

Gracias por Mirarme: Training Preschool Teachers to Use Linguistically Adapt Behavior-Specific Praise

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Abstract

Young children's engagement with teachers and classroom activities is critical for promoting behavioral, academic, and social-emotional outcomes. However, this is difficult for children who have not mastered the primary language used in early childhood education settings (i.e., Multilingual Learners). Incorporating a child's primary language into ongoing classroom activities via behavior-specific praise may be one strategy that is beneficial for promoting Multilingual Learners' engagement. However, teachers often require support in the implementation of effective classroom management techniques. The current study used a multiple-baseline design across three Head-Start teachers to test the effects of in situ training followed by goal setting for increasing teachers' BSP in Spanish and English and concomitant effects on class-wide and a target Multilingual Learners' engagement and disruptive behavior. Results indicated that all three teachers increased their use of BSP in Spanish and English, with improvements in class-wide and target Multilingual Learners' outcomes. Results, limitations, and implications are discussed.

Introduction

Children who participate in early childhood education programs experience many benefits, such as enhanced social-emotional, behavioral, and cognitive outcomes (Bick & Nelson, 2017; McWayne et al., 2004). Many of these benefits are facilitated through positive interactions with classroom peers and teachers (Van Craeyevelt et al., 2017) and engagement in classroom activities (Williford et al., 2013). In particular, engagement is of critical importance as children may not experience the aforementioned positive outcomes, which would likely impact school readiness. Engagement is a broad term that encompasses several domains, such as involvement with academic tasks, time on task, use of learning strategies, and participation with teachers and peers (Fredricks et al., 2004). However, any of these forms of engagement are likely difficult for children whose language is different from that of their teachers and peers.

Multilingual Learners

In educational settings, Multilingual Learners (MLLs) are children whose home language is not English and who are in the process of learning English (Genesee et al., 2005). Learning a new language in school, while simultaneously learning new academic content presents unique challenges that can affect students long-term. For example, MLLs tend to have lower academic achievement, regardless of subject and grade level (Abedi & Dietel, 2004; Calderón et al., 2011; Collier & Thomas, 2009), and are less likely to graduate high school (Frazier, 2013; Jaquith, 2023) compared to their English-speaking peers. Moreover, many educational agencies do not have the necessary supports to address MLLs' academic achievement, further perpetuating these issues (Calderon et al., 2011). This achievement gap and lack of resources to address it underlines a clear need for teacher-delivered strategies to create a learning environment that fosters a sense of belonging and engagement.

One approach to potentially address this gap is to promote MLLs' engagement with peers, teachers, and classroom activities. For MLLs, engagement is associated with several positive outcomes, such as improved academic skills, greater confidence, development of social competence, and an increased sense of belonging (Mercer, 2019; Park, 2014). Moreover, MLLs' engagement has also been found to lead to secondary language acquisition (Henry & Thorsen, 2020). Given these positive outcomes, teachers implementing practices that increase preschool-age MLLs' engagement may serve to promote these positive outcomes early, allowing for later academic success. However, MLLs research in early childhood education settings has focused more on children's secondary language acquisition as opposed to strategies to promote engagement with peers, teachers, and classroom activities (Markova, 2017; Schwartz & Deeb, 2021). Therefore, research examining strategies to promote young children's engagement in early childhood education settings is needed.

One possible strategy to promote MLLs' engagement is to integrate their primary language into classroom activities, as conceptual knowledge development in the primary language helps increase comprehension of what is heard in the secondary language, enabling a positive transfer of knowledge between the first and second language (Cummins, 2000). However, this is difficult if teachers are unable to speak a child's primary language. As such, there is a need for strategies to help teachers feasibly integrate an MLLs' primary language into day-to-day classroom activities. One relatively simple, empirically supported strategy to be considered for helping improve MLLs' engagement is behavior-specific praise (BSP).

Teacher-delivered Behavior-specific Praise

Praise involves delivering a statement of approval or admiration in response to a child's display of desirable behavior and can be general or behavior-specific (Brophy, 1981). General praise involves delivering a statement of approval without labeling a specific action (e.g., "Good job!"), while BSP involves labeling the behavior that is being praised, contingent upon a child engaging in a desired behavior (e.g., "Thank you for raising your hand!", "I like the way you are sitting quietly!"). BSP is considered superior to general praise as it allows a child to discriminate the behavior for which they are receiving praise and therefore increases the likelihood that the behavior occurs more frequently in the future (Brophy, 1981). Teacher-delivered BSP has consistently been found to be effective for improving a variety of positive outcomes in early childhood education settings (Dufrene et al., 2012; Fullerton et al., 2009; Gorton et al., 2022; LaBrot et al., 2020, 2021), including increased engagement (Gorton et al., 2022; LaBrot et al., 2020, 2021). Clay (2015) suggested that BSP delivered in MLLs primary language may be more effective at promoting appropriate behavior as there could be a stronger learning history of praise in the primary language (i.e., conditioned reinforcer) being paired with unconditioned reinforcers in the home environment where the primary language is spoken. Given the documented effects of BSP on engagement and the potential benefits of incorporating children's primary language into instruction, delivering BSP in an MLL's primary language may represent a promising strategy for increasing engaging with classroom activities while reducing behavioral difficulties associated with off-task behavior.

Despite its relative simplicity and effectiveness, research suggests that early childhood educators inconsistently deliver BSP (Floress et al., 2017). To our knowledge, educators' rates of BSP in a child's primary language other than English has not been researched and, therefore, little is known about how it is naturally incorporated. However, it stands to reason that teachers likely deliver substantially lower rates of BSP in an MLLs' primary language, if at all. As such, early childhood educators are already in need of support to consistently deliver BSP and certainly are in need of support to learn to deliver BSP in an MLLs' primary language.

Direct Behavioral Consultation

Behavioral Consultation (AKA, Problem-solving Consultation; Feldman & Kratochwill, 2003) has a longstanding history as an effective modality to support teachers' implementation of various evidence-based practices (Busse et al., 1999; Mautone et al., 2006; Noell et al., 2002; Sheridan et al., 1996). Behavioral Consultation is a four-stage problem solving process that includes problem identification, problem analysis, plan implementation, and plan evaluation (Kratochwill & Bergan, 1990). Although widely tested and implemented, Behavioral Consultation has been criticized for relying upon mostly verbal interactions between consultants and educators (Watson & Sterling-Turner, 2008). Although this may be beneficial for some educators, others may require more direct support during ongoing classroom activities. This may be especially true for training educators to deliver BSP in an MLLs' primary language in a contextually meaningful way. That is, educators may require specific prompting to know how and when to deliver BSP in an MLLs' primary language.

