Second-Year Specialist-Level Portfolio

Based on 2009-2010 Training

School Psychology

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Introduction to the Second Year Portfolio

This portfolio begins with my professional model of practice, which reflects my training in the field of School Psychology and will serve as my guide as I move into internship next year. After the model of practice, my entries consist of selected practicum cases, which were chosen to reflect my training and experiences thus far, and showcase my readiness to move into a more independent role as a school psychology intern. Table 1 summarizes and describes each of my entries and where they fit into each Tier within an RtI model. Each case was chosen because it highlights and demonstrates the multiple skills that I have learned and practiced this year in my school psychology practicum experience.
### Table 1: Overview of Case Entries

<table>
<thead>
<tr>
<th>Title</th>
<th>Tier</th>
<th>Description</th>
<th>Requirements Fulfilled/ Skills Demonstrated</th>
</tr>
</thead>
</table>
| Staff Development: Targeting Early Literacy Skills for Preschoolers Transitioning into Kindergarten | Tier 1 - Agency-Wide Staff Training and Follow-up | An agency-wide staff development took place that targeted enhancing transitioning preschoolers’ early literacy and kindergarten preparation skills. | • Academic  
• Staff Development |
| Class-wide Teacher Consultation for Literacy Supports in a Preschool Classroom with a High English-Language Learner Population | Tier 1 - Class-wide Academic Intervention | A preschool class received consultative supports in using Spanish for English Language Learner Students, as well as multiple literacy activities designed to increase letter-naming fluency. | • Academic  
• Class-wide Intervention |
| The Effects of a Small Group Social Skill Intervention for a Group of Kindergarteners | Tier 2 - Small Group Intervention | Five kindergarten students received a small group social skills intervention. | • Behavior  
• Small Group Intervention  
• Group Counseling |
| The Effects of a Taped-Word Intervention for Sight Words and Blending Activities on a First-graders Reading Skills | Tier 3 - High-Intensity Individual Academic Intervention | A first grade struggling reader received a taped-word intervention to target sight words and word blending, as well as supports in math and reading fluency as the year progressed. | • Academic  
• Individual Intervention |
<table>
<thead>
<tr>
<th>Title</th>
<th>Tier</th>
<th>Description</th>
<th>Requirements Fulfilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Effects of a Self-evaluation Intervention with Multiple Components on a First-grader's Off-Task Behaviors</td>
<td>Tier 3- Intensive Individual Behavior Intervention</td>
<td>A first grade student with multiple behavior concerns received a self-evaluation intervention as well as multiple teacher and parent supports.</td>
<td>• Behavior</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Individual Intervention</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Meaningful parent contact</td>
</tr>
<tr>
<td>Using a Picture Activity Schedule and Differential Reinforcement for a Preschooler with Behavior Problems in Multiple Areas</td>
<td>Tier 3- Intensive Individual Behavior Intervention</td>
<td>A preschooler with multiple behavior concerns received a picture activity schedule and differential reinforcement for appropriate behavior, as well as supports for elopement and inappropriate bus riding behaviors.</td>
<td>• Early Intervention</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Behavior</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Individual Intervention</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Some parent contact</td>
</tr>
<tr>
<td>A Functional Behavior Assessment of a First-grade Student with a Low-incidence Disability</td>
<td>Tier 3- Intensive Individual Behavior Assessment and Intervention</td>
<td>A first-grader on the Autism Spectrum disorder received consultative supports for throwing objects and screaming based on a full functional behavior assessment (FBA).</td>
<td>• FBA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Behavior</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Individualized Intervention</td>
</tr>
</tbody>
</table>
Professional Model of Practice

A school psychologist is a child advocate who works with schools “toward improving academic competence, social and emotional functioning, family and school partnerships, classroom instruction, and school-based family health and mental health services” within a model of service delivery and systems change, and a prevention-focused context (NASP, 2006, p.8). In developing my professional model of practice, I seek to guide my future practices as a school psychologist to ensure that I am providing the most effective services to the clients I will be serving—the students. A model of practice is important in that it will help me, as a practitioner, understand and control my own behavior, and set goals for improvement and development.

My professional model of practice will serve as my guide as I move forward into my internship and into my practice as a school psychologist. My model comes from my training at the University level, as well as my experiences in school thus far through practicum work and other field experiences. In addition, I seek guidance from the National Association of School Psychologists (NASP) guidelines (NASP, Appendix II, 2008), the NASP Blueprint for Training and Practice (NASP, 2006), and the Association for Behavior Analysis International (ABAI, 2010).

At the core of my model of practice is to be a child and family advocate. NASP’s ethical principles state that a school psychologist should seek to improve the quality of life for his/her clients, which are primarily the students we serve (Appendix I, 2008). My experiences thus far have taught me the importance of involving family members in interventions, and of keeping them involved in ongoing progress in the classroom. NASP Guideline 8 describes the importance of promoting family/school partnerships for all
students, regardless of a student’s school performance (NASP, Appendix II, 2008). I intend to promote a welcoming environment for parents in the school/district I am in, one that values the parent and their involvement in their children’s education. Additionally, I intend to be a child advocate and leader in systems change by seeking to provide the most optimal learning experience for all students. As such, I will use my skills as a consultant to help teachers and other personnel provide the best and most effective educational experiences for their classrooms.

Another important component to my model is to be a scientist-practitioner. According to NASP Guideline 1, a school psychologist should both translate research into practice and use research design to conduct investigations (Appendix II, 2008). I intend to use empirically validated, research based assessments and interventions in my practice. Furthermore, I will hold myself accountable for my decisions by evaluating the outcomes of my services, and making data-based decisions to change services provided when necessary. Traditionally, there has been a gap between research-based practice and what is used in schools (NASP, Systems Change, 2008). As such, at the center of my scientist-practitioner model is to promote systems-level practices that are based in research, so that these practices can be the effective for almost all students in a district. NASP Guideline 3 states that a school psychologist should set challenging and achievable goals. I think it is very important to set goals for all cases, at the individual, school-wide, or systems level, and ensure that my services are helping the student(s) achieve these goals through continuous progress monitoring and evaluation. This outlook will ensure that I can meet the goal of being a child and family advocate, by holding myself accountable for the services I provide.
I also intend to seek out experiences with diverse populations in my practice as a school psychologist. One of the key reasons I chose school psychology for a career was my desire to help children who are disadvantaged due to cultural and/or language barriers. As such, another key component of my model of practice is diversity considerations and knowledge of individual differences. At the school/district-wide level, I intend to promote a welcoming environment that respects diversity and children’s ties to their families and community, in accordance with the National Association for Young Children’s diversity statement (NAEYC, 2005). NASP Guideline 5 describes that school psychologist should possess the necessary knowledge, skills, and sensitivity to work with students from multiple backgrounds, as well as be aware of any biases one might bring into their practices as a school psychologist (Appendix II, 2008). I intend to research and seek out experiences with students of different backgrounds, and continually assess my personal biases and how they might influence my practice. Additionally, I intend to continue to develop my Spanish language skills so that I might utilize these skills in helping Hispanic students succeed in school, as well as help their families feel welcome and involved in their students’ education.

NASP Guideline 2 (Appendix II, 2008) and my University training both highlight the importance of consultation and collaboration by school psychologists. I think that skills in these areas are key to effective service providing in this field, because of the promise of reaching and affecting the most students by using these tools, therefore being an effective child advocate. As such, I intend to continuously grow in my communication skills, and develop positive professional relationships with the other personnel in my building(s). To be most effective as a school psychologist, it is important that I work with other change
agents in the school to develop effective practices at all levels. Furthermore, I will use my consultation skills to promote treatment acceptability with the interventions and services I provide, to help ensure maximum treatment integrity to promote the most effective services.

