) Problem-solving Consultation Guide to inform other forms of data that may be collected during the Problem Identification process (Sanetti et al., 2014), which is a freely available online resource for consultants and researchers.

Universal Screening and Center Administrator Interview

Upon receiving a referral for services, data on classroom and educator needs should be gathered via universal screening. That is, early childhood education centers that already collect data on classroom management practices can aid consultants in determining training needs. For example, the Preschool-Wide Evaluation Tool (Pre-SET) is a standardized assessment of program-wide positive behavior supports with strong psychometric properties (Steed & Webb, 2013) that can be utilized to identify center-wide supports that are inconsistently implemented across an early childhood education center. Inconsistently implemented center-wide supports (e.g., enriched environment with engaging activities, charts that demonstrate classroom expectations; Hemmeter et al., 2007) can be targeted through large or small group professional development trainings (i.e., Tier 1 consultation/training supports).

Following review of universal screening data, the formal consultation process should begin with an interview with the early childhood education center director. The purpose of interviewing an administrator is to determine the extent to which program staff have received previous training in classroom management. It is possible that center staff have not received adequate instruction or training in evidence-based classroom management practices (e.g., LaBrot et al., 2022). In this case, a universal, Tier 1 training on classroom management practices may be more efficient in addressing referral concerns. Paired with universal screening data, center administrator knowledge regarding educators' skill sets, strengths, and weaknesses could inform effective Tier 1, professional development trainings on effective classroom management practices. Additionally, universal screening data from previous years, in conjunction with center administrator input, can be used to inform beginning-of-the-year professional development trainings.

Early Childhood Educator Interview

In addition to universal screening and center administrator interviews, classroom teachers should also be interviewed to gain more specific feedback and insights regarding referral concerns (Dufrene et al., 2016). During the teacher interview, it is important to assess teachers' history with intervention implementation in the classroom. Specifically, consultants should inquire about interventions that have previously been implemented unsuccessfully (i.e., did not affect child outcomes) and how these interventions were implemented. It could be that previously utilized classroom management interventions were not implemented with integrity, and could be more effectively implemented with consultant-provided instructions and modeling (i.e., reiteration of Tier 1 supports). Furthermore, it is important to determine the extent to which educators have been consistent in previously implementing other classroom interventions, as a history of inconsistent intervention implementation could be indicative of teachers who struggle to

follow consultant recommendations (Allen & Warzak, 2000; Collier-Meek et al., 2017b). If this is the case, it is important to assess and account for barriers to previous intervention implementation when developing a new plan. For example, inquiring about previous intervention complexity, educators' perceived competence in intervention delivery, and resources available for intervention implementation can aid consultants in developing an appropriate plan (Sanetti & Kratochwill, 2009a, 2009b).

Similarly, classroom management practices teachers are currently implementing should be assessed to determine if consultant-provided instructions and modeling may aid in more effective implementation. Relatedly, relevant antecedents and consequences to children's behavior should be assessed during the teacher interview. This will aid consultants in developing implementation supports that prepare teachers to identify and alter contingencies for children's behaviors (e.g., delivering behavior specific praise for appropriate behavior vs. reprimands for attention-maintained disruptive behaviors). Furthermore, other contextual variables that impact child behavior, such as the structure of the day, format of instructional time, amount of free play activities, and small vs. large group instructions should be assessed to identify targets for teacher behavior change (e.g., modification of instruction time).

Given the importance of family involvement in early education settings (Fox et al., 2015; Hemmeter et al., 2007), consultants should also inquire about the extent of parent-teacher collaboration. Limited parent-teacher collaboration can be addressed through Tiers 1 and 2 implementation supports by prompting teachers to make regular contact with children's family members. Furthermore, strategies to collaborate with families can be disseminated. As such, this variable is essential to assess to ensure comprehensive supports are being provided.

Establishing Treatment Integrity Data Collection

The final step in the Problem Identification phase should include establishing treatment integrity data collection. The type

of treatment integrity data collected should be directly informed by data from the universal screening, center administrator interview, teacher interview, and direct observation. That is, the intervention trained via multitiered consultation should be operationally defined and broken into measurable steps. Treatment integrity data can be collected by an educator (i.e., self-report), via permanent product, or through consultant observation (Collier-Meek et al., 2018). Regardless of the method, regular collection of treatment integrity data is essential to the behavior analytic multitiered consultation model, as transitions between the tiers of implementation supports are primarily based on educators' treatment integrity.

Problem Analysis

The primary objective of the Problem Analysis phase of multitiered consultation is to analyze early childhood educators' treatment integrity as well as the implementation environment via a behavior analytic framework. That is, educators' intervention implementation, or competing behaviors, can be evoked by antecedents (e.g., prompts, visual aids) and maintained by consequences (e.g., praise from center director, improved child behavior) (Collier-Meek et al., 2017b). For example, intervention implementation (target behavior) can be evoked by visual aids (e.g., scripts, signs; antecedents) and maintained by improved child behavior (i.e., positive reinforcement; consequence). Relatedly, an educator may have a child removed from the classroom for disruptive behavior (competing behavior) instead of implementing an intervention (target behavior) during an instructional period which results in not having to manage difficult behavior (negative reinforcement) (Collier-Meek et al., 2017b).

Analysis of Competing Behaviors and Intervention Implementation

To begin the Problem Analysis phase, it is important to clarify and define any behaviors that interfere with effective intervention implementation. For example, educators' use of reprimands,

sending children out of the room, and removing/avoiding child task demands can result in reinforcement for these behaviors by way of eliminating difficult child interactions, but actively prevent intervention implementation. Once identified, competing behaviors should be operationally defined such that they are quantifiable and observable (Collier-Meek et al., 2017b). Similarly, potential antecedents and consequences to teachers' target behaviors (i.e., intervention implementation) and competing behaviors should also be clarified and operationally defined. Hypothesized competing behaviors and their respective environmental variables to be observed can be gathered during the Problem Identification stage. However, the Problem Analysis stage is used to verify and clearly define these.

Following an objective and measurable description of competing behaviors and environmental variables, direct observations should be conducted. Systematic direct observations of educators' competing behaviors can result in the development of hypotheses about environmental variables that maintain competing behaviors and prevent intervention implementation. Antecedent-behavior-consequence (ABC) continuous recording allows consultants to record the occurrence of competing behaviors in addition to relevant environmental stimuli using interval-based recording (Cooper et al., 2020). These data can allow consultants to calculate conditional probabilities (i.e., extent to which antecedents, behaviors, and consequences are related; Eckert et al. 2005). These data make it possible to identify patterns of antecedents that evoke competing behaviors and consequences that maintain them (Collier-Meek et al., 2017b).