As an alternative to traditional Behavioral Consultation, Direct Behavioral Consultation has been proposed to more directly support teachers' evidence-based practice delivery (Watson & Sterling-Turner, 2008). DBC includes the same four stages as Behavioral Consultation but involves training teachers to deliver evidence-based practices during ongoing classroom activities. To date, the most common DBC implementation support modality includes use of a bug-in-the-ear (BITE) device to prompt educators to deliver evidence-based practices in real time, referred to as in situ training (Dufrene et al., 2012, 2014; LaBrot et al., 2016, 2021, 2024a; O'Handley et al., 2022; Taber et al., 2020).

For example, Dufrene et al. (2012) found that in situ was effective for increasing early childhood educators' use of BSP and effective instruction delivery, with accompanying decreases in children's challenging classroom behaviors. LaBrot et al. (2016) also found that in situ training was effective for increasing early childhood educators' rates of praise (both general and BSP collapsed together), although child data were not collected. LaBrot et al. (2021) and LaBrot et al. (2024a) extended the DBC literature further by examining in situ training's effects on early childhood educators' generalized outcomes. LaBrot et al. (2021) examined the effects of in situ training for increasing four Head Start teachers' rates of BSP and found that it resulted in increased BSP in both target and generalization settings. Moreover, results indicated improved child outcomes in both target and generalization settings as well. Similarly, LaBrot et al. (2024a) examined the effects of in situ training for teaching three early childhood educators to deliver effective instructions to promote children's instruction completion.

Results indicated that all three teachers improved their use of effective instruction delivery with children in target and generalization settings, with concomitant improvements in children's response to instructions in target and generalization settings. Collectively, these four studies demonstrate the effectiveness of in situ training as a DBC training modality for improving early childhood educators' evidence-based practices. However, there are collective limitations in this literature base that warrant discussion.

First, in situ training studies inconsistently collect social validity data. Given that use of a BITE device could be considered uncomfortable or invasive, continued assessment of educators' perceptions of the use of in situ training for addressing particular classroom problems is important. Second, research consistently indicates that educators' use of trained skills decrease following the removal of in situ training (Dufrene et al., 2012, 2014; LaBrot et al., 2016, 2021; Taber et al., 2020), with some skills even regressing back to baseline levels (Dufrene et al., 2014; LaBrot et al., 2016). There is a need for implementation support to prevent the decline of skills trained via in situ training. For example, proactive implementation supports like goal setting have been found to be both effective and feasible to promote educators' use of classroom management strategies (e.g., BSP; LaBrot et al. 2024b) and may serve to help educators maintain their use of skills trained via in situ training. Lastly, no research has examined the effects of in situ training for promoting educators' use of linguistically adaptive interventions (Dufrene et al., 2012, 2014; LaBrot et al., 2016, 2021, 2024a; O'Handley et al., 2022; Taber et al., 2020). Because in situ training is provided to educators during ongoing classroom activities, it may be an effective way to train educators in linguistically adapted interventions as it could allow educators to understand the context in which these interventions should be delivered. Moreover, linguistically adapted interventions are likely more difficult to learn and would therefore need more intensive training procedures, like those found in in situ training.

Study Purpose

Improving MLLs' engagement with educators, peers, and classroom activities may serve to improve academics, confidence, social competence, and sense of belonging (Mercer, 2019; Park, 2014). Delivering BSP in an MLLs' primary language may be an effective strategy to promote engagement. However, training educators to deliver BSP in an MLLs' primary language likely requires more in-depth and ongoing consultation and training to ensure mastery of BSP in a new language and appropriate use. In situ training may be an ideal strategy to prepare educators to deliver linguistically adapted BSP. As such, the purpose of this study is to examine the effects of in situ training for promoting educators' use of linguistically adapted BSP as well as BSP in English. This study also sought to address limitations of the in situ training literature by collecting social validity data and providing implementation supports to ensure educators maintained their rates of linguistically adapted and English BSP statements. Specifically, we targeted Spanish BSP as there was a high proportion of MLL children whose primary language was Spanish in the Head Start program in which study procedures occurred. This study sought to answer the following research questions:

1. Is there a functional relation between in situ training and an increase in preschool teachers' use of behavior-specific praise in Spanish and do rates maintain with goal setting?
2. Is there a functional relation between in situ training and an increase in preschool teachers' use of behavior-specific praise in English and do rates maintain with goal setting?
3. Is there a functional relation between preschool teachers' increased use of behavior-specific praise in Spanish and a target MLLs' display of appropriately engaged behavior and decreased disruptive behavior?
4. Is there a functional relation between preschool teachers' increased use of behavior-specific praise in English and class-wide children's display appropriately engaged and disruptive behavior?
5. Do preschool teachers' rate direct behavioral consultation procedures as socially valid?
6. Do preschool teachers' rate behavior-specific praise as socially valid?

Methods

Participants and Setting

Participants included three early childhood teachers, three Hispanic children who were MLLs (i.e., one per classroom), and the teachers' aggregate classroom children from a monolingual English Head Start agency located in a mid-sized city in the southeastern region of the US. The Head Start agencies demographics were as follows: 85% African American/Black, 7% White, 5% Latine, and 4% multi-racial. 3% of the children were MLLs. All three teachers were self-referred for consultation services to improve (1) MLLs' engagement with classroom activities and (2) aggregate classroom children's challenging behaviors (e.g., noncompliance with instructions, out-of-area), including the MLLs. Each participating classroom had 20 children, including one to four MLLs with varying levels of English-speaking skills. Participating teachers nominated an MLL for study participation based on their lack of engagement, limited English use/knowledge, and occasional display of challenging behaviors. MLLs' English proficiency was assessed by the lead researcher/behavior consultant via teacher and parent interviews and a 10 min direct interaction with the MLL to probe for English speaking and understanding. Parent interviews focused on whether there were individuals in the home who spoke English to the child, whether the child communicated with family members in English, and the parents' perceptions of the child's level of English understanding. Teacher interviews focused on the child's level of engagement with peers and classroom activities, as well as teachers' perceptions of the child's level of English understanding based on the child's ability to follow instructions and complete classroom tasks.