As a school psychologist, one of my primary goals to assist in creating an optimal learning environment will be to use a preventative model. In order to achieve this goal, I intend to advocate for and/or support the use of a tiered model for my practice and for the school and district I am in. A model such as Response to Intervention (RtI) creates a problem solving model whose primary goal is to provide the most effective instruction and intervention to each student by providing services in tiers, while providing efficiency in the allocation of educational resources (Rilley-Tillman & Burns, 2009). Using a model such as this, I can ensure that I am advocating for best practices and can avoid unnecessary labeling of students. By following an RtI model, students who need extra help will be given that help within Tiers based on needed intensity of services. In addition, RtI ensures that the vast majority of students are receiving effective curriculum and instruction. Promoting and supporting a model such as this will help ensure both that I am being a child advocate, as well as a scientist practitioner, by using research-based curriculum and intervention to provide students with the support that they need. NASP guideline 4 advocates for the use of alternative, Positive Behavior Support (PBS) methods and models by school psychologists (NASP, Appendix II, 2008). As such, I also intend to use a tiered, preventative model in my practice at the individual, small group, school-wide, and district-wide levels for behavior supports.
Both RtI and PBS models present a problem-solving approach, as described in NASP Guideline 1 (NASP, Appendix II, 2008). By taking a problem-solving approach, assessments and interventions I utilize in my practice will be linked both to one another and to the reason for the concern, whether academic or behavioral. At the systems-level, I intend to advocate for the use of a problem-solving approach to address issues at the individual, class, building, and district level (NASP, Systems Change, 2008). Using a problem solving model will help to ensure that I am assisting in providing the most effective services to students at all levels, by being preventative and emphasizing early and effective intervention strategies.

In addition to using a problem solving approach, I intend to utilize a ecological/behavioral model in my practice. NASP Guideline 4 describes that school psychologists should use models that consider antecedents, consequences, functions, and causes of behavioral models (Appendix II, 2008). Other Guidelines, including those for working in units, advocate for consideration of school climate and systems level change (Appendix II, 2008). The Association for Applied Behavior Analysis describes the importance of looking to biological and environmental factors when considering why behaviors occur (ABAI, 2010). Within a behavioral model, I will apply behavior change principals to enhance the clients’ I serve quality of life, which is my ultimate goal as a school psychologist. It is important for me, as a practitioner, to remember that there are multiple influences on behavior, including academic behavior, so that I can look for causes in the environment when a problem arises. By utilizing a model such as this, I can ensure that I am using empirically-based treatments and preventative measures that are linked to the function of the problem in my services as a school psychologist.
Lastly, I intend to continue to develop professionally and seek out new experiences and educational opportunities to grow in my knowledge and practice in the field of school psychology. My University training has highlighted the importance of taking leadership/initiative and continuing to seek out professional development. In order to meet this goal, I intend to actively pursue up-to-date research in instructional practices and intervention strategies. I will also use my knowledge gained from professional conferences, literature reviews, and consultation to be an advocate for effective services in my school(s). NASP Guideline 6 advocates for the use of knowledge to help assist and improve schools and communities (Appendix II, 2008). Also, NASPs principles for professional ethics advocate for remaining current in research, training, and professional practice (Appendix I, 2008). I intend to be aware of my limitations as a practitioner, and seek out help from multiple sources when needed to ensure that I am qualified to provide the most effective services.

My professional model of practice, as well as federal, state, and local legislation, will guide my experiences as a school psychologist in my internship and in my future practice. NASP has multiple guidelines that I intend to incorporate in my practice, but the ones chosen here are highlighted because they provide the core of my model to provide effective services. By adhering to this model, I hope to grow in my skills and effectiveness as a school psychologist, so that I may make a difference in the lives of many different students, their families, and the teachers involved who make my job possible.
References

http://www.abainternational.org/ba.asp


Staff Development: Targeting Early Literacy Skills for Preschoolers Transitioning into Kindergarten

A team of school psychology trainees from the University of Cincinnati was asked to lead an agency-wide staff training for teachers in a Head Start program. The staff development covered extra practice literacy activities to target preschoolers who were transitioning to kindergarten the following year. There is considerable discussion and research on staff developments, most of which show them to be fairly ineffective or not evaluated. Additionally, a lot of the research doesn’t consider student outcomes when measuring the effects of staff development (Gerla, Gilliam, & Wright, 2006). As such, it is important to consider what the research says about effective staff development for teachers.

Staff developments in schools. Bubb and Earley (2009) examined the effectiveness of staff development practices in 38 different schools. First, the agency should value both staff education as well as promote a clear understanding of both the material being presented and its importance in the lives of the students. Another indicator of positive results is clear goals linked to student outcomes being set. The material presented in a staff development should also be directly linked to a needs assessment; therefore the teachers are being trained in something that warrants change in their school (Bubb & Earley, 2009; Honawar, 2008). Additionally, effective staff developments involve components of discussion, coaching, mentoring, and follow-up observations. The impact of the development needs to be evaluated and improvement from the training should be acknowledged and/or rewarded. These are several of many important components that the researchers found that produced positive effects on both staff and student outcomes.
The Report of the National Reading Panel (2000) states that best practices for staff developments should report both teacher and student outcomes. For example, Honawar (2008) did a study of the effects of staff development on student outcomes, specifically students’ scores on state achievement tests. The staff developments in this study were different for different teachers and buildings and the trainings offered both subject matter content as well as effective teaching strategies. The staff developments were offered from an outside agency, which offered follow-up support as well as online resources for continuing research on subjects covered in the training. The researchers found that time spent in professional development correlated positively with students’ achievement test scores.

**Targeting early literacy in staff developments.** Gerla and others (2006) conducted a study on the staff development of 54 teachers. The teachers were taught strategies to improve literacy for at-risk students in small-group sessions and the effects of the staff development on the students’ reading performance were measured. The staff development included coaching, mentoring for staff members who were not at the training, and follow-observations and progress monitoring on student outcomes. The researchers found that after the staff development and coaching, the procedures taught were implemented with high adherence on follow-up visits. Additionally, these techniques did have a positive impact on reading measures used for progress monitoring.

Bailet, Repper, Piasta, and Murphy (2009) conducted a study on a small-group intervention in preschool settings for 220 students determined by early assessment to be at-risk for later reading failure based on several early indicators. The interventions began with staff development and coaching for the teachers of the identified students on
strategies for teaching letter names, letter sounds, rhyming, alliteration, and phoneme segmentation. These preschools already had comprehensive literacy curriculums in the regular classrooms, so these interventions were designed to supplement the curriculum by allowing these at-risk students to participate in small-group practice twice a week for 30 minutes each. The results show that the extra practice for these preschool students resulted in an increase on all measures on the Get it, Got it, Go (http://ggg.umn.edu/), which measures alliteration, rhyming, and picture naming, among other variables, as well as a significant increase in Get Ready to Read (http://www.getreadytoread.org/) scores, which measures letter naming and letter sound correspondence.

The studies mentioned above highlight the components from research for effective staff development, as well as several strategies for increasing practice opportunities for students at-risk for literacy problems. This entry describes a staff development for an area Head Start. The National Reading Panel (2000) reported letter knowledge and phonemic awareness as the two best school-entry predictors of how well children will learn to read in the first two years of instruction. Additionally, a specific outcomes framework identifies domains for Head Start students, as well specific goals before kindergarten (Head Start Bureau, 2003). This framework includes understanding letters as individual symbols that have a corresponding name, identifying beginning letters in familiar words, and knowing at least 10 letters of the alphabet, including those letters in a student’s name. This framework provides the basis for this early literacy staff development.
Methods

Participants and Setting

The staff development occurred during a teacher in-service day at the administrative building of the local Head Start agency. Teachers were required to attend. Additionally, supervisors and family advocates from each of the centers were present as well as some administrative personnel.

Presenters were twelve School Psychology students from the University of Cincinnati. In addition to this staff development, these trainees were also placed in classrooms throughout this agency for the purposes of practicum experiences and teacher support. Also, the practicum trainees presented for two other staff developments covering Positive Behavior Supports and the Instructional and Caring Contacts code, on separate occasions. The author was one of the twelve students presenting for this staff development.