This assessment should also occur for developmentally appropriate classroom management practices, such as behavior specific praise, effective instruction delivery, differential attention, precorrection delivery, and emotion labeling, to name a few (Dufrene et al., 2012; Hemmeter et al., 2007; Stormont et al., 2007). Conducting ABC conditional probabilities analyses for these practices can help

identify antecedents that prevent their occurrence (e.g., lack of visual reminders) and consequences that suppress their use (e.g., behavior specific praise delivery resulted in increased disruptive behavior). Conversely, analyzing environmental variables associated with evoking intervention implementation (e.g., verbal reminders from consultant to prompt implementation) and maintaining its use (e.g., when effective instructions are used, children are more likely to comply) can provide important information on variables that can be capitalized on during consultation. Following systematic observation, hypotheses about functions of competing behaviors can be developed. This information should be used to develop implementation supports that alter those environmental variables that influence competing behaviors (Collier-Meek et al., 2017b).

Goal Setting and Implementation Support Selection

The final stage of Problem Analysis is to identify a treatment integrity goal and implementation support. The treatment integrity goal should be evidence-based and supported by empirical research. That is, goals for increasing treatment integrity should be based on educators' baseline rates of a given skill. For example, it may not be practical to require an educator to implement an intervention with 100% integrity if their baseline rates of intervention implementation are near zero. In this scenario, the treatment integrity goal should be gradually increased over time as the educator has opportunities to practice intervention implementation and be reinforced (e.g., slightly improved child behavior, praise from center director/ consultant) for implementation (Allen & Warzak, 2000; Collier-Meek et al., 2017b). Notwithstanding, treatment integrity goals should also be supported by the literature. For example, some research indicates that an educator's behavior specific praise rate of about one praise statement per two minutes, on average, is sufficient for promoting improved behavior in young children (LaBrot et al., 2020, 2021). Of particular importance is using research literature to make empirically informed decisions about selecting target

treatment integrity levels that result in improved child outcomes.

Additionally, implementation supports to be utilized should be selected prior to Plan Implementation. In a behavior analytic multitiered consultation framework, initial implementation supports are antecedent-based procedures. For example, supports such as behavioral skills training, intervention manuals/scripts, and prompting are ideal supports, as they can be feasibly implemented and be broadly applied across more than one educator (Collier-Meek et al., 2017b). However, the decision to utilize one of these supports should include educator input. Allowing educators an opportunity to choose the implementation supports they receive can result in increased intervention adherence (Dart et al., 2012). Furthermore, educator-chosen supports may be more salient to educators given their preference for those supports, and therefore more effective and promoting intervention implementation.

Plan Implementation and Plan Evaluation

Once an implementation support is selected, educators should be adequately prepared in its use. Assuming Tier 1 supports (i.e., professional development trainings) have not been effective for promoting treatment integrity, consultants should ensure that educators have the necessary resources to implement an intervention and can identify intervention components. As such, a brief meeting/training session may be held in which a consultant trains an educator in intervention implementation utilizing evidence-based teaching methods (e.g., behavioral skills training; LaBrot et al., 2022). If data determine that Tier 1 supports are ineffective, consultants should prepare educators to receive Tier 2 supports by thoroughly explaining (1) how the implementation support will be delivered and (2) exactly how educators should respond to them. For example, if an educator and consultant agree that receiving emailed prompts is the most appropriate support, the educator should be informed how often emailed prompts will be sent, when they will be sent, what they will consist of, and how

often they should be viewed (LaBrot et al., 2022). After ensuring that educators understand the intervention and implementation supports, the supports should then be systematically delivered.

A vital component of the behavior analytic multitiered consultation model is monitoring educators' intervention implementation. Assessment of intervention implementation should be feasible but should also occur with enough regularity that consultants can make effective and efficient decisions to either withdraw or intensify supports. Ideally, data collection should involve direct observation of educators' intervention implementation. This can be done in vivo (i.e., consultant observes during ongoing classroom activities; LaBrot et al., 2020) or via audio- or visual-recording (e.g., LaBrot et al., 2021a). That said, audio- and visual-recording allow consultants more feasibility in data collection and therefore allow them to engage in other consultative activities. However, if audio- and/or visual-recordings are utilized, educators should be trained how and when (i.e., during time in which intervention implementation is expected) to record treatment integrity data. Additionally, there are likely ethical issues related to inadvertently recording child data which should be controlled for if possible. If this is not possible, audio- and visual-recording may not be possible.

Data-based Decision Making

The central tenet of the behavior analytic multitiered consultation model is data-based decision making. Data-based decision making allows consultants to determine whether implementation supports should be (1) continued, (2) intensified or changed, or (3) withdrawn. Careful consideration should be given to the threshold by which decisions are made. That is, data should be collected in such a way that changes in implementation supports can be made quickly to promote educators' rapid acquisition of interventions skills. This may also prevent the worsening of children's problem behavior.

Following a referral concern, data should first be collected on educators' implementation of interventions trained during Tier 1. In many cases, this serves as a baseline given that all educators have received universal, professional development (i.e., this condition exists across all educators within an early childhood education center) (e.g., LaBrot et al., 2020, 2021a). Following baseline data collection on educators' treatment integrity after Tier 1 training, a criterion for moving to more intensive training should be established. Previous multitiered consultation research in early childhood education settings shifted from lower to higher tiers contingent upon not meeting a criterion for five consecutive observations (LaBrot et al., 2020). However, LaBrot et al. (2020) noted that this criterion may be too stringent and could result in educators receiving Tier 2 supports for a prolonged period of time with only variable treatment integrity and lack of improvement in child behavior. Alternatively, less stringent thresholds for transitioning to more intensive implementation supports (e.g., not meeting criterion three times nonconsecutively; LaBrot et al., 2021) should be strongly considered to prevent degradation in treatment integrity and child behavior.

Using this data-based decision-making approach, consultants can make objective decisions in changes between tiers. Following data collection after Tier 1 supports that indicate a clear pattern of low or inconsistent intervention implementation, educators should be transitioned to Tier 2 supports. Tier 2 supports should include antecedent-based implementation supports (See Table 1). As discussed previously, data gathered during the Problem Analysis phase should be taken into careful consideration as the consultant selects an antecedent-based implementation support. For example, educators who seem to perform skills well, but less frequently than needed, may benefit from daily prompts to perform a skill. Alternatively, educators that seem to struggle

with understanding how and when to implement an intervention may benefit from more direct antecedent-based implementation supports (e.g., in situ training; Dufrene et al., 2012; LaBrot et al., 2016, 2021b). If an educator's treatment integrity improves with Tier 2 supports (i.e., meets the criterion previously established), they should be transitioned back to Tier 1 supports (i.e., no additional implementation supports provided beyond the regularly scheduled professional development). The criterion to switch an educator from Tier 2 back to Tier 1 supports should more stringent (e.g., five consecutive observations of meeting criterion) than the criterion to switch from Tier 1 to 2, to ensure educators adequately and consistently maintain a skill overtime. This may also ensure that an effective implementation support is not prematurely withdrawn before an educator has mastered intervention implementation.