The first teacher-child dyad included Ms. Ashley and Camila (pseudonyms used throughout). Ms. Ashley was a 51-year-old African American female with a Bachelor of Arts in early childhood education and 18 years of teaching experience. Camila was a 5-year-old Latine female. The primary language spoken in Camila's home was Spanish. Camila understood some English but solely spoke Spanish. The second teacher-child dyad included Ms. Kim and Julio. Ms. Kim was a 34-year-old African American female with a Bachelor of Science in child development and 12 years of teaching experience. Julio was a 4-year-old Latine male. The only language spoken in Julio's home was Spanish; Julio understood some English but

solely spoke Spanish. The third teacher-child dyad included Ms. Laura and Pedro. Ms. Laura was a 31-year-old African American female; she has 4 years of teaching experience. Pedro was a 3-year-old Latino male. The primary language spoken in Pedro's home was Spanish. Pedro's siblings spoke to him in English and Spanish and Pedro occasionally spoke in English but mostly preferred to speak in Spanish. This study was approved by a university institutional review board. Teacher participants and target MLL's parents signed a consent form prior to the beginning of the study.

All study procedures occurred during circle time. Circle time involved teacher-led activities with all classroom children, and included reviewing basic concepts (e.g., colors, shapes, sight words). During circle time, children were expected to sit in an assigned spot in the classroom, sit "crisscross-applesauce," keep hands/feet to self, participate in the teacher-led activity (e.g., answer questions, sing songs, label), follow teacher instructions, and remain quiet while others spoke. Circle time lasted between 15 to 20 minutes.

The lead researcher served as the behavior consultant and led all study procedures. The lead researcher was a 28-year-old Latina female school psychology doctoral student whose primary language was Spanish but was also fluent in English. The lead researcher had previous training and experience in data collection and behavioral consultation. In addition to the lead researcher, data collectors included a 35-year-old White female, a 25-year-old Latina female, and a 45-year-old African female. All data collectors were school psychology doctoral students and had previous training in data collection procedures to a 90% agreement criterion. Additionally, secondary observers were trained in the formulation of Spanish BSP statements.

Materials

Bug-in-the-ear (BITE) Device

The BITE device was a one-way FM radio to provide verbal prompts. The BITE device included a transmitter with a small microphone and a receiver with an earbud.

Usage Rating Profile – Intervention Revised

The Usage Rating Profile-Intervention Revised (URP-IR; Chafouleas et al., 2011) is a self-report measure regarding potential facilitations and barriers to usage of an intervention and/or implementation support at the individual, intervention, and environmental levels. This instrument has demonstrated high internal consistency and reliability, with alpha coefficients ranging from 0.85 to 0.96. This measure contains 29 items rated on a scale of 1 (i.e., strongly disagree) to 6 (i.e., strongly agree). The URP-IR has six subscales: Acceptability, Understanding, Feasibility, Family-School Collaboration, System climate, and System Support (Briesch et al., 2013). In addition to the 29 items in the URP-IR, 5 additional questions were added with the purpose of assessing teacher acceptability of the DBC implementation supports (i.e., in situ training and goal setting) (e.g., DeFouw et al., 2025).

Spanish BSP Handout

A handout was given to each teacher that reviewed delivery of Spanish BSP to serve as an aid to remind teachers how to deliver BSP in Spanish. the handout included one general praise statement with a preposition (i.e., thank you for) with its translation (i.e., Gracias por) paired with three basic classroom expectations (i.e., listen, look, sit) translated to Spanish (i.e., escuchar, mirar, sentarse). This general praise statement, plus the preposition, plus the classroom expectations were used to formulate BSP statements in Spanish (e.g., Gracias por escuchar). The handout also included the pronunciation and correct conjugation of each word for the BSP statements in Spanish to be grammatically correct (e.g., mirar – look to an object/activity; mirarme – look to the teacher).

Audio Recording

The consultant shared an audio recording via email or text message (depending on the teacher's preference) that included her reading each of the words in the handout. This recording served as an aid for the teachers to reference the correct pronunciation of BSP statements in Spanish.

Dependent Measures and Data Collection Procedures

Aggregate BSP statements (i.e., Spanish and English) served as the primary dependent variable and thus served to inform phase change decisions. This was selected as the primary dependent variable to account for the fact that teachers requested assistance with learning effective strategies for all classroom children, including target MLLs. BSP statements in English were operationally defined as verbal statements of admiration/approval delivered by the educator contingent upon a child's, or group of children's, desired behavior that labeled the behavior being praised (e.g., "I like the way you are sitting so quietly", "Thank you for singing with me"; LaBrot et al., 2021). BSP statements in Spanish included the following elements: (1) a general praise statement in Spanish (i.e., Gracias), (2) the preposition (i.e., por), and (3) one classroom expectation (i.e., listening – escuchar, looking – mirar/mirarme, and sitting – sentarse). Therefore, BSP statements in Spanish included "Gracias por escuchar," "Gracias por mirar," "Gracias por mirarme," and "Gracias por sentarte." In order for a BSP statement in Spanish to be counted toward the aggregate rate, both the pronunciation and the grammar of the statement must have been correct.

Appropriately engaged (AEB) and disruptive behavior (DB) of classroom children and the target MLLs served as secondary dependent variables. AEB was defined as a child actively engaged (e.g., looking at or manipulating objects related to task demand, clapping hands to the music, answering questions, repeating words) in a designated classroom activity with their eyes and body oriented towards the teacher or activity (LaBrot et al., 2021). DB included non-compliance (i.e., failure to initiate a teacher request within five seconds of delivery), inappropriate vocalizations (i.e., cursing, speaking without permission, and speaking at a volume inappropriate for a classroom), out-of-area (i.e., two or more feet outside of a specified area), and playing with objects unrelated to the task-demand (LaBrot et al., 2021).

Observations were conducted between three and five days per week. Observers recorded teachers' rates of BSP using an event recording procedures in which frequency of Spanish and English BSP statements

within 10 sec intervals was recorded and then converted to a rate-based measure and reported as number of Spanish and English BSP statements per minute during 10 min observation sessions. Observers recorded children's display of AEB and DB using momentary time sampling (Radley et al., 2015) in 10 sec intervals and were reported as percentage of intervals occurrence for classroom children and the target MLL separately. Six English-speaking children were randomly selected to observe on a given observation session. The target MLL was observed every other interval, interspersed with the English-speaking children; therefore, seven children's behaviors were recorded within a session (i.e., six English-speaking and the target MLL). This observation included a fixed pattern rotation interspersing between the English-speaking children and the target MLL; this rotation continued until the end of the observation. Teachers' rates of BSP statements and children's display of AEB and DB were collected concurrently.