Targeted Variables

This staff development was designed to target letter-naming fluency, letter-sound fluency, and number identification fluency for students transitioning into kindergarten. For improvement to occur, changes in teacher instruction (e.g., extra practice, knowledge of engaging activities) were desired. Additionally, for many classrooms letter-naming fluency (LNF) as well as other child and teacher variables were monitored at the class-wide level through curriculum assessments that were teacher-managed as well as through classroom observations and support by the school psychology trainees.

LNF was measured through randomly generated letter probes, and each student in a class would be assessed by measuring how many letters from this probe the student could
name in one minute. The goals on these assessments were unique to each classroom, but at least included naming 10 letters per minute, as set in the Head Start Outcomes Framework (Head Start Bureau, 2003).

A social validity questionnaire was also given to the teachers after the staff development, to measure the teachers’ responses to the training and the presenters. These data were reported by mean teacher rating by statement.

**Training Procedures**

The staff development opened with the students describing data needed from teachers for each student transitioning to kindergarten the following school year. This form was to be shared with these students’ parents for the purpose of letting them know what they should work on with their child over the summer to help prepare them for kindergarten. See Appendix A for a copy of the form.

The presenters then discussed ways in which the teachers could provide extra practice opportunities on early literacy indicators, such as letter identification, for transitioning students, as well as ways to modify these techniques to accommodate students who were ahead of the other students in their classes. A handout was given to the teachers with general strategies for working with transitioning kindergarteners that were both above class average and below class average. See Appendix B for the handout.

Each of the twelve presenters showed examples of materials used in their class. One example of a literacy game is a fishing game, in which the students pull magnetic cardboard fish out of a bucket and name the letter written on them. Another game involved a spinner, which would land on different letters that the students had to name. Several presenters talked about response cards, which are cards with letters on them that, when prompted,
the students would hold up as their answer. These could be used during instructional time or during small-group instruction to allow for extra practice time as well as individual error correction and feedback. Another literacy activity presented was a rubber duck activity, in which rubber ducks with letters written underneath them were picked by a student out of the water, and then the student was asked to name them. Another presenter showed an activity that was made that was a folder with shapes in it for the students to identify. See Appendices C and D for sample scripts for several of the activities discussed.

All of the activities presented by the practicum students were meant to be interesting and engaging games for whole-class or small-group practice with letter-naming and letter-sound fluency, among other instructional variables. Additionally, these activities could be modified to accommodate students who already knew all or many of their letters by targeting letter sounds or asking that student to name a word that starts with that letter.

After the presenters demonstrated all of the activities, the teachers were invited to share ideas of activities or techniques that they had tried in their classrooms to increase literacy skills. Several teachers shared ideas they had to improve letter-naming fluency for struggling transitioning students. After this discussion, the teachers were asked to make at least one new activity for their classroom to promote early literacy skills, either based on something they had seen at this training or from an idea of their own. The teachers were given materials and given a half hour to make these activities.

At the conclusion of this activity, the teachers each shared what they had made as well as details of using the new activity. Many of the teachers said they would use their new activities during unstructured time, and some said they would use it in small groups
with their students transitioning into kindergarten next year. They all worked hard on their activities, and seemed very excited to use them in the classroom.

**Follow-up**

For most of the teachers involved in this staff development, a practicum student was working in their classroom as part of their practicum experience. As such, many of the teachers requested help making more activities for their students to continue to encourage additional literacy practice for struggling and transitioning students.

In addition, transitioning students were progress monitored in many of these classrooms to evaluate how close they were to meeting the Head Start Outcomes goals in kindergarten preparedness. The teachers all continued to receive supports and consultation from the staff development presenters as practicum support for many individual classrooms throughout the year. Many of the classrooms in which specific goals were set and specific interventions made were monitored for intervention adherence. Some of these interventions were created as a result of the staff development.

**Results**

**Student Results**

The following graphs demonstrate the impact that the staff development and follow-up had on two classrooms in the agency, one of which was the classroom in which the author was placed. The results demonstrate progress on Letter Naming Fluency using class averages. These results show a sample of Agency classrooms based on the presenters’ data.

Figure 1 shows the results of letter naming fluency averages for one agency classroom. Baseline average was 2 for this class. Class-wide interventions were
introduced by one consultant in the classroom, and averages increased to 2-4 letters per minute. After the staff development and follow-up consultation, classroom averages increased to 5-14 letters per minute.

*Figure 1: Room 1 Average Letter Naming Fluency*

![Class Average Diagram]

Figure 2 shows the results of the staff development and feedback in a second classroom. Baseline data show the class average to be ascending but still within the range of 0-4. During the feedback condition, where the consultant trained the teachers to implement the class-wide interventions, the class average was at 2. After the class-wide interventions were implemented, class averages increased to 3-4 letters per minute. After the staff development and feedback, class averages increased to 8-17 letters per minute.
Figure 2: Room 2 Average Letter Naming Fluency

Social Validity Results

Table 1 shows the results of the staff satisfaction survey given to the teachers present at the staff development. For all statements, the teachers gave an average rating of between 1 (strongly agree) and 2 (agree). The average response for all questions was 1.52.
Table 1: Results of the Teacher Satisfaction Survey

1=Strongly Agree, 2=Agree, 3=Not Sure, 4= Disagree, and 5=Strongly Disagree

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean rating</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Presenters were prepared</td>
<td>1.5</td>
<td>.5</td>
</tr>
<tr>
<td>The information presented was easy to understand</td>
<td>1.5</td>
<td>.51</td>
</tr>
<tr>
<td>I learned something new today</td>
<td>1.6</td>
<td>.69</td>
</tr>
<tr>
<td>It was easy to talk with the group and ask questions.</td>
<td>1.5</td>
<td>.51</td>
</tr>
<tr>
<td>The handouts were helpful.</td>
<td>1.5</td>
<td>.51</td>
</tr>
</tbody>
</table>

All the teachers circled the session length was ‘Just Right’

**Discussion**

The student outcomes presented in the results indicate that for the author’s classroom as well as one other, the information presented at this development may have had an impact on teacher instruction and, therefore, student outcomes. For the two classrooms described, average class letter naming fluency increased after the staff development, along with the feedback/activities.

In addition to this data, many consultants who were part of the team of presenters reported anecdotal as well as data-based changes in teachers’ instructional and managerial variables after the training session. Many teachers made their own literacy activities, and others asked the consultants to help them. It is important that the effects of a staff development are measured on student outcomes (National Reading Panel, 2000), so the
presenters were able to follow up on the effects of their training on students in the agency for many of the teachers in attendance.

Additionally, the teachers present at the staff development rated both the material and presenters very highly. The teachers also expressed that they learned something new that day. The teachers thought the material learned was meaningful, which may mean that they were more likely to use the methods in classrooms. Anecdotal data from several UC student consultants suggest that many of the classroom teachers used methods taught during this training with their students. Classroom support and feedback after the development may have helped transfer information from the staff development to the classroom. Research reports that a single staff development may have little impact on actual staff behavior in a classroom (Bubb & Earley, 2009). As such, this feedback, support, and coaching may have contributed to the success of the staff development by assisting the staff in bringing the methods learned into the classroom.

The data above represent class averages including younger children, as opposed to data limited to those students who are transitioning to kindergarten in the next academic year. Because this staff development was targeting older Head Start children, it would have been helpful to examine these students as a sub-group within the agency classrooms. Data on transitioning kindergarteners was looked at separately in classrooms by UC trainees but was not reported here.

Despite the positive ratings and change in class averages, the data are limited in that they are not used within an internally valid design. A more representative sample or agency-wide data would be more convincing as would be data on actual teacher use of
methods presented in this staff development. However, this staff development represents service and not research.

Another limitation is that this was the first staff development planned and carried out by the school psychology trainees. With additional experience, staff development outcomes may be different as well.