Alternatively, if educators fail to meet a predetermined criterion during Tier 2, they should then be transitioned to Tier 3. Tier 3 implementation supports should consist of both antecedent- and consequent-based supports (See Table 1). Following implementation of Tier 3 supports, data should continue to be collected to determine whether the educator meets the predetermined criterion. If the criterion is achieved, the educator should be transitioned back to Tier 2 supports and then monitored to determine if the criterion continues to be met. Then, if the criterion is again met, the educator should be transitioned to Tier 1 supports (i.e., removal of all implementation supports). We recommend a stepwise transition from Tier 3 to Tier 1, so implementation supports are gradually faded to help maintain educators' intervention implementation (LaBrot et al., 2021a). Additionally, transition to Tier 3 should include a less stringent criterion than transferring from Tier 3 to 2. As previously stated, a less stringent criterion to transition to higher tiers may help prevent degradation in treatment integrity, while a more stringent criterion to switch from Tier 3 to 2, and so on, may promote educator mastery of intervention implementation.

Table 1
Empirically Based Implementation Supports

Implementation Support	Description	Studies	Delivery of Support	Hypothesized Mechanism of Action
Intervention manual	Intervention overview and steps for implementation provided in a detailed, written manner	Lawton & Kasari, 2012*	Prior to implementation	Antecedent
Test driving interventions	Implementer tries various interventions before selecting the most acceptable intervention for ongoing implementation	Dart et al, 2012**; Johnson et al, 2013**	Prior to implementation	Antecedent
Direct training	Training activities including an introduction to the intervention, consultant modeling, implementer practice, and feedback	Baker et al., 2010*; Tiano & McNeil, 2006*	Prior to or during implementation (as needed)	Antecedent
Treatment planning protocol	Three-step standardized process to define an intervention, develop intervention integrity assessment, and create an intervention integrity self-assessment form	Sanetti & Kratochwill, 2009**	Prior to implementation	Antecedent
Implementation planning	Detailed logistical planning related to intervention implementation (i.e., Action Planning) and problem-solving approach to address potential implementation barriers	Sanetti, Fallon, & Collier-Meek., 2013**; Sanetti et al., 2014*	Prior to or during implementation (as needed)	Antecedent
Intervention scripts	Implementer provided with written instructions and language to use during implementation	Ehrhardt, et al, 1996*	Prior to implementation	Antecedent
Role play	Consultant models the intervention and allows the implementer to practice using actual intervention scenarios followed by feedback	Trevisan, 2004	Prior to or during implementation (as needed)	Antecedent
Participant modeling	Consultant models the intervention within the implementation setting and provides the implementer with support during independent practice	Tschannen-Moran & McMaster, 2009**	Prior to or during implementation (as needed)	Antecedent
Self-monitoring	Implementer completes checklist during or after implementation	Simonsen et al, 2013***	During implementation	Antecedent
Prompts	Consultant provides proactive reminders to implement components of an intervention	LaBrot et al, 2022*	During implementation	Antecedent
Instructional coaching	Intensive, differentiated strategies conducted by a skilled and empathic listener/coach to support implementers	Knight, 2007	Prior to or during implementation (as needed)	Antecedent (e.g. training) / Consequence (e.g. feedback)
Video support	Video recorded during implementation to self-monitor by the implementer and provide consultant feedback	Downer et al., 2011*	During implementation	Consequence
Performance feedback	Feedback (i.e., verbal, graphic) provided on actual implementation behavior. May be combined with practice, prompting, or self-monitoring components	Kaufman et al., 2013*; Sanetti, Luiselli, & Handler, 2007*	During implementation	Consequence

Note. All studies without a superscript are general overviews. * PreK-K Teachers   ** Elementary Teachers   ***Middle School Teach

Current Research, Practical Implications, and Future Directions

Current Research

Although a multitiered consultation model is largely conceptual at this point in time, there are four known published studies that have evaluated this model with early childhood educators. It is important to note that these studies do not explicitly state that they followed a multitiered consultation model. Rather, these studies were identified through a systematic search, and demonstrated similar methodology; that is, there were multiple tiers of implementation supports in which switching to higher tiers was contingent upon not meeting a specific criterion in a lower tier. These studies provide the groundwork for this model in terms of practical applications and future research needs.

Gerencser et al. (2018) evaluated a multitiered consultation model for training paraprofessionals in three preschool special education classrooms to implement discrete trial instruction (DTI) with children with various neurodevelopmental disabilities (e.g., developmental delay, autism spectrum disorder). Tier 1 support involved paraprofessionals individually engaging in an interactive computer training on DTI implementation, Tier 2 involved use of a checklist to remind paraprofessionals of DTI steps, and Tiers 3 and 4 involved provision of remotely delivered performance feedback. Data indicated that all paraprofessionals required at least three tiers of support to increase DTI implementation to adequate levels, with evidence that DTI skills maintained over time and generalized to novel skills taught via DTI. No child data were collected in this study. Of note, this is the only study of the four that implemented a behavior analytic multitiered consultation framework, in that initial consultation tiers (Tiers 1 and 2) involved antecedent-based supports (i.e., training, checklists) and the more intensive tiers (Tiers 3 and 4) involved consequent-based supports (i.e., various forms of performance feedback).

LaBrot et al. (2020) evaluated a non-behavior analytic multitiered consultation framework for increasing four educators' (two Early Head Start teachers, two elementary teachers) rates of behavior specific praise and decreasing reprimands. Tier 1 involved large group professional development, Tier 2 involved performance feedback, and Tier 3 involved tactile prompting. Results indicated that only Tier 2 was necessary to increase the two early childhood educators' rates of behavior specific praise to adequate levels that maintained over time, with concomitant increases in children's appropriate behaviors and decreases in disruptive behaviors. No meaningful decreases in early childhood educator reprimands were observed and no data on generalized outcomes were collected. Ennis et al. (2020) evaluated a multitiered consultation model with three early childhood educators for increasing rates of behavior specific praise, choice giving, and precorrections. Like LaBrot et al. (2020), Tier 1 involved large group professional development. However, Tiers 2 and 3 involved coaching (i.e., prompts, performance feedback, examples) and self-monitoring, respectively. Results indicated that only one educator required all three tiers to increase rates of all dependent measures, while the other two educators only required Tier 2 supports. No generalization, maintenance, or child data were collected.

Finally, Markelz et al. (2021) tested the effectiveness of a multitiered consultation framework for increasing three early childhood educators' rates of behavior specific praise. Tier 1 included individual educator training and goal setting, Tier 2 included self-monitoring, and Tier 3 included tactile prompting. Results of this study indicated that all three early childhood educators' rates of behavior specific praise increased to adequate levels after receiving all three tiers of supports, which resulted in generalization of behavior specific praise across children. Child data indicated improved on-task behavior; no maintenance data were collected. Collectively, these four studies demonstrate initial evidence for the effectiveness of a multitiered consultation model for early childhood

educators. Methods and results of these studies offer important information for this model's application.