Social Validity

Each educator was provided with a paper-pen version of the URP-IR on the last day of the goal setting phase to collect social validity data on in situ training, goal setting, and BSP.

Experimental Design, Phase Change Decision, and Data Analysis

This study utilized a nonconcurrent multiple baseline design (Harvey et al., 2004) to evaluate the effects of in situ training on teachers' rates of Spanish and English BSP statements. Specifically, this design included the following phases: (A) baseline, (B) in situ training, and (C) goal setting. Phase change decisions from baseline to in situ training were made if a teachers' aggregate rate of BSP was below .5 BSP statements per minute (LaBrot et al., 2021) for at least three nonconsecutive data points. Additionally, baseline lengths had to meet a minimum number of data points (i.e., 3, 5, and 7); only three data points were needed in the first baseline phase as the What Works Clearinghouse (2022) indicate that multiple baseline designs only require three baseline data points if there is zero variability, with a concomitant minimum two data point stagger across other baseline phases.

Data were analyzed visually for changes in trend, level, variability, immediacy of effects, portion of overlapped data, and consistency of data patterns (Horner et al., 2005). Baseline Corrected Tau (BC-Tau; Pustejovsky et al., 2023) was used to measure the consistency of the intervention effect. BC-Tau examines non-overlap of data points and corrects for baseline trends when appropriate (Tarlow, 2017). Scores from 0 to .20 indicate small effects, scores from .20 to .60 indicate moderate effects, scores from .60 to .80 indicate large effects, and scores above .80 indicate very large effects (Vannest & Ninci, 2015).

Procedures

Initial Direct Behavioral Consultation Procedures and Screening

The first two stages of DBC (i.e., problem identification and analysis) occurred prior to data collection (LaBrot et al., 2024a). During the Problem Identification stage, the consultant met with the center

administrator who expressed the need for assistance with strategies to increase MLLs' engagement. Subsequently, during teacher interviews, they indicated the need to increase the target MLLs' engagement during teacher-led activities (i.e., circle time) and defined non-engagement during those activities. The consultant and the teachers jointly decided that learning strategies to increase children's engagement applicable for both English- and Spanish-speaking children would be beneficial. During the Problem Analysis stage, the consultant conducted classroom observations during circle time and noted that teacher participants were not providing BSP at an appropriate rate (i.e., 0.5 BSP statements per minute) and were not providing BSP statements in Spanish to MLLs. This observation served as the screening, which resulted in all three teacher participants screening into the study. Teachers agreed that in situ training to learn how to deliver BSP statements both in English and Spanish during ongoing classroom activities would be more beneficial than receiving indirect consultative strategies. Moreover, the consultant and teachers agreed upon use of goal setting as a strategy to fade implementation support and maintain rates of BSP.

Baseline

During baseline, the behavior consultant did not deliver prompts, instructions, or feedback on BSP delivery or classroom management. Data collectors sat in an unobtrusive area of the classroom to collect data and did not interact with teachers or children.

Pre-training for Spanish BSP

Prior to implementing in situ training, the consultant introduced the teacher handout with the three classroom expectations and their corresponding Spanish BSP statements and their pronunciation. The consultant used behavioral skills training to train the teachers on the pronunciation of each word in the handout (Kirkpatrick et al., 2019). Following the introduction of the handout, the consultant modeled the pronunciation of each word to the teacher and allowed the teacher to practice and receive feedback until they were able to say each Spanish BSP statement correctly two times. This training lasted between five to seven minutes for each teacher. At the conclusion of training, teachers were provided with an audio recording with the correct pronunciation of each word in the handout. Teachers were informed they could reference the handouts at any point during remaining study procedures.

In Situ Training

During the in situ training phase, teachers were prompted to deliver one BSP statement per minute (e.g., LaBrot et al., 2016, 2021), interspersing between English and Spanish every other minute. The consultant sat in a location that was unobtrusive and used a timer to determine one-minute intervals. For each interval, the consultant scanned the room and identified a child (i.e., English-speaking for English BSP and MLL for Spanish) engaged in one of the three behaviors included in the teacher handout and prompted the teacher to deliver a language specific BSP statement, based on the child being praised. The teacher was then prompted to repeated, verbatim, the BSP statement. BSP statements in Spanish were directed to all MLL children in the classroom, not just the target ELL, to ensure all MLL children had

access to BSP. No feedback was provided during in situ training; rather, teachers were prompted to deliver praise in the exact manner given by the consultant.

Goal Setting

The goal setting phase began on the first school day following in situ training. The consultant met with each teacher and explained to them that providing at least one BSP statement per two min on average (i.e., 0.5 BSP statements per minute) can result in improvement of child behavior (LaBrot et al., 2020, 2021). Then each teacher was asked to set a goal for the number of aggregate BSP statements (i.e., including at least one BSP statement in Spanish) equal to or higher than 0.5 BSP statements per min. Ms. Ashley set her goal at six BSP statements during the 10-min observation with at least one of the BSP statements in Spanish. Ms. Kim set her goal at five BSP statements during the 10-min observation with at least one BSP statement in Spanish. Ms. Laura set her goal at five BSP statements during the 10-min observation with at least three BSP statements in Spanish. Teachers did not receive any prompts or feedback during the goal setting phase. After one session of this phase, Ms. Kim withdrew from the study due to competing professional responsibilities and the demands associated with implementing the study procedures alongside regular classroom duties.

Interobserver Agreement and Procedural Integrity

To evaluate interobserver agreement (IOA), the consultant and a secondary observer collected data simultaneously. IOA data were collected for observation sessions for all dependent variables across all phases. Agreement for teacher use of BSP was calculated by dividing the number of agreed upon BSP statements within intervals by the number of agreed and disagreed upon BSP statements within intervals and multiplying the quotient by 100. Agreement for class wide's and target child's display AEB and DB was calculated by dividing the number of agreed intervals with AEB and DB by the number of agreed and disagreed upon intervals with AEB and DB and multiplying the quotient by 100. IOA for rate of BSP and percentage of AEB and DB in Ms. Ashley's class were collected for 23% of data collection sessions across all phases, with a mean agreement of 100%. Mean IOA across phases was 98% (range: 97%-100%) for class wide and 98% for target child behavior across phases. IOA for rate of BSP and percentage of AEB and DB in Ms. Kim's class were collected for 36% of data collection sessions across all phases, with a mean agreement of 100%. Mean IOA for class wide and target child behavior across phases was 99% (range: 97% - 100%). IOA for rate of BSP in Ms. Laura's class were collected for 29% of data collection sessions across all phases, with a mean agreement of 100%. Mean IOA for class wide and target MLL children across phases was 99% (range: 97% -100%).