This staff development demonstrates the author’s ability to work collaboratively with teachers at an agency-wide level to promote positive student outcomes. The author helped plan and carry out the development, but also followed up in the classroom with teachers to help develop activities that would benefit struggling transitioning students. For the two classrooms above, the staff development may have had a positive effect on both teacher behaviors and student outcomes. Additionally, interventions/supports introduced all have a base in research, which supports the use of a scientist-practitioner model.

Despite this report’s limitations, it is clear that the teachers present at this staff development reported that they had learned something new and useful. Many of these teachers returned to the classroom and used the methods taught. Several classrooms showed increased averages in letter-naming fluency. As such, this staff development and follow-up appears to have been successful for educating both students and their teachers.
References


Appendix A: Transitioning Kindergartener Form

Ready for Kindergarten?
A Report of Class-wide and Small Group Supports at Head Start

Child’s Name ______________________ Parent’s Name ______________________

Teacher’s Name ______________________ Date ____________

Child’s Overall Strengths:

<table>
<thead>
<tr>
<th>Letters Child Can Correctly Identify</th>
<th>Numbers Child Can Correctly Identify</th>
</tr>
</thead>
<tbody>
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Supports That Child Has Already Received:

Successful Strategies to Improve Literacy and Numeracy During Summer:
(Please see teachers or UC students for questions or explanations)

- Increase practice opportunities
- Incorporate letter/number games into everyday experiences
- Model skills
  - Show how to write name or doing crafts involving letters
- Provide error correction and feedback to make sure they are learning the right skills
- Help them to generalize skills to other settings
  - Use a variety of activities involving different types of fonts
  - Show difference between upper and lower-case letters
- Read with children as much as possible!
  - Make reading interactive by asking questions and letting them talk

_____________________________     ______________________________
Parent Signature                  Teacher Signature
Tips for Your Transitioning Students

For Above-Average Students

- Use more challenging educational opportunities in the classroom for these students.
- If students know all/most of their letters, practice other literacy concepts.
  - Letter Sounds- Use similar activities to target the letter sounds instead of the letter names.
  - Phonics- Practice breaking words apart into their sounds
  - Rhyming
  - Initial Sound Fluency- have the student practice identifying the first sound in a word
- If students know all/most of their numbers, practice other numeracy concepts.
  - For example:
    - Basic addition concepts (e.g., using manipulatives)
    - Missing number sequences (1 ___ 3, ask the student to identify missing numbers)
    - Matching numbers to pictures (have the student match a number to a picture with that number of objects on it)

***The important thing is to provide them with opportunities to continue learning in order to challenge them when they’ve already mastered basic concepts***

For Struggling Students

- Provide more individualized practice opportunities
  - Incorporate games into circle time that require individual student responses
  - Spend one-on-one time teaching letters in their name
- During unstructured time prompt students to:
  - Tell you the letter of the stamp they are using with Play-Dough
  - Tell you the letters on the Play-Dough container
- Model skills to children through a variety of activities
  - Crafts involving letters
  - Using whiteboards where you make letter and have them replicate numerous times
- Help students generalize or expand their knowledge and skills to other settings
- Encourage practice opportunities at home

***These children will need more individualized attention and practice opportunities than the rest in your room***
Appendix C: Script for Response Cards

Response Cards Script
1. At the beginning of instructional time, remind the students how to use the response cards.
   Demonstrate holding a letter above head so that they can see.
2. During instructional time, prompt the student’s to hold up the letter you’re working on.
   (E.g., “A’, everybody hold your ‘A’ above your head.”)
3. Scan the group and offer praise such as “Yes, that’s the letter ‘A’” or “Right!” for correct
   responses. Offer constructive feedback identifying what is wrong for incorrect answers such
   as “That is a ‘B.’ Try to find the ‘A’.”
4. After about 20 seconds, hold up the correct card so that all students can see the correct
   letter and say, “Look, this is an ‘A’. What letter is this?”
5. Instruct students to put their letter cards back into their envelope and back in their cubbies
   when circle time is over.
Appendix D: Sample Script for Literacy Activities (e.g., fishing game, spinner)

Literacy Activities

1. Have the child pick a letter (using the spinner, fishing pole, or just picking it out)

2. Ask the child, “What letter?”

3. If the child responds correctly, give praise and repeat the correct letter or number name.

4. If the child responds incorrectly, tell them the correct name of the letter or number, and have the child repeat it.
Class-wide Teacher Consultation for Literacy Supports in a Preschool Classroom with a High English-Language Learner Population

Class-wide supports in many early preschool classrooms are a step in ensuring early development of necessary reading skills. In preschool classrooms with students from economically disadvantaged backgrounds, such as students in Head Start programs, early skill development, as well as supports are especially important to help ensure that students develop the necessary early literacy skills for kindergarten due to added risk status.

Within a response to intervention (RTI) model, class-wide supports to increase learning opportunities and target early intervention for these preschoolers are key to helping reduce the achievement gap and help students catch up by the time they start kindergarten.

Response to Intervention

Response to intervention ( RtI ) is a service delivery model that focuses on prevention and early intervention for at-risk students (Hagans-Murillo, 2005). Although the model currently has variations, the most common components are the implementation of instructional practices based in research, progress monitoring student outcomes, and the modification of instruction based on student outcome data (Hagans-Murillo, 2005). In other words, RtI uses student responses to quality, research-based interventions for decisions about needed services (Barnett, VanDerHeyden, & Witt, 2007). RtI enables schools to provide learning opportunities at varying levels of intensity within a tiered service model (VanDerHeyden, Snyder, Broussard, & Ramsdell, 2007). Many RtI models employ a three-tier model of service delivery. Tier 1 focuses on prevention and system/class-wide intervention. Tier 2 targets students for whom the regular instruction methods are not benefitting, and usually involves small-group or embedded interventions (Barnett et al., 2007). Tier 3 is more intensive, individualized intervention for students
who are not responding to Tier 1 and Tier 2 supports. Services in an RtI model can be
delivered in all three tiers simultaneously, and decision rules about moving between the
tiers are set on a school-wide, class-wide, or individual level in order to promote data-
based decision making.

**Early Intervention**

Research has converged on the importance of early intervention for important
emergent reading skills (National Reading Panel, 2000), such as phonemic awareness,
alphabetic principal, and letter naming fluency. RtI in preschool helps promote the timely
acquisition of these skills and can decrease the risk of developing learning difficulties and
later reading problems (Hagans-Murillo, 2005). The mastery of emergent literacy skills is
especially important for disadvantaged learners who may not have the exposure and
support at home to develop these skills before preschool. This is why using an RtI model
early on can be potentially beneficial to such students.

**Diversity considerations and working with English Language Learner (ELL)
populations.** According to the National Association for the Education of Young Children
(NAEYC), it is the responsibility of early childhood programs to “create a welcoming
environment that respects diversity, supports children’s ties to their families and
community, and promotes both second language acquisition and preservation of children’s
home languages and cultural identities” (2005, p. 1). In other words, it is ideal that
children are supported in the classroom in their native language to promote learning of
both the English language and the other academic areas covered in the classroom. In order
for high quality interventions to be developed in RtI Tier 1, important considerations may
need to be made concerning student’s culture and the cultural context of the classroom (Xu
& Drame, 2008). As such, it may be important that classrooms with diverse students seek to support of home language and culture while at the same time supporting English literacy development (NAEYC, 2005).

However, there is a surprising lack of research on empirically supported interventions for reading difficulties in English Language Learner (ELL) populations, despite the growing number of these students in our schools (Gilbertson, Maxfield, & Hughes, 2007; Xu & Drame, 2008). ELLs have the dual task of learning to read in English as well as learning academic content, which is why language supports and additional opportunities to practice are vital to the success of this population. More research is certainly needed in this area, but RTI shows promise in helping to reduce the disadvantage these students have compared to their peers.