Implications

First, the majority (three of four) of these studies involved training early childhood educators to implement relatively simple strategies, such as behavior specific praise (Ennis et al., 2020; LaBrot et al., 2020; Markelz et al., 2021), choice giving, and precorrections (Ennis et al., 2020). Although only demonstrated in LaBrot et al. (2020), these strategies are often effective for improving young children's behavior in early childhood education settings (Dufrene et al., 2012; Gorton et al., 2021; LaBrot et al., 2021; Stormont et al., 2007). As such, use of a multitiered consultation model for training early childhood educators to implement simple and effective universal behavior management strategies is encouraged.

Alternatively, Gerencser et al. (2018) evaluated a behavior analytic multitiered consultation model for teaching early childhood paraprofessionals a relatively complex intervention (i.e., DTI), which may have resulted in all participants requiring each tier of consultation support. Additionally, implementation supports utilized in initial tiers were indirect in nature; that is, interactive computer training (Tier 1) and checklists (Tier 2) did not involve direct teaching or rehearsal in the environment in which DTI would occur. This also may have contributed to all participants requiring Tiers 3 and 4 (one participant), which involved providing performance feedback on direct skill use. Therefore, it is possible a behavior analytic multitiered consultation model to teach more complex interventions should involve more direct training techniques at each tier. For example, behavioral skills training and in situ training delivered in the environment in which early childhood educators are expected to perform the intervention being trained (e.g., Dufrene et al., 2012; LaBrot et al., 2016, 2021) could serve as Tiers 1 and 2, respectively. Furthermore, Tier 3 could involve in situ training in which both prompts and performance feedback are delivered in real-time.

Similarly, another implication for this model involves the types of implementation supports delivered within Tier 1. That is, Tier 1 supports across all four studies included some form of professional development that involved instructions (Ennis et al., 2020; Gerencser et al., 2018; LaBrot et al., 2020; Markelz et al., 2021), modeling (Gerencser et al., 2018), rehearsal/role-playing (Ennis et al., 2020; Gerencser et al., 2018; Markelz et al., 2021), and performance feedback (Gerencser et al., 2018; Markelz et al., 2021). Although these training components were delivered inconsistently across studies, it may be beneficial to ensure all of these are incorporated into Tier 1 supports to bolster the potential effectiveness of this support.

Furthermore, two studies (i.e., LaBrot et al., 2020; Markelz et al., 2021) included antecedent-based supports (i.e., tactile prompting) at the Tier 3 level. This may indicate that if these had been implemented as Tier 2 supports, early childhood educator participants could have improved intervention integrity sooner. This also would have been commensurate with a behavior analytic multitiered framework, in which antecedent-based supports precede consequent-based supports. Of course, the antecedent-based supports delivered during Tier 3 may have been effective, in part, due to multiple treatment interference (i.e., more than one intervention impacting behavior) and order effect (i.e., particular order of tiered supports resulted in behavior change). Regardless, researchers and practitioners are encouraged to adopt the behavior analytic multitiered consultation model as the delivery of potentially effective antecedent-based interventions may negate the need for further implementation support, which may save times and resources.

Finally, results of these studies highlight ideal consultation interactions in which participants generally implemented interventions trained through consultation. However, it can often be the case that barriers such as uncooperative early childhood educators, educator turnover, or extended educator absences impact effective, ongoing consultation. In these instances,

consultants may consider delivering electronic universal supports (e.g., emailed prompts; LaBrot et al., 2022) to all educators and staff involved with a given child or classroom, to ensure all are prepared to deliver necessary evidence-based practices. Furthermore, if educators are uncooperative with the consultation process, strategies such as motivational interviewing (e.g., LaBrot et al., 2016) and educator-led goal setting (e.g., Cohrs et al., 2016) may result in improved adherence to consultation and subsequent intervention implementation.

Future Directions

Because only four known studies have evaluated the effectiveness of multitiered consultation with early childhood educators, there are several areas of future research that should be explored. First, data on early childhood educators' maintenance and generalized outcomes should be collected in future multitiered consultation studies. These data are important to collect to determine the long-term effectiveness (i.e., intervention implementation is sustained) and efficiency (i.e., intervention implementation spontaneously generalizes without additional support) of the multitiered consultation model. Second, data on early childhood educators' outcomes have been limited to DTI, behavior specific praise, choice giving, and precorrections. While these are important interventions that impact young children's social-emotional, behavioral, and learning development, they are limited in scope. As such, additional research should evaluate the effectiveness of a multitiered consultation model for promoting other educator-implemented interventions (e.g., effective instruction delivery, group contingencies).

Third, future studies evaluating this model should seek to collect child outcome data. These data are important to collect to determine the extent to which educators' improved intervention implementation results in improved child outcomes. Fourth, more research is needed to evaluate the effectiveness of a behavior

analytic multitiered consultation model. The behavior analytic multitiered consultation model has the potential to be effective and potentially more efficient than a multitiered model in which supports are non-systematically delivered. As such, future research should seek to specifically evaluate this model's efficiency in terms of time, resources, cost-effectiveness, and social validity. Finally, although this model is proposed as an approach to better ensure efficiency in consultation, no data on barriers and difficulties with this model have been collected. Therefore, future research should seek to collect data on consultants' and teachers' perceived barriers and difficulty with this model (e.g., consultation intensity, teacher stress/burnout), to determine future steps to improve this model's implementation.

Case Study

The following case study took place in a suburban university-based child development center in a mid-sized city in the southeastern USA. The child development center housed nine classrooms with children grouped by age, ranging from 3 months to 5 years. A licensed psychologist faculty member and two doctoral-level graduate students served as consultants for this case study. Data in the following case study were collected during the course of contractual consultation between a doctoral school psychology program and the described child development center. As part of our formal agreement with this agency, educators, staff, and administrators were aware that clinical data collection could be used for teaching and research purposes. In addition, the teacher participant in this case study provided verbal consent to allow de-identified data collected during consultation for this manuscript and other teaching purposes.

Problem Identification

Upon receiving a referral for consultative services by this child development center, a consultant met with the center administrator.

The center administrator indicated that several teachers in the center had not received formal behavior or classroom management training. However, some had previously received brief professional development trainings from the faculty supervisor on strategies such as behavior specific praise, planned ignoring, effective instruction delivery, and precorrections as strategies to prevent problem behavior. The center administrator provided a list of teachers who would benefit from consultation to improve their classroom management strategies. At the time of this case study, no formal universal screening was in place.