Procedural integrity data were collected for all phases using checklists and was evaluated for 100% of observations across all conditions and was 100% for each participating classroom. Procedural integrity was calculated by dividing the number of steps completed accurately by the total number of steps on the checklist and multiplying the quotient by 100. IOA for procedural integrity was calculated by dividing the number of agreed upon steps by the number of agreed and disagreed upon steps and multiplying the

quotient by 100. IOA for procedural integrity data were collected for 23%, 36% and 29% of observations for Ms. Ashley, Ms. Kim, and Ms. Laura, respectively, with agreement of 100% for all.

Results

See Figure 1 for graphical display of teachers' rate of Spanish, English, and aggregate BSP statements. See Figure 2 for graphical display of the target MLLs and aggregate classroom children's display of AEB and DB. See Table 1 for social validity data.

Ms. Ashley

During baseline, Ms. Ashley's rates of BSP in both English and Spanish were 0 for all observations. Mean rate of aggregate BSP was 0 for the baseline phase. Upon implementation of in situ training, Ms. Ashley's BSP rate increased both in English ($M = 0.6$; range: 0.5-0.8) and Spanish ($M = 0.5$; range: 0.5-0.6). Mean rate of aggregate BSP increased during the in situ training phase was 1.2 (range: 1-1.3). Furthermore, Ms. Ashley's rates of BSP in the goal setting phase remained above baseline levels both in English ($M = 0.5$; range: 0.4-0.5) and Spanish ($M = 0.1$; range: 0.1-0.2). Rate of aggregate BSP during the goal setting phase remained above baseline levels ($M = 0.6$; range: 0.5-0.7). The BC-Tau effect sizes for Ms. Ashley's use of BSP in English, Spanish, and aggregate BSP were very large (1.00).

Ms. Kim

During baseline, Ms. Kim's rates of BSP in both English and Spanish were 0 for all observations. Mean rate of aggregate BSP was 0 for the baseline phase. Upon implementation of in situ training, Ms. Kim's BSP rate increased both in English ($M = 0.7$; range: 0.5-1) and Spanish ($M = 0.5$; range: 0.4-0.5). Mean rate of aggregate BSP during the in situ training phase was 1.2 (range: 1-1.5). Furthermore, one datum was collected for Ms. Kim during the goal setting phase. Ms. Kim's rate of BSP during this observation was 0.6 in English and 0.3 in Spanish. Rate of aggregate BSP during this observation was 0.9. The BC-Tau effect sizes for Ms. Kim's use of BSP in English, Spanish, and aggregate BSP were very large (1.00).

Ms. Laura

During baseline, Ms. Laura's rates of BSP were low and stable in both English ($M = 0.1$; range: 0-0.2) and Spanish ($M = 0$). Mean rate of aggregate BSP was 0.1 (range: 0-0.2) for the baseline phase. Upon implementation of in situ training, Ms. Laura's BSP rate increased both in English ($M = 1.4$; range: 1.2-1.8) and Spanish ($M = 0.5$). Mean rate of aggregate BSP during the in situ training phase was 1.9 (range: 1.7-2.3). Furthermore, Ms. Laura's rates of BSP in the goal setting phase remained above baseline levels both in English ($M = 0.7$; range: 0.3-1) and Spanish ($M = 0.3$; range: 0.3-0.4). Mean rate of aggregate BSP during the goal setting phase was 1.1 (range: 0.7-1.3). The BC-Tau effect sizes for Ms. Laura's use of BSP in English, Spanish, and aggregate BSP were very large (1.00).

Ms. Ashley's Classroom and Camila

During baseline, class-wide mean display of AEB and DB was 66.3% (range: 53% - 73%) and 30.3% (range: 27% - 37%), respectively. Camila's mean display of AEB and DB was 55.7% (range: 47% - 67%) and 33.3% (range: 30% - 37%) with clear increasing and decreasing trends, respectively. Upon implementation of in situ training, a substantial increase in class-wide display of AEB ($M = 85.2\%$; range: 73% - 93%) and a substantial decrease in display of DB ($M = 11.4\%$; range: 7% - 23%) was observed with some variability. Likewise, an immediate increase in Camila's display of AEB ($M = 85.4\%$; range: 77% - 93%) and decrease in DB ($M = 5.2\%$; range: 0% - 13%) was observed. During the goal setting phase, high levels of class-wide display of AEB ($M = 86.6\%$; range: 73% - 93%) and low levels of DB ($M = 6\%$; range: 3% - 10%) were maintained. Camila's display of AEB initially decreased but eventually stabilized at high levels ($M = 82\%$; range: 63% - 90%) while her display of DB generally remained below baseline levels ($M = 9.4\%$; range: 0% - 27%). The BC-Tau effect sizes for Ms. Ashley's Classroom's AEB were very large for both class-wide (0.87) and Camila's (0.93) behavior. BC-Tau effect sizes for Ms. Ashley's Classroom DB were very large (1.00) for class-wide and Camila's behavior.

Ms. Kim's Classroom and Julio

During baseline, class-wide display of AEB and DB demonstrated variability with mean percentages of 52.6% (range: 40%-70%) and 34% (range: 7%-53%), respectively. Julio's display of AEB and DB was somewhat variable with mean percentages of 56.6% (range: 50%-67%) and 24% (range: 17%-33%), respectively. Upon implementation of in situ training, an immediate increase in class-wide display of AEB ($M = 92.2\%$; range: 83% - 97%) and decrease in DB ($M = 6.4\%$; range: 0% - 13%) was observed. Julio's display of AEB and DB were variable, with means of 84.6% (range: 77%-93%) and 12.2% (range: 7%-20%), respectively. For the only available observation during the goal setting phase, class-wide display of AEB remained high at 93%, while display of DB remained low at 7%. Julio's display of AEB reached 97% while display of DB was 3%. The BC-Tau effect sizes for Ms. Kim's classroom's display of AEB (1.00) and DB (0.83) were both very large. The BC-Tau effect sizes for Julio's display of AEB (1.00) and DB (0.87) were also both very large.