**Increased practice opportunities.** It is well established that learning and maintenance of learning increases with more frequent learning opportunities (Gilbertson et al., 2007). This fact is especially relevant to preschools, which traditionally employ a more exploratory style of learning, as opposed to direct instruction (Hagans-Murillo, 2005). For students who are not afforded the practice opportunities for early literacy skills at home, appropriate increases in opportunities to practice need to be provided as much as possible in their classrooms.

Considerations in ELL populations include numerous questions of instructional method. For example, Gilbertson et al. (2007) compared the effects of a see/say intervention (teacher models saying a letter, student names the letter orally) and a hear/point intervention (teacher models saying the intervention, then student points to the corresponding letter) on letter naming fluency with six kindergarten ELL students. The
see/say or oral practice condition showed better performance outcomes on letter naming curriculum-based measures (CBMs) than the hear/point condition as well as produced better retention rates for most of the participants. The results of this study imply that verbal responding in ELL students results in greater learning and retention of learning.

**Response cards.** Response cards are one research-based intervention that can increase the levels of active student responding (ASR) in a classroom. Response cards are cards, signs, or items that can be simultaneously held up by students in a class to display their responses to prompts or questions presented by the teacher (Randolph, 2007).

Narayan, Heward, Gardner, Courson, and Omness (1990) studied the effects of response cards compared to hand raising on number and accuracy of student responses and other variables in a fourth grade classroom. Response cards created more opportunities to respond than hand raising as expected. This study demonstrates the wide range of positive effects that response cards can have on academic and behavior variables.

A study on response cards with students with learning disabilities and ELLs was conducted by Davis and O’Neill (2004) with four students in seventh- and eighth-grade classrooms. Two of the students were ELLs, one was identified as having a learning disability, and another described as a student with Traumatic Brain Injury (TBI). The results of this study showed that the response card conditions resulted in higher frequency of responses, higher levels of correct responses, less off-task behavior (demonstrated significantly in only one student), and higher group and individual scores on quizzes. The students involved in this study, however, reported that they preferred hand raising, although on questionnaires they listed more negative attributes to the hand raising
conditions. This study demonstrates positive effects of response cards for ELL students and students with disabilities, although more research is needed in this area.

Wood and others (2009) used response cards in a kindergarten classroom. The response cards were used on the entire class, but the researchers measured the effects on participation and off-task behavior in four target students. The response card conditions showed both increased participation and decreased off-task behavior; rates of participation were nearly 16 times higher than when hand raising conditions were in place. This study did not measure any academic outcomes associated with the use of response cards.

Godfrey and others (2003) used response cards with calendar lessons for 5 preschool students with identified behavior problems. The cards all had corresponding picture cards that the teachers in the classroom used to prompt the students’ responding. Results showed that response cards had a positive effect on active student responding compared to hand raising and choral responding.

In summary, response cards are a low cost, easy to implement intervention that have been shown to increase active student responding as well as decrease off-task behavior, and are promising for both preschool classrooms and with ELLs.

**Current consultation.** The current consultation examined the effects of Tier 1 class-wide supports on a Midwestern Head Start classroom with a high population of ELLs. Response cards and additional literacy games to promote increased practice opportunities were used to increase the letter and number identification skills for these preschool students. The response cards used were slightly different from the studies described above in that they used letters and numbers. The consultant measured the effects of these interventions on academic outcomes and on distributed practice. However, it should be
noted as a consultation context that this classroom had multiple challenges. RtI and PBS were in the first year of administrative implementation and a second graduate student also provided supports in this classroom. Additionally, several children were referred for severe behavioral challenges (details provided in separate entries).

**Methods**

**Participants and Setting**

This consultation was conducted in an afternoon preschool classroom at a Midwestern Head Start Center. The class consisted of 17 students, all of whom were aged 3 or 4. Of the 17 students, 6 students were identified as ELLs based on the parent reports of Spanish as primary language. All students in the classroom received free lunch. The classroom had a lead teacher and an assistant teacher, and the teacher to student ratio was 1:8-1:9 most of the time. Both of the teachers present were monolingual English speakers. The consultant, a practicum student supervised at university- and agency-levels, was conversationally fluent in Spanish. She was involved in team planning and overall teacher support with the ELLs in the classroom. Additionally, another practicum student was present in the classroom to help with interobserver agreement for this report.

This was a multiply challenged classroom with several children with highly concerning behavior as well as a relatively high number of ELL children. The multiple challenges made prioritizing interventions and adherence difficult.

**Targeted Variables**

**Number of Spanish words used by the teacher.** The consultant supported the teachers with the use of Spanish words in the classroom. She taught the teachers frequently used words, requests, and instructional materials in this language to assist in
both the behavior management and instruction of the ELL students in the classroom. This variable was progress monitored due to research on the importance of teaching academics and social factors in a child’s first language to ensure that they understand what is being taught while they are continuing to work on their English language proficiency. This variable was measured once a week in 20-minute observation sessions. A frequency count was tallied in the session for the number of Spanish words or phrases that the teachers used with the ELL students to make a request, instruct, or converse with the students. Spanish words used was only coded if the teacher(s) used a Spanish word in the classroom, and not if the consultant used a Spanish word. Teacher dependent variables were the number of Spanish words used by the teachers in the classroom during a given interval.

**Percentage of Active Student Responses (ASR).** ASR was targeted for intervention due to the low percentage of active responding in this classroom during choral responding techniques. The consultant used a zone-sampling method to examine what percentage of students were responding to a given teacher prompt. The circle of students was divided into three zones, and the consultant noted the number of students responding in each zone every time the teacher made a prompt. The next prompt, the observer coded the number of responders in the next zone. Structured time was observed for 20 minutes, once every other week, as a form of progress monitoring active student participation. The reported percentage for each observation session is the average percentage of student’s responding to prompts during that observation session. See Appendix A for this code.

**Letter-naming fluency.** This variable was targeted for intervention because upon initial probes, most of the class was very low on both letter naming fluency and letter sound fluency. The ELL students in the classroom were examined on CBM probes as a
group, to ensure that they were benefitting from the class-wide instructional practices as well.

Probes of lower-case and capital letters and numbers were generated (www.interventioncentral.com) by the consultant, and the entire class was probed every three to four weeks to examine class average and distribution. Letter-naming was targeted, and number-identification was also monitored to provide the teachers with feedback about student performance in this area.

**Interobserver Agreement.** Interobserver agreement (IOA) was calculated for 20% of dependent variable data collection. Total agreement (S/L) was calculated for the distributed practice code as well as the CBM probes. See Table 1 for IOA results.

*Table 1: IOA Results*

<table>
<thead>
<tr>
<th>Letter Naming</th>
<th>Fluency</th>
<th>Distributed</th>
<th>Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Interscorer Agreement</td>
<td>Date</td>
<td>Interscorer Agreement</td>
</tr>
<tr>
<td>12/8/09</td>
<td>100%</td>
<td>11/10/09</td>
<td>96%</td>
</tr>
<tr>
<td>3/11/10</td>
<td>100%</td>
<td>2/19/10</td>
<td>80%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3/11/10</td>
<td>98%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4/29/10</td>
<td>99.6%</td>
</tr>
<tr>
<td>Mean</td>
<td>100%</td>
<td>Mean</td>
<td>93.4%</td>
</tr>
</tbody>
</table>

**Hypothesis**

The consultant hypothesized that the students, including ELLs, were not getting enough practice due to the choral responding techniques used during instructional time and the lack of instruction during unstructured time. During choral responding, very few of
the students were responding to teacher prompts. There was also very little error
correction for students who were responding incorrectly within the group.

**Intervention Procedures**

*Accountability design.* This consultation employed an A/B design, comparing
baseline for each of the variables to intervention rates for each of the variables.

*Baseline.* Baseline data was collected on both distributed practice during circle
time and the three CBM variables. Three data points were collected for distributed practice,
and one class-wide probe each for letter-naming fluency, letter-sound fluency, and number-
identification fluency. Baseline data are displayed and discussed in the results section
below.