One of the teachers who was referred for consultation was a lead teacher, Ms. Mary (pseudonym). Ms. Mary was a 28-year-old White female who held a bachelor's degree in Child and Family Sciences and was currently in her third year of teaching. Upon receiving her name as a referral, a consultant conducted a brief interview with Ms. Mary. Children's ages in Ms. Mary's classroom ranged from 2 to 3 years old and consisted of three White males, one African American male, and one Caucasian female. Additionally, one child was diagnosed with autism spectrum disorder. Ms. Mary indicated that the most common problem behaviors she experienced in her classroom included low rates of compliance, tantrums, and leaving designated areas. Moreover, she noted that these behaviors most often occurred during art activities. Art activities consisted of painting, drawing, and coloring. Child expectations during art activities included staying seated, keeping materials on the table, and complying with teacher instructions. During each art activity, Ms. Mary sat with the children and facilitated the activity and managed disruptive behavior.

Problem Analysis

After the brief interview with Ms. Mary, a consultant observed the art activity. The consultant noted that Ms. Mary delivered an adequate amount of behavior specific praise during the activity,

but sometimes these praise statements were not directed towards "rule-following" behavior (i.e., praised for using brush correctly, but not praised for following instructions). Ms. Mary was not observed to remind children of expectations before, during, or after the art activity. When children did not follow instructions or engaged in disruptive behavior, Ms. Mary was observed to deliver reprimands (i.e., competing behavior), which appeared to function to terminate disruptive behavior (i.e., negative reinforcement for competing behavior). As such, the consultation team (i.e., consultants, teacher, faculty supervisor) determined that increasing Ms. Mary's rate of precorrections was the most appropriate intervention, given that she was not observed to implement this strategy and she was already delivering adequate rates of praise. The consultants further hypothesized that precorrections might function to increase compliance expectations for art activities, which would facilitate behavior specific praise delivery for "rule-following" behavior.

Precorrections were defined as vocal statements directed towards a single child or group of children to specify appropriate, expected behaviors before an activity and/or during the activity (e.g., "Remember to keep materials on the table," "Remember to stay in your seat during art time," "Remember to follow directions during art time"). Consultants set a preliminary goal to increase Ms. Mary's use of precorrective statements to approximately three per 10 min on average, which has some derivation from empirical research (Ennis et al., 2020). Observations to monitor treatment integrity were ten minutes in duration and occurred between two to three days per week. Observers recorded Ms. Mary's rate of precorrection statements during 10 sec intervals, which was converted to a rate-based measure by dividing the total number of pre-corrective statements by 10 (i.e., length of observation in minutes). For all observations, observers sat in an unobtrusive location in the classroom and used a digital audio

cueing device that prompted the beginning and end of each observation interval.

Ms. Mary indicated she was motivated to improve children's behavior and would be open to consultants selecting the implementation supports to be used. Given Ms. Mary's high level of motivation and demonstrated skills with other intervention use (i.e., good behavior specific praise), the consultants decided to implement goal setting (Tier 2) and provide performance feedback (Tier 3) because these strategies are effective, simple, and minimally invasive.

Plan Implementation

As previously stated, some teachers in the early childhood development center (including Ms. Mary) had received professional development training on effective classroom management practices (Tier 1). Tier 1 universal training involved teaching individual teachers to use behavior-specific praise, planned ignoring, effective instruction delivery, and precorrections to management classroom behavior. Ms. Mary had received this training approximately two months prior to this case study.

Goal setting (Tier 2) began with a consultant asking Ms. Mary how many precorrective statements she would like to try to implement during the 10 min art activity, to which she selected three. Additionally, the teacher selected three distinct pre-corrective statements that would be most relevant to the task. These statements included "Remember to stay in your seat during art time," "Remember to keep materials on the table," and "Remember to follow directions during art time." On days in which the consultant was in the center, they briefly reminded Ms. Mary of her goal.

The Tier 3 implementation support consisted of goal setting with the addition of performance feedback. In addition

to reminding Ms. Mary of the precorrective statement goal, feedback was provided regarding precorrective statement rate. If Ms. Mary met or exceeded the precorrective statement delivery goal, the consultant provided praise. If Ms. Mary did not meet the precorrective statement delivery goal, the consultant provided a reminder of the goal and encouragement to increase pre-corrective statement delivery for the next observation.

Plan Evaluation

Results for Ms. Mary's rate of precorrective statements are displayed graphically in Figure 2. During baseline data collection, Ms. Mary's precorrection statement rates remained low and stable ($M = 0$ statements per minute). During goal setting (Tier 2), Ms. Mary's rate of precorrections reflected an immediate level increase with high variability and an increasing trend at the conclusion of the phase (M = .26 statements per minute). Due to the variability of the data, and some cases in which the goal was not met, the consultation team agreed to begin providing performance feedback (Tier 3). During Tier 3 implementation supports, Ms. Mary's rate of precorrection statements stabilized, albeit with a decreasing trend (M = .47 statements per minute). Because the end of the program semester was quickly approaching and because Ms. Mary indicated she believed she could maintain precorrective statement use at her current rate, the consultation team agreed to terminate all implementation supports and monitor for maintenance. However, the ideal situation would have been to implement Tier 2 supports for at least a short period of time (e.g., one to two days). During maintenance, Ms. Mary's rate of precorrection statements demonstrated moderate variability (M = .33 statements per minute), but were generally consistent with the previously established goal. Unfortunately, social validity data assessing Ms. Mary's perceptions of this model were not collected.

Figure 2
Ms. Mary's Rate of Precorrection Statements
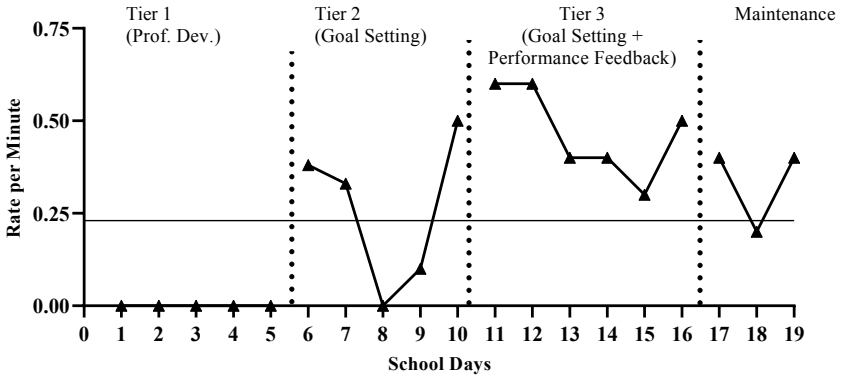
Summary and Conclusions

This case study generally follows the proposed guidelines of a behavior analytic multitiered consultation model. First, consultants met with the lead center administrator to gather background information related to the needs of center teachers and staff as a whole. This led to an interview with Ms. Mary, in which relevant data were collected such as Ms. Mary's previous experience with learning about and implementing evidence-based strategies (e.g., behavior specific praise), her willingness and motivation to implement new strategies, and child problem behaviors and other relevant barriers to intervention implementation. Collecting these data allowed consultants to select an appropriate evidence-based strategy (i.e., precorrective statements) and a Tier 2 implementation support (i.e., goal setting). Goal setting may have also aided in teacher compliance with consultation procedures, as Ms. Mary was allowed to select not only her precorrective statement rate but the most relevant types of precorrective statements. This level of input is often beneficial for teacher buy-in.