Ms. Laura's Classroom and Pedro

During baseline, class-wide display of AEB and DB was highly variable with mean percentages of 64.4% (range: 40%-80%) and 23.7% (range: 13%-43%), respectively. Pedro's display of AEB and DB was also variable with mean percentages of 57.4% (range: 43%-76%) and 28.7% (range: 20%-47%), respectively. Upon implementation of in situ training, an increase in class-wide display of AEB ($M = 86.6\%$; range: 73% - 97%) and decrease in DB ($M = 8\%$; range: 3% - 20%) were observed. Pedro's mean display of AEB and DB during this phase was 88.6% (range: 80% - 93%) and 7.2% (range: 3% - 13%), respectively. During the goal setting phase, class-wide display of AEB remained high ($M = 88.6\%$; range: 73% - 97%), while display of DB remained low and stable ($M = 4\%$; range: 0% - 10%). Similarly, Pedro's display of AEB remained high ($M = 85.4\%$; range: 77% - 90%), while display of DB remained low and stable ($M = 2.6\%$; range: 0% - 7%). The BC-Tau effect sizes for Ms. Laura's classrooms display of AEB (0.91) and DB (0.93) were very large. The BC-Tau effect sizes for Pedro's display of AEB (0.99) and DB (1.00) were also very large.

Social Validity

Results of the URP-IR indicated that all teacher participants found BSP in English and Spanish to be acceptable ($M= 4.9$), easy to understand ($M= 5$), and a good fit with their system ($M= 4.9$). Ms. Kim's ratings for in situ training and goal setting were lower than the other teachers. Ms. Ashley and Ms. Laura found in situ training to be acceptable ($M= 3.5$), easy to understand ($M= 4$), and feasible ($M= 3.7$). Ms. Ashley and Ms. Laura found goal setting to be acceptable ($M= 3.8$), easy to understand ($M= 4.3$), and feasible ($M= 3.7$). Teachers generally reported that goal setting required relatively little system-level support for implementation.

Discussion

Students who are learning English while simultaneously learning new academic content may encounter barriers (educational and linguistic) that impact their academic performance and participation in school activities (Abedi & Dietel, 2004; Calderón et al., 2011; Collier & Thomas, 2009). However, increasing MLLs' engagement with peers, teachers, and classroom activities has positive effects in school performance and sense of belonging (Mercer, 2019; Park, 2014). One approach that may be helpful in promoting engagement is incorporating an MLLs' primary language into classroom activities. As such, the purpose of this study was to evaluate the effects of in situ training for training teachers to deliver BSP, a simple and effective behavior management strategy in an MLLs' primary language to determine its impact on MLLs' engagement. Secondarily, this study also sought to expand the literature by replicating previous research examining the effects of in situ training on early childhood educators' rates of BSP statements in English with aggregate classroom children.

The first research question asked whether there was a functional relation between in situ training and teachers' use of BSP statements in Spanish and whether rates maintained with goal setting. Results of this study indicate that in situ training resulted in immediate and sustained increases in Spanish BSP statements. This is to be expected, as in situ training involves directly prompting teachers to deliver BSP statements, which has also been consistently found in the literature (Dufrene et al, 2012; LaBrot et al., 2016, 2021). Upon removal of in situ training, a less intensive implementation support, goal setting, was implemented in which rates of Spanish BSP statements remained above baseline levels. Ms. Ashley's and Ms. Laura's rate of Spanish BSP decreased to a range of one to two and three to four statements respectively in a 10 min period; however, this remained above baseline and was consistently delivered. Ms. Kim withdrew from the study prior to completing the goal setting phase, so the extent to which she would have maintained her rate of Spanish BSP statements is unknown. Regardless, her single data point was above baseline levels. Given how immersive it is, in situ training may not always be necessary for training educators to use BSP; however, learning to deliver BSP in a different language likely requires additional practice and implementation support. In situ training is one effective modality to train BSP in novel languages so educators can learn how to deliver BSP statements and in appropriate contexts. As such, these results offer novel and important findings that extend the literature, as this was the first study to demonstrate that in situ training is effective for promoting teachers' use of Spanish BSP.

The second research question asked whether there was a functional relation between in situ training and teachers' use of BSP statements in English and whether rates maintained with goal setting. Results indicated that all three teachers increased their rates of BSP during in situ training and maintained rates above baseline levels during the goal setting phase. This is unsurprising, as previous research suggests that in situ training results in early childhood educators' increased rates of BSP that generally maintain over time (Dufrene et al., 2012; LaBrot et al., 2016, 2021). More importantly, results of this study indicated that teachers were able deliver high rates of BSP in English while also delivering them in Spanish. This may suggest that training educators to deliver BSP in both English and Spanish does not necessarily reduce capacity to deliver English BSP to non-MLLs. As such, consultants may more confidently consider training educators to deliver BSP in MLLs' primary language given that it does not necessarily detract support for other classroom children. Related to the first two research questions, results of this study found that teachers' aggregate use of English and Spanish BSP statements increased during in situ training and maintained at high rates above baseline levels during the goal setting phase. Again, this is unsurprising as research suggests in situ training is beneficial for increasing and improving early childhood educators' use of classroom management practices (Dufrene et al., 2012; LaBrot et al., 2016, 2021, 2024a).

The third research question asked whether there was a functional relation between teachers' increased use of Spanish BSP statements and MLLs' display of AEB and DB. Results indicated that all three MLLs' display of AEB increased to high and relatively stable levels, that generally maintained above baseline levels during the goal setting phase. Likewise, the MLLs' display of DB decreased and remained relatively low and stable across phases. This is somewhat commensurate with previous research that suggests that young children's behaviors improve when early childhood educators increase their rates of BSP in response to in situ training (Dufrene et al., 2012; LaBrot et al., 2021). However, these results offer novel and critically important contributions to the literature.