*Intervention condition 1: Specific supports to teachers on Spanish.* To support
diversity and learning in this diverse classroom, the consultant worked with the teachers to
incorporate Spanish words into their everyday requests and instruction. Additionally, to
increase class-wide supports, the consultant helped to translate notes sent home and
classroom rules. She also helped to teach the teachers words and phrases in Spanish that
they could use in their everyday activities.

*Intervention condition 2: Response cards.* In this consultation, the effects of
response cards and more frequent practice opportunities were used to try to increase the
students’ ability to correctly name letters, identify letter sounds, and correctly name
numbers in one-minute probes. A response card intervention was planned during
structured learning time. The response cards were pre-printed cards with lower-case
letters on them. Each student was provided an envelope with 4-6 letters that the class was
currently working on it. See Appendix B for the script used by the teacher in the classroom.

**Intervention training and implementation.** The consultant trained and modeled the intervention script for the teachers prior to implementation, and observed the first two trials of the response card implementation and gave feedback to the teachers on their use.

**Other conditions: Supplemental activities.** Additionally, two new literacy games were introduced simultaneously for use during transitions and unstructured (free play) time. The first game involved using rubber ducks to practice letter naming, letter sound identification, and initial sound fluency. Thirty-six rubber ducks with printed letters and numbers (a-z and 1-10) were made and were floated in a tub of water. Additionally, there were 26 cards with various pictures on them. During the activity, the teachers would ask the students one by one to identify a picture that was on the card. Next, the child would have to identify the first sound in the word. After identifying the sound, the student would then identify the letter corresponding with that sound. Finally, the teachers would instruct the student to find the rubber duck with that letter on it. See appendix C for the script for this intervention. Intervention adherence was checked for 25% of sessions, and was measured if the teachers implemented one of the two activities during the observation session.

The second literacy game involved fishing for letters, and targeted letter-naming fluency. Fish were printed on card stock, and capital letters and numbers (a-z and 1-10) were printed on each fish. Additionally, each fish had a magnet on the back. The children would use a magnetic fishing pole to pick a letter out of the tub, and then the teachers would ask them to identify that letter or number. This intervention was designed to
increase practice opportunities, and also increase letter-naming activities in the classroom. See Appendix D for the intervention script for this activity. Intervention adherence was measured for 25% of the sessions, and was measured if the teachers implemented one of the two activities during the observation session.

These activities to increase practice opportunities were put into place for the entire class because initial data probes showed that a large percentage of the students were very low in both letter naming and letter sound fluency.

**Other Conditions: Transitioning Kindergarteners.** In addition to the interventions mentioned above, the other practicum student assigned to this room and the teachers introduced additional supports for the students who were transitioning to kindergarten the next school year. Due to the other interventions already created for this classroom, the consultant decided to try an at-home intervention targeting letter-naming fluency for these students. Four students’ parents returned the permission forms. In December, those students were sent home letter rings with upper- and lower-case letters on them, as well as a set of number rings. The parents were instructed to practice with their children at least three times per week, for 10-15 minute sessions, and to provide feedback to their children regarding their performance.

Additionally, the teachers raised concerns about the transitioning students during a team meeting (1/26/10). The teachers said they would continue to use the class-wide literacy activities created for the class, as well as work with these transitioning students as a small group at least once a week to help increase their letter-naming fluency.

**Feedback condition.** Due to multiple concerns in the classroom, the teachers were unable to incorporate the response cards and literacy support activities into the classroom
until other serious concerns were addressed. During the feedback condition (November-January), intervention adherence was near zero for all observation sessions.

**Intervention condition.** In February, the response card intervention was discussed and modified to help it fit better into the class-wide instructional practices. Instead of using envelopes, the consultant made a holder to hang on the wall, with pockets for each letter card. Additionally, due to fewer concerns in other areas of the classroom, and increasing concerns with transitioning and overall class academic performance, the teachers agreed to begin using both the response cards and the literacy activities more frequently in the classroom.

**Distributed Practice High Adherence vs. Low Adherence Condition.** During the low adherence condition, data were collected on distributed practice during circle time when the response cards were not being used. The intervention during these observations sessions had 0% adherence. During the first four points for the high adherence condition, the consultant implemented the intervention, while a second school psychology student collected distributed practice data. After several sessions, the teachers began to implement the response cards intervention while the consultant collected data. Intervention adherence during these sessions was 100%.

**PBS & Early literacy agency wide staff developments.** The class was supported in other ways as well. Another practicum student in this classroom developed class-wide behavior supports, which class-wide rules and rule training. Additionally, two students in the classroom were on individual intervention plans for problem behaviors. Staff developments, conducted by the practicum students in the various Head Start centers in the area, were held several times throughout the year. One such development targeted
early literacy activities, and the teachers were shown different ways to incorporate extra
practice opportunities into their classrooms and given the opportunity to make some of
these activities.

**Intervention Adherence**

Intervention adherence was assessed via a checklist filled out by direct observation
from the consultant based on the intervention scripts for 25% of the sessions.

**Social Validity**

The intervention procedures used in these class-wide supports were developed
collaboratively with teachers and a Head Start administrative representative. After initial
observations, the consultant met with the teachers to discuss the low scores on class-wide
CBMs. The researcher proposed a few ideas, of which the teachers really liked response
cards and the fishing game. Additionally, the teacher proposed the idea of the rubber duck
game because she had seen another teacher use it and thought it was a great idea.

Social validity was assessed throughout the intervention process by consulting with
teachers and asking students how they liked the interventions and whether they thought
they were improving student outcomes. Additionally, questionnaires were filled out by the
teachers towards the end of the year.

**Results**

**Teacher Variables**

Figure 1 shows the number of Spanish words used by the teachers in the classroom.
Pre-intervention (baseline) levels are at 0, 0, and 1. After the consultant began working
with the teachers, levels increased to 6-16 words used in a 30-minute interval.
Figure 1: Spanish Words used in classroom

Table 2 shows the summary statistics for this measure. The percentage of non-overlapping data was 100%. Cohen’s $d$ effect size was -4, which is considered a large effect size.

Table 2: Summary Statistics for Spanish Words Used in the Classroom

<table>
<thead>
<tr>
<th>Summary Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Data Points</td>
<td>Baseline: 3; Intervention: 12</td>
</tr>
<tr>
<td>Baseline Mean</td>
<td>0</td>
</tr>
<tr>
<td>Baseline Standard Deviation</td>
<td>0</td>
</tr>
<tr>
<td>Intervention Mean</td>
<td>10.4</td>
</tr>
<tr>
<td>Intervention Standard Deviation</td>
<td>3.72</td>
</tr>
<tr>
<td>Percent Non-overlapping Data</td>
<td>100%</td>
</tr>
<tr>
<td>Cohen’s $d$</td>
<td>-4</td>
</tr>
</tbody>
</table>
Child Variables.

Figure 2 shows a graph of class-wide letter-naming data. The baseline median number of letters correctly identified in one minute was 2, with a range of 0-12. The mode was 0, which demonstrates that about one-third of the class could not identify any letters. The second point was obtained after the intervention was introduced. The median number of letters identified correctly was 2, with a minimum of 0 and a maximum of 22. The third and fourth progress monitoring points demonstrate a slight increase in the median (to 4 and 5, respectively). The minimum was still 0 for both of these points, but the maximum went as high as 32 letters per minute. Shortly after the staff development, medians increased to 13. Minimums for these points were still at 0, but maximums increase further to 38 and 44.

*Figure 2: Letter Naming Data*
Table 3 shows the summary statistics for this measure. Baseline mean and standard deviation were not reported, because only one point was taken for this phase. 80% of the data were non-overlapping with the baseline point. Cohen’s $D$ was -1.46, which is considered to be a large effect size.