Following implementation of goal setting, data suggested that Ms. Mary's implementation of precorrections were variable. As such, a data-based decision to implement Tier 3 supports (i.e., goal setting with performance feedback) was made. Although Ms. Mary's overall use of precorrective statements increased above baseline levels during Tier 2, a decision to move to Tier 3 was made as inconsistent use of an intervention can be just as detrimental as lack of intervention implementation. Following a consistent increase in precorrective statements during Tier 3, the consultation team decided to move Ms. Mary to maintenance. Although we recommend that educators be gradually transitioned to lower level supports to facilitate fading, it is sometimes appropriate to shift away from use of implementation supports given qualitative data. In Ms. Mary's case, this included her high-level of motivation, verbal indication she no longer needed support to implement this strategy, and the fact that there was not enough time to fade from Tier 2 to maintenance before the conclusion of the program. Taken together, results of this case study highlight the use and effectiveness of the behavior analytic multitiered consultation model. However, this should not be considered an experimental demonstration of this model's effectiveness; rather, it is our hope that this case study serves as a guide for practitioners and researchers.

References

Ali, M. M., Teich, J., Lynch, S., & Mutter, R. (2018). Utilization of mental health services by preschool-aged children with private insurance coverage. *Administration and Policy in Mental Health and Mental Health Services Research, 45*(5), 731-740. https://doi.org/10.1007/s10488-018-0858-x

Allen, K. D., & Warzak, W. J. (2000). The problem of parental nonadherence in clinical behavior analysis: Effective treatment is not enough. *Journal of Applied Behavior Analysis, 33*(3), 373-391. https://doi.org/10.1901/jaba.2000.33-373

Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis, 1*(1), 91-97. https://doi.org/10.1901/jaba.1987.20-313

Baker, C. N., Kupersmidt, J. B., Voegler-Lee, M. E., Arnold, D. H., & Willoughby, M. T. (2010). Predicting teacher participation in a classroom-based, integrated preventive intervention for preschoolers. *Early Childhood Research Quarterly, 25*(3), 270–283. https://doi.org/10.1016/j.ecresq.2009.09.005

Barton, E. E., Velez, M., Pokorski, E. A., & Domingo, M. (2020). The effects of email performance-based feedback delivered to teaching teams: A systematic replication. *Journal of Early Intervention, 42*(2), 143-162. https://doi.org/10.1177/105381511987245

Bick, J., & Nelson, C. A. (2017). Early experience and brain development. *Wiley Interdisciplinary Reviews: Cognitive Science, 8*(1-2), 1-12. https://doi.org/10.1002/wcs.1387

Carter, A. S., Wagmiller, R. J., Gray, S. A. O., McCarthy, K. J., Horwitz, S. M., & Briggs-Gowan, M. J. (2010). Prevalence of DSM-IV disorder in a representative, healthy birth cohort at school entry: Sociodemographic risks and social adaptation. *Journal of the American Academy of Child and Adolescent Psychiatry, 49,* 686–698. https://doi.org/10.1016/j.jaac.2010.03.018

Cohrs, C. M., Shriver, M. D., Burke, R. V., & Allen, K. D. (2016). Evaluation of increasing antecedent specificity in goal statements on adherence to positive behavior-management strategies. *Journal of Applied Behavior Analysis, 49*(4), 768-779. https://doi.org/10.1002/jaba.321

Collier-Meek, M. A., Fallon, L. M., & DeFouw, E. R. (2017a). Toward feasible implementation support: Emailed prompts to promote teachers' treatment integrity. *School Psychology Review, 46,* 379-394. DOI: 10.17105/SPR-2017-0028.V46-4

Collier-Meek, M. A., Fallon, L. M., & Gould, K. (2018). How are treatment integrity data assessed? Reviewing the performance feedback literature. *School Psychology Quarterly, 33*(4), 517-526. https://doi.org/10.1037/spq0000239

Collier-Meek, M. A., Sanetti, L. M. H., & Fallon, L. M. (2017b). Incorporating applied behavior analysis to assess and support educators' treatment integrity. *Psychology in the Schools, 54*(4), 446-460. https://doi.org/10.1002/pits.22001

Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed.). Pearson.

Dart, E. H., Cook, C. R., Collins, T. A., Gresham, F. M., & Chenier, J. S. (2012). Test driving interventions to increase treatment integrity and student outcomes. *School Psychology Review, 41*(4), 467-481. https://doi.org/10.1080/02796015.2012.12087500

Downer, J. T., Pianta, R. C., Fan, X., Hamre, B. K., Mashburn, A., & Justice, L. (2011). Effects of Web-Mediated Teacher Professional Development on the Language and Literacy Skills of Children Enrolled in Prekindergarten Programs. NHSA Dialog, 14(4), 189–212. https://doi.org/10.1080/15240754.2011.613129

Duchaine, E. L., Jolivette, K., & Fredrick, L. D. (2011). The effect of teacher coaching with performance feedback on behavior-specific praise in inclusion classrooms. *Education and Treatment of Children, 34,* 209-277. DOI: 10.1353/etc.2011.0009

Dufrene, B. A., Parker, K., Menousek, K., Zhou, Q., Harpole, L. L., & Olmi, D. J. (2012). Direct behavioral consultation in Head Start to increase teacher use of praise and effective instruction delivery. *Journal of Educational and Psychological Consultation, 22*(3), 159-186. https://doi.org/10.1080/10474412.2011.620817

Dufrene, B. A., Zoder-Martell, K. A., Dieringer, S. T., & LaBrot, Z. (2016). Behavior analytic consultation for academic referral concerns. *Psychology in the Schools, 53*(1), 8-23. https://doi.org/10.1002/pits.21885

Eckert, T. L., Martens, B. K., & DiGennaro, F. D. (2005). Describing antecedent-behavior-consequence relations using conditional probabilities and the general operant contingency space: A preliminary investigation. *School Psychology Review, 34*(4), 520-528. https://doi.org/10.1080/02796015.2005.12088013

Egger, H. L., & Angold, A. (2006). Common emotional and behavioral disorders in preschool children: Presentation, nosology, and epidemiology. *Journal of Child Psychology and Psychiatry, 47*(3), 313-337. https://doi.org/10.1111/j.1469-7610.2006.01618.x

Ehrhardt, K. E., Barnett, D. W., Lentz Jr., F. E., Stollar, S. A., & Reifin, L. H. (1996). Innovative methodology in ecological consultation: Use of scripts to promote treatment acceptability and integrity. *School Psychology Quarterly, 11*(2), 149-168. https://doi.org/10.1037/h0088926

Ennis, R. P., Flemming, S. C., Michael, E., & Lee, E. O. (2020). Using a tiered approach to support early childhood educators' use of behavioral strategies. *Education and Treatment of Children, 43*(3), 265-277. https://doi.org/10.1007/s43494-020-00027-x

Erchul, W. P., & Martens, B. K. (2012). *School consultation: Conceptual and empirical bases of practice* (3rd ed.). Springer.