Specifically, as far as we are aware, this is the first study to examine a linguistically adapted Spanish BSP and its association with improved engagement among MLLs in monolingual English educational settings. This is crucial, as promoting and reinforcing engagement and appropriate classroom behaviors early can result in improved academic outcomes in later schooling (Lindström et al., 2021). This is especially important given persistent disparities in achievement outcomes between MLLs and their English-speaking peers (Abedi & Dietel, 2004; Calderón et al., 2011; Collier & Thomas, 2009). This could also potentially improve MLLs' secondary language acquisition (Henry & Thorsen, 2020). However, more research to substantiate these hypotheses is needed. Given the relative simplicity of delivering BSP, even with training required to do so in an MLLs' primary language, results of the MLLs' display of AEB and DB is a particularly impactful finding in this study.

Relatedly, the fourth research question asked whether there was a functional relation between teachers' increased use of English BSP statements and aggregate class-wide display AEB and DB. Results of this study found that teachers' increased use of BSP led to consistent and relatively stable improvements in class-wide behavior. This is commensurate with previous research that demonstrates that early

childhood educators' increased use of classroom management strategies trained via in situ training results in improved outcomes for classroom children (Dufrene et al., 2012; LaBrot et al., 2021, 2024a). Although this alone is not a novel finding on its own, it does extend the literature by replicating previous research.

Finally, the fifth and sixth research questions asked whether teachers found DBC (i.e., in situ training and goal setting) and Spanish and English BSP to be socially valid consultation and behavior change procedures, respectively. Ms. Ashley and Ms. Laura found in situ training to be acceptable, easy to understand, and feasible. Ms. Laura verbally reported that she did not like having the device in her ear but indicated that it helped her recognize when to use the BSP statements in Spanish. Conversely, Ms. Kim's ratings for the acceptability, understanding, and feasibility of in situ training were considerably lower. Ms. Kim withdrew from the study, reporting that her demands in the classroom became overwhelming during the time of the study which could indicate that some teachers may prefer less intrusive implementation supports. This finding is inconsistent with previous research that suggests early childhood educators find in situ training to be a socially acceptable training procedures (LaBrot et al., 2021, 2024a). However, it is anticipated as in situ training can be invasive (e.g., wearing BITE device, consultant in the classroom) and resource and time intensive (e.g., setting up BITE device). Similarly, Ms. Ashley and Ms. Laura found goal setting to be acceptable, easy to understand and feasible. Conversely, Ms. Kim's ratings of acceptability and feasibility were lower. Again, Ms. Kim may have found DBC procedures overall to be overwhelming and invasive.

Results on the URP-IR indicated all teacher participants found Spanish and English BSP to be social valid behavior change strategies. Anecdotally, Ms. Ashley reported to the primary investigator that she believed Spanish BSP was simple and noticed changes in not only the target MLL, but the other MLLs as well. Similarly, Ms. Laura reported that she liked how the target MLL in her classroom responded to Spanish BSP statements (e.g., smiling, looking at her). Additionally, Ms. Laura requested for the consultant to create a second handout with another set of BSP statements and additional phrases in Spanish (e.g., "good morning", "good job") to more effectively engage MLLs in her classroom. These results are commensurate with previous research that suggests educators find BSP to be a socially valid behavior change strategy (Ennis et al., 2020). However, these results extend the literature in that teachers' reported value and enthusiasm in implementing Spanish BSP statements. This is important, as it suggests that teachers are not only willing to learn to use an MLLs' primary language, but actively want to incorporate it into day-to-day classroom practices to better engage their MLLs.

Limitations and Future Directions

Although this study extends the literature in several important ways, there are limitations that warrant discussion. Perhaps the most obvious limitation is Ms. Kim's withdrawal from the study. The most important aspect of in situ training is whether teachers maintain the taught classroom management technique following removal of in situ training. Although the only data points in the goal setting phase demonstrated a clear intervention effect, absence of further data makes it uncertain whether Ms. Kim's

Spanish and English BSP rates would have maintained. This, overall, limits the ability to draw firmer conclusions about the extent of this study's external validity. It could imply that, although effective, in situ training is burdensome. As such, replications of this study to verify its effects are needed. Second, the fact that we did not use a standardized measure to determine MLL's language proficiency is an important limitation. Nevertheless, the lead researcher in this study was a native Spanish speaker who was also fluent in English. Language proficiency was assessed by direct interactions between the lead researcher and the MLLs, as well as by interviewing the MLLs' parents and teachers. Replications of this study should consider using standardized measures of language proficiency when possible.

Third, DBC procedures included multiple components, such as the pre-training to train teachers the pronunciation of the words to formulate the Spanish BSP statements, handouts, audio recordings, and in situ training itself. As such, it is unclear which combination of these components ultimately resulted in teachers' increased use of BSP. Future research should conduct component analyses to determine which DBC components led to teachers' improved implementation.

Fourth, social validity data did not differentiate between English and Spanish BSP statements. For this reason, it is difficult to fully determine if the teachers found the linguistic adaptation of BSP as socially valid. Anecdotally, Ms. Ashley and Ms. Laura commented that Spanish BSP positively impacted the target MLLs and other MLLs' engagement; nevertheless, future research should consider collecting social validity data for linguistically adaptive BSP separately. Finally, this study did not collect generalization or long-term follow-up data. As such, the extent to which teachers' use of BSP generalized or maintained is unclear. LaBrot et al. (2021) found, following in situ training, teachers' use of BSP generalized across settings and maintained over time. However, future research examining the extent to which rates of linguistically adaptive BSP generalize and maintain are needed.

Declarations

Funding: No funding was received for this project.

Conflict of Interest: The authors declare that there are no conflicts of interest.

Ethical Approval: All study procedures were appropriately approved. This study does not contain any studies with animals performed by any of the authors.

Informed Consent: Informed consent was obtained from all individual participants included in this study.

Author Contribution

C.A.O, and Z.L wrote the main manuscript and prepared figures 1 and 2 and table 1. K.K, E.D, and B.D made revisions and major edits once the document was finalized. B.G, L.R, and F.N participated in data collection.

Data Availability

All data supporting the findings of this study are available within the paper

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Table

Table 1 is available in the Supplementary Files section.