*Table 3: Summary Statistics for Letter Identification Fluency*

<table>
<thead>
<tr>
<th>Summary Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Data Points</td>
<td>Baseline: 1; Response Cards: 2; +Staff Development: 3</td>
</tr>
<tr>
<td>Intervention Mean</td>
<td>7.4</td>
</tr>
<tr>
<td>Intervention Standard Deviation</td>
<td>5.22</td>
</tr>
<tr>
<td>Percent Non-overlapping Data</td>
<td>80%</td>
</tr>
<tr>
<td>Cohen’s d</td>
<td>-1.46</td>
</tr>
</tbody>
</table>

Figure 3 demonstrates the data collected on distributed practice using a zone-sampling method during circle time. Baseline data show 26-32% students responding to teacher prompts. Intervention data show that on average, 33% of students were responding to teacher prompts during the low adherence condition. During the high adherence condition, however, 79-91% of students were responding to teacher prompts.
Table 4 shows the summary statistics for this measure. Percent non-overlapping data between the high adherence condition and baseline was 100%. Cohen’s $d$ was -14.72, which is considered to be a large effect size.

**Table 4: Summary Statistics for Distributed Practice**

<table>
<thead>
<tr>
<th>Summary Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Data Points</td>
<td>Baseline: 3; Low Adherence: 8; High</td>
</tr>
<tr>
<td></td>
<td>Adherence: 6</td>
</tr>
<tr>
<td>Baseline Mean</td>
<td>29.33</td>
</tr>
<tr>
<td>Baseline Standard Deviation</td>
<td>3.06</td>
</tr>
<tr>
<td>High Adherence Mean</td>
<td>87.13</td>
</tr>
<tr>
<td>High Adherence Standard Deviation</td>
<td>4.63</td>
</tr>
<tr>
<td>Percent Non-overlapping Data</td>
<td>100%</td>
</tr>
<tr>
<td>Cohen’s $d$</td>
<td>-14.72</td>
</tr>
</tbody>
</table>
Figures 4 and 5 show the data collected for the students transitioning into kindergarten for whom permission was collected to include data in this portfolio. Student 1 was able to read only 6 letters per minute by the end of the academic year, and did not make significant growth throughout the year. Student 2, on the other hand, was able to read 11 letters per minute by the end of the year. This student met the goal for this year, and progressed from baseline levels.

*Figure 4: Transitioning Student 1*
Social Validity Results

Table 5: Social Validity Results

1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean Teacher Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>I had adequate input in developing the intervention script</td>
<td>4.5</td>
</tr>
<tr>
<td>The intervention script was easy to follow</td>
<td>4.5</td>
</tr>
<tr>
<td>I liked the procedures used in the intervention</td>
<td>4.5</td>
</tr>
<tr>
<td>The intervention was easy to include in my daily routine</td>
<td>4.5</td>
</tr>
<tr>
<td>I would be willing to use this intervention in the future</td>
<td>5</td>
</tr>
<tr>
<td>Overall, the intervention was beneficial to the students</td>
<td>5</td>
</tr>
<tr>
<td>Additional Comments</td>
<td>The ABC cards were/are a really great idea</td>
</tr>
<tr>
<td>Mean Rating</td>
<td>4.67</td>
</tr>
</tbody>
</table>
Discussion

The results of the Spanish language in this consultation show great improvement in the use of Spanish words and phrases in this classroom with a high English Language Learner (ELL) population. Ideally, ELL students should be taught in both Spanish and English to ensure that they are not only getting the proper exposure to language, but also are understanding all of the academic and routine-focused material being presented to them. Although this consultation does not demonstrate this ideal situation, the growth in the use of Spanish in the classroom is certainly a step in the right direction. Giving basic instructions in Spanish and English helps to ensure that the ELL students understand what is expected of them. Additionally, basic concepts such as colors and shapes may be easier to grasp in English when explained in Spanish. Therefore, the progress in the use of Spanish in this classroom may have contributed to a more culturally accepting atmosphere, as well as promoted learning to the large ELL population in the class.

Over the course of the academic year, the median class-wide growth in letter naming fluency (LNF) grew to over the goal of 10. The effect size for the letter-naming fluency measure was -1.46, which indicates a large effect. Only one of the two monitored transitioning students, however, met their goal, which means that this student may not be where they need to be when they start kindergarten next year. The class-wide maximum did increase point by point, which indicates that some students have increased in letter knowledge significantly throughout the year. The consultant’s hypothesis that students were not getting enough practice on their letters was supported by the results of this consultation, especially considering the increased growth after the intervention adherence
increased, and the early literacy staff development took place. There were, however, many barriers to implementing the selected interventions in this consultative case.

First of all, this classroom had multiple challenges, which made prioritizing difficult, and also more than likely contributed to adherence issues. There were multiple students in need of intensive intervention for disruptive behaviors. The class had seven English-Language Learners, some of whom struggled with English Language, understanding instructions, and academic gains. These multiple concerns, as well as the multiple supports created for this classroom to address them, may have been overwhelming for the teachers and may have created issues with intervention adherence.

Despite that intervention adherence was low for most of the year, the consultant was able to demonstrate the difference in distributed practice opportunities with the use of a response cards intervention. During the times when no response cards were used, an average of 33% of the class responded to teacher prompts. These prompts were important instructional opportunities for the students to practice letter identification, letter sounds, and number identification, as well as other important information. During the high adherence condition, 79-91% of students responded to academic prompts. As such, more of the class was using these opportunities to practice, and more of the class was receiving feedback and error correction for their responses.

Towards the end of the year, several of the transitioning students made small gains on LNF probes compared to their earlier scores. This may be due to extra practice provided by the teachers and the consultant. This consultation did not employ an internally valid design, however, so there are multiple factors that may have contributed to this growth. It is important, however, for these students to be able to name some letters
before they start kindergarten next year. Measures are being taken to encourage the parents of these students to work with them over the summer, in order to help prepare them.

Limitations to this consultation include the lack of causality, with the use of an accountability design. Additionally, so many factors went into this consultation, as well as other factors in other classroom supports, that it is difficult to tell what may or may not have had an effect on the academic progress that was seen (higher LNF for some students, etc.). Also, the low intervention adherence throughout most of the year makes it difficult to infer that any growth came from the interventions presented here, due to the fact that they were done sporadically.

Despite these limitations, the response cards intervention shows promise at increasing the distributed practice during important instructional periods to allow more individual practice opportunities, as well as more error correction and feedback. The increase in the use of Spanish language is also a positive result of this consultation, and can certainly help the teachers with ELL students in the future. While several of the transitioning students are slightly behind, they still have time to catch up before they start kindergarten. Some of these students have made excellent gains this year, however.

Social validity data show that the teachers felt as though the interventions were beneficial to their students, were easy to follow, and fit well into their classroom schedule. Despite the multiple barriers to implementation, end of the year growth and social validity indicate that the consultant’s supports may have contributed to important academic gains made by the students in this classroom. Additionally, the teachers commented that the ABC cards (response cards) were a really great idea. This demonstrates that despite the low
adherence, the teachers liked the intervention and may have supported their use in the classroom had there not been other, more pressing challenges present.

This consultation demonstrates the author’s respect for diversity, through supporting the teachers in using more Spanish language for the native Spanish-speakers in the classroom. Additionally, all interventions were developed collaboratively, and the consultant assisted in modeling and implementing the interventions, as well as sharing results with the teachers to demonstrate the positive effects of the interventions. Consultation meetings were held throughout the year to provide feedback and support in implementing the developed interventions. All interventions used were based in research, by encouraging extra practice opportunities, and increased opportunities for error correction and feedback. The consultant employed data-based decision making through changes in intervention practice and use as the year progressed. This consultation also demonstrates the author’s ability to create class-wide, universal supports within Tier 1 of an RtI model.