Fallon, L. M., Collier-Meek, M. A., Kurtz, K. D., & DeFouw, E. R. (2018). Emailed implementation supports to promote treatment integrity: Comparing the effectiveness and acceptability of prompts and performance feedback. *Journal of School Psychology, 68,* 113-128. https://doi.org/10.1016/j.jsp.2018.03.001

Fox, L., Carta, J., Strain, P. S., Dunlap, G., & Hemmeter, M. L. (2010). Response to intervention and the pyramid model. *Infants & Young Children, 23*(1), 3-13. DOI: 10.1097/IYC.0b013e3181c816e2

Fox, L., Corso, R., Binder, D., Simonsen, B., George, H., Freeman, J., & Sugai, G. (2015). Program-wide PBS and school-wide PBIS crosswalk. Retrieved December 28, 2022 from chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://nceln.fpg.unc.edu/sites/nceln.fpg.unc.edu/files/resources/pyramid_and_swpbis_crosswalk.pdf

Freeman, J., Simonsen, B., Briere, D. E., & MacSuga-Gage, A. S. (2014). Pre-service teacher training in classroom management: A review of state accreditation policy

and teacher preparation programs. *Teacher Education & Special Education, 37*(2), 106-120. https://doi.org/10.1177/0888406413507002

Gerencser, K. R., Higbee, T. S., Contreras, B. P., Pellegrino, A. J., & Gunn, S. L. (2018). Evaluation of interactive computerized training to teacher paraprofessionals to implement errorless discrete trial instruction. *Journal of Behavioral Education, 27*(4), 461-487. https://doi.org/10.1007/s10864-018-9308-9

Gomez, L., Barton, E. E., Winchester, C., & Locchetta, B. (2021). Effects of email performance feedback on teachers' use of play expansions. *Journal of Early Intervention, 43*(3), 235-254. https://doi.org/10.1177/1053815120969821

Gorton, K., Allday, R. A., Lane, J. D., & Ault, M. J. (2021). Effects of brief training plus electronic feedback on increasing quantity and intonation of behavior specific praise among preschool teachers. *Journal of Behavioral Education,* 1-21. https://doi.org/10.1007/s10864-020-09427-w

Grace, C., Shores, E. F., Zaslow, M., Brown, B., Aufseeser, D., & Bell, L. (2006). *Rural disparities in baseline data of the early childhood longitudinal study: A chartbook.* Mississippi State University Early Childhood Institute.

Gresham, F. M. (1989). Assessment of treatment integrity in school consultation and prereferral intervention. *School Psychology Review, 18*(1), 37-50. https://doi.org/10.1080/02796015.1989.12085399

Hemmeter, M. L., Fox, L., Jack, S., & Broyles, L. (2007). A program-wide model of positive behavior support in early childhood settings. *Journal of Early Intervention, 29*(4), 337-355. https://doi.org/10.1177/105381510702900405

Hussar, B., Zhang, J., Hein, S., Wang, K., Roberts, A., Cui, J., Smith, M., Mann, F. B., Barmer, A., & Dilig, R. (2020). The condition of education 2020. NCES 2020-144. *National Center for Education Statistics.*

Johnson, L. D., Wehby, J. H., Symons, F. J., Moore, T. C., Maggin, D. M., & Sutherland, K. S. (2013). An analysis of preference relative to teacher implementation of intervention. *The Journal of Special Education, 48*(3), 214–224. https://doi.org/10.1177/0022466913475872

Kaufman, D., Codding, R. S., Markus, K. A., Tryon, G. S., & Kyse, E. N. (2013). Effects of verbal and written performance feedback on treatment adherence: Practical application of two delivery formats. *Journal of Educational and Psychological Consultation, 23*(4), 264-299. https://doi.org/10.1080/10474412.2013.845494

LaBrot, Z. C., DeFouw, E. R., & Eldridge, M. (2021a). Examination of a tiered training model to increase school psychology graduate students' behavior specific praise. *Education and Treatment of Children, 44*(4), 233-248. https://doi.org/10.1007/s43494-021-00048-0

LaBrot, Z. C., Dufrene, B. A., Olmi, D. J., Dart, E. H., Radley, K., Lown, E., & Pasqua, J. L. (2021b). Maintenance and generalization of preschool teachers' use of behavior-specific praise following in situ training. *Journal of Behavioral Education, 30*(3), 350-377. https://doi.org/10.1007/s10864-020-09375-5

LaBrot, Z. C., Dufrene, B. A., Whipple, H., McCargo, M., & Pasqua, J. L. (2020). Targeted and intensive consultation for increasing head start and elementary teachers' behavior-specific praise. *Journal of Behavioral Education, 29*(4), 717-740. https://doi.org/10.1007/s10864-019-09342-9

LaBrot, Z. C., Johnson, C., Maxime, E., Cato, T., Butt, S., & DeFouw, E. R. (2022). Emailed prompt package to promote maintenance and generalization of early childhood educators' behavior specific praise. *Journal of Behavioral Education,* 1-21. https://doi.org/10.1007/s10864-022-09475-4

LaBrot, Z. C., Pasqua, J. L., Dufrene, B. A., Brewer, E. A., & Goff, B. (2016). In situ training for increasing Head Start after-care teachers' use of praise. *Journal of Behavioral Education, 25*(1), 32-48. DOI: 10.1007/s10864-015-9233-0

Lawton, K., & Kasari, C. (2012). Teacher-implemented joint attention intervention: Pilot randomized controlled study for preschoolers with autism. *Journal of Consulting and Clinical Psychology, 80*(4), 687–693. https://doi.org/10.1037/a0028506

Markelz, A., Riden, B., & Hooks, S. D. (2021). Component analysis of training and goal setting, self-monitoring, and tactile prompting on early childhood educators' behavior-specific praise. *Journal of Early Intervention, 43*(2), 99-116. https://doi.org/10.1177/1053815120927091

Marsh, R. J., & Mathur, S. R. (2020) Mental health in schools: An overview of multitiered systems of support. *Intervention in School and Clinic, 56*(2), 67-73. https://doi.org/10.1177/1053451220914896