Figures

Figure 1
Teachers' Rates of Spanish, English, and Aggregate BSP Statements

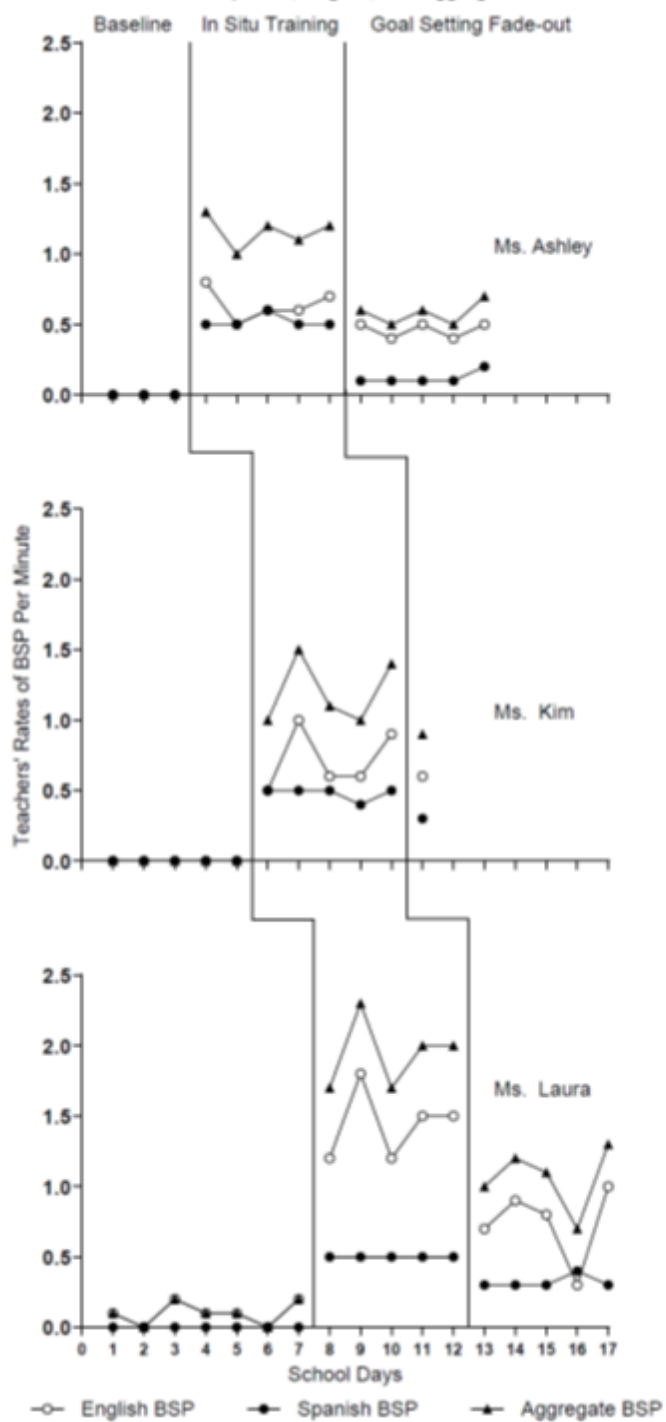


Figure 1

Legend not included with this version

Figure 2
Class-wide and ELLs Display of AEB and DB

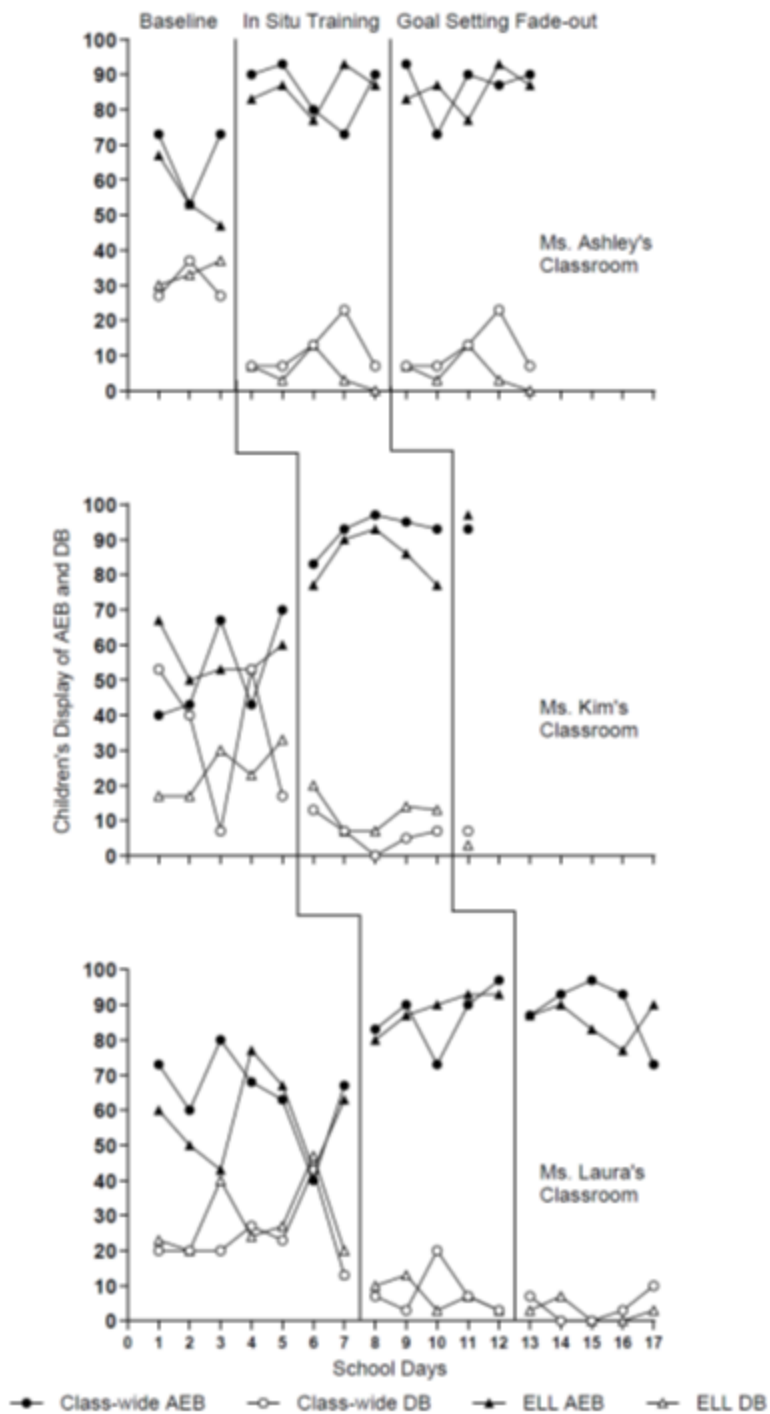


Figure 2

Legend not included with this version

Supplementary Files

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- [Table1.SocialValidity.docx](#)