McKenney, E. L., Page, V., Lakota, J., Niekra, N., & Thompson, S. J. (2019). Supporting integrity of discrete trial teaching via tiered consultation: A pilot study. *Journal of Applied School Psychology, 35*(1), 52-74. https://doi.org/10.1080/15377903.2018.1493555

McWayne, C. M., Fantuzzo, J. W., & McDermott, P. A. (2004). Preschool competency in context: An investigation of the unique contribution of child competencies to early academic success. *Developmental Psychology, 40*(4), 633-645. https://doi.org/10.1037/0012-1649.40.4.633

Myers, D. M., Simonsen, B., & Sugai, G. (2011). Increasing teachers' use of praise with a response-to-intervention approach. *Education and Treatment of Children, 34*(1), 35-59. DOI: 10.1353/etc.2011.0004

National Center for Education and Statistics. (2020). *Prevalence of mental health services provided by public schools and limitation in schools' efforts to provide mental*

health services. Use, availability, and perceived harmfulness of opioids among youth (n. d.). Retrieved December 16, 2021 from https://nces.ed.gov/programs/coe/indicator/a23/school-mental-health-services#:~:text=The%20majority%20of%20schools%20(54,professionals%20as%20a%20major%20limitation.

O'Handley, R. D., Dufrene, B. A., & Whipple, H. (2018). Tactile prompting and weekly performance feedback for increasing teachers' behavior-specific praise. *Journal of Behavioral Education, 27*(3), 324-342. https://doi.org/10.1007/s10864-017-9283-6

Reinke, W. M., Stormont, M., Herman, K. C., Puri, R., & Goel, N. (2011). Supporting children's mental health in schools: Teacher perceptions of needs, roles, and barriers. *School Psychology Quarterly, 26*(1), 1-13. https://doi.org/10.1037/a0022714

Sanetti, L. M. H., & Collier-Meek, M. A. (2015). Data-driven delivery of implementation supports in a multi-tiered framework: A pilot study. *Psychology in the Schools, 52*(8), 815-828. https://doi.org/10.1002/pits.21861

Sanetti, L. M. H., Collier-Meek, M. A., Long, A. C. J., Kim, J., & Kratochwill, T. R. (2014). Using implementation planning to increase teachers' adherence and quality to behavior support plans. *Psychology in the Schools, 51*(8), 879–895. https://doi.org/10.1002/pits.21787

Sanetti, L. M. H., Fallon, L. M., & Collier-Meek, M. A. (2013). Increasing teacher treatment integrity through performance feedback provided by school personnel. *Psychology in the Schools, 50*, 134 – 150. https://doi.org/10.1002/pits.21664

Sanetti, L. M. H., & Kratochwill, T. R. (2009a). Toward developing a science of treatment integrity: Introduction to the special series. *School Psychology Review, 38*(4), 445-459.

Sanetti, L. M. H., & Kratochwill, T. R. (2009b). Treatment integrity assessment in the schools: An evaluation of the Treatment Integrity Planning Protocol. *School Psychology Quarterly, 24,* 24-35. https://doi.org/10.1037/a0015431

Sanetti, L. M. H., Kratochwill, T. R., Collier-Meek, M. A., & Long, A. C. J. (2014). PRIME: Planning realistic implementation and maintenance by educators. University of Connecticut. https://implementationscience.uconn.edu/wp-content/uploads/sites/1115/2014/12/PRIME_quickguide_problem-solving_consultation.pdf

Sanetti, L.M. H., Luiselli, J. K., & Handler, M. W. (2007). Effects of verbal and graphic performance feedback on behavior support plan implementation in a public elementary school. *Behavior Modification, 31*, 454 – 465. https://doi.org/10.1177/0145445506297583

Simonsen, B., MacSuga-Gage, A. S., Briere, D. E., Freeman, J., Myers, D., Scott, T. M., & Sugai, G. (2014). Multitiered support framework for teachers' classroom management practices: Overview and case study of building the triangle

for teachers. *Journal of Positive Behavior Interventions, 16*(3), 179-190. https://doi.org/10.1177/1098300713484062

Simonsen, B., MacSuga, A. S., Fallon, L. M., & Sugai, G. (2013). The effects of self-monitoring on teachers' use of specific praise. *Journal of Positive Behavior Interventions, 15*(4), 231-241. https://doi.org/10.1177/1098300712440453

Snell, M. E., Berlin, R. A., Voorhees, M. D., Stanton-Chapman, T. L., & Hadden, S. (2012). A survey of preschool staff concerning problem behavior and its prevention in Head Start classrooms. *Journal of Positive Behavior Interventions, 14*(2), 96-107. https://doi.org/10.1177/1098300711416818

Steed, E. A., & Webb, M. Y. L. (2013). The psychometric properties of the preschool-wide evaluation tool (PreSET). *Journal of Positive Behavior Interventions, 15*(4), 231-241. https://doi.org/10.1177/1098300712459357

Sterling-Turner, H. E., Watson, T. S., & Moore, J. W. (2002). The effects of direct training and treatment integrity on treatment outcomes in school consultation. *School Psychology Quarterly, 17,* 47-77. https://doi.org/10.1521/scpq.17.1.47.19906

Stormont, M. A., Smith, S. C., & Lewis, T. J. (2007). Teacher implementation of precorrection and praise statements in Head Start classrooms as a component of program-wide system of positive behavior support. *Journal of Behavioral Education, 16*(3), 280-290. DOI: 10.1007/s10864-007-9040-3

Thompson, M. T., Marchant, M., Anderson, D., Prater, M. A., & Gibb, G. (2012). Effects of tiered training on general educators' use of specific praise. *Education and Treatment of Children, 35*(4), 521-546. DOI: 10.1353/etc.2012.0032

Tiano, J. D., & McNeil, C. B. (2006). Training Head Start teachers in behavior management using Parent-Child Interaction Therapy: A preliminary investigation. *Journal of Early and Intensive Behavior Intervention, 3*(2), 220-233. https://doi.org/10.1037/h0100334

Trevisan, M. S. (2004). Practical training in evaluation: A review of the literature. *American Journal of Evaluation, 25*(2), 255-272. https://doi.org/10.1177/109821400402500212

Tschannen-Moran, M., & McMaster, P. (2009). Sources of self-efficacy: Four professional development formats and their relationship to self-efficacy and implementation of a new teaching strategy. *The Elementary School Journal, 110*(2), 228-245. https://doi.org/10.1086/605771

Wichstrom, L., Berg-Nielsen, T. S., Angold, A., Egger, H. L., Solheim, E., & Sween, T. H. (2012). Prevalence of psychiatric disorders in preschoolers. *The Journal of Child Psychology and Psychiatry, 53*(6), 695-705. https://doi.org/10.1111/j.1469-7610.2011.02514.x