At the agency level, this was the first year of RtI implementation. Class-wide supports are very important within an RtI model in helping to ensure that all students are getting appropriate, research-based instruction. In a class with multiple barriers such as this, it is difficult to prioritize supports when limited personnel, resources, and time are available to address these multiple needs. Despite this fact, it is still important that some of the students, especially a few who are going to start kindergarten next year, made sufficient gains to be prepared for this transition. Students from disadvantaged backgrounds especially need the extra support, to help them catch up to their not-as-disadvantaged peers. As such, this consultation demonstrates that positive results even for a few children
who are transitioning or who are ELLs, shows promise for the future of RtI in a preschool setting. This process takes several years to completely implement, so with all the varying intensity of supports needed this year, this classroom and these students should be more prepared for next year and beyond due to the amount of support and work done as part of this consultation and others this year.
References


Appendix A: Code for percentage of ASR

<table>
<thead>
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<th>#</th>
<th>Prompt</th>
<th># Kids responding</th>
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</table>

Avg. %:____
Appendix B: Teacher Script for Response Cards

Response Cards Script

1. Hand out 3-4 response cards to each student, and keep at set for yourself.
2. At the beginning of instructional time, remind the students how to use the response cards.
   Demonstrate holding a letter above head so that they can see.
3. During instructional time, prompt the students to hold up the letter you’re working on.
   (E.g., “A’, everybody hold your ‘A’ above your head.”)
4. Scan the group and offer praise such as “Yes, that’s the letter ‘A’” or “Right!” for correct responses. Offer constructive feedback identifying what is wrong for incorrect answers such as “That is a ‘B’. Try to find the ‘A’.”
5. After about 20 seconds, hold up the correct card so that all students can see the correct letter and say, “Look, this is an ‘A’. What letter is this?”
6. Instruct students to put their letter cards back into their envelope and back in their cubbies when circle time is over.
Appendix C: Teacher Script for Rubber Duck Literacy Game

**Rubber Ducks Script**

1. Show the child a picture from the stack.
2. Ask the child to name the picture (e.g., apple).
3. Ask the child to identify the first sound in the word (e.g., /a/)
4. Tell the child to find the rubber duck with the letter on it that corresponds to the sound.
Appendix D: Teacher’s Script for Fishing Literacy Game

Fishing Game Script

1. Have the child fish out a letter or number with the fishing pole.

2. Ask the child, "What letter?"

3. If the child responds correctly, give praise and repeat the correct letter or number name.

4. If the child responds incorrectly, tell them the correct name of the letter or number, and have the child repeat it.
The Effects of a Small Group Social Skill Intervention for a Group of Kindergarteners

Literature Review and Methods Sections
Co-Authored by
Bethany Rausch, M.Ed.
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Social skills and social competence are deemed by parents and school professionals to be necessary skills for children of all ages. Teaching social skills and how to use them to play and work with others is important to long term social and academic success, and deficits in these areas could be related to poor academic performance and social adjustment problems in adolescence and adulthood (Elliot, Roach, & Beddow, 2008). Additionally, social competency difficulties are defined as part of eligibility standards according to the Individuals with Disabilities Education Act (IDEA) (Gresham, Cook, & Crews, 2004). Therefore, children who do not possess or exhibit appropriate social skills should be targeted for intervention as early as possible in order to promote positive social and academic development and prevent long-term adjustment issues.

Social skills can be defined as “socially acceptable, learned behaviors that enable a person to interact effectively with others and to avoid or inhibit socially unacceptable behaviors” (Gresham et al., 2004, p. 35). Because these behaviors are learned, it is important that they are being taught and practiced much like any other academic or behavior skill in a classroom. Not learning social skills could lead to negative child-child and adult-child relationships both in school and in the community (Elliot et al., 2008).

Social skills interventions should be positive and use non-aversive methods. Most social skills interventions involve embedded, naturalistic instruction and practice, or small-group instruction and practice. The literature on Social Skills Training (SST) as an intervention
has produced mixed results, but some common components seem to produce better effects than others.

Gresham (2001) describes the most effective SST programs as having components that include modeling, feedback, practice, and rewards. In his review of the literature, he also describes coaching as an effective practice. Coaching involves teaching of the rules or standards of using the specific social skill, behavior reversal, and response feedback and discussions. Gresham also argues that the most effective group interventions for social skills match the intervention to the specific skills deficit. Deficits in social skills could be skill deficits, where the student has never learned the specific skill, performance deficits, where the student has learned the skill but does not perform it in his/her everyday environment, or self-control deficits, where the student may or may not have acquired the skill, but his/her impulses and reactions are blocking him/her from using it effectively.

Gresham and others (2004) reported an analytic review of the literature describing components and effectiveness of SST for students classified as Emotionally/Behaviorally Disturbed (EBD). Based on this review, they reported that SST is most effective when used in small groups if the interventionist plans for generalization. One of the weaknesses of small group instruction in which a child is removed from his/her environment is that the skill being learned may not generalize to other environments. Additionally, simply teaching a social skill does not necessarily provide context for when and when not to use the new skill. Therefore, facilitating generalization is one of the most important components for maintenance for this type of intervention.

Their review also showed that student outcomes were directly related to the definition of the skill being targeted for intervention. An operational definition was lacking
in many cases, and without this, it was difficult to measure the exact construct that was being targeted. The researchers also reported that SST is most effective when skills were directly matched to identified deficits, and skills were targeted that were reinforced in the student’s natural environment. This reinforcement is important because reinforcement for alternative, unacceptable behaviors may be higher than reinforcement for the appropriate social behaviors, which would naturally lead the student to engage in the inappropriate behaviors more frequently. Overall, the researchers found that in students with EBD, 63% showed improvement in social skills because of the SST (Gresham et al., 2004).

Gresham, Sugai, and Horner (2001) looked at multiple meta-analyses of the effects of SST on students with high-incidence disabilities. They reported that the most effective strategies appear to be a combination of modeling, reinforcement, and coaching procedures. Cognitive-behavioral procedures, which include problem solving and self-instructional methods, are not as effective on outcomes. Additionally, they reported that most studies on SST do not plan for generalization, and therefore the maintenance over time and across settings is very low. There does appear to be a relationship between time/amount of SST and intervention effects. Once again, the researchers found that studies that match skill deficits with intervention strategies were much more likely to be effective.

Another important component of SST interventions appears to be treatment adherence (Gresham et al., 2001). It is hard to determine whether or not inadequate gains in social skill performance/acquisition are attributed to the weakness of the intervention when a study does not report on the adherence of critical intervention steps. The researchers also describe the need for the assessment procedures to match the
intervention, skill deficit, and operational definition. Therefore, a social skill should be defined in a measureable way, the type of deficit should be determined, and assessments should match the skill(s) being targeted as well as the operational definition of the behavior.

A similar analysis by Cook and others (2008) looked at meta-analysis on SST for students with Emotional/Behavioral Disorders, specifically in secondary students. They reported that SST helped 2/3 of these students improve on important social skills compared to controls. They also found that social learning theories provided the best student outcomes in SST, compared to operant- or cognitive-based programs. They also discussed the importance of matching the skill instruction to the students’ developmental level. Based on the research, SST appears to be most effective for very young children (e.g., preschool), and least effective for elementary and middle school age children.

In summary, best practices in social skill interventions involve matching the intervention to the target students’ individual needs and deficits, involve the components of modeling, prompting, corrective feedback, and more opportunities to practice, and reinforcement within the learning environment and in the natural environment. The more time that be dedicated to SST, the more likely the intervention will be to produce positive outcomes. Additionally, it is important to develop an intervention around the students’ current developmental level. One of the most important things to consider when developing an SST intervention is planning for and facilitating generalization. Even though the intervention may successfully teach the skill, without generalization this learning will not last over time or throughout different settings, rendering the training useless.
Methods

Participants and Setting

The participants in this group intervention were five kindergarten students who attend an urban primary school. Group members were recruited based on teacher referral for students who were thought to have deficits in basic social skills. The small group was comprised of five members; 4 boys and 1 girl; all of ages 5 and 6 (kindergarten level). All five students were African-American. Teachers reported that the students were defiant, noncompliant, and had problems interacting with peers. The group leaders did not need to narrow the recruitment pool, as five referred students was an appropriate number for a small group intervention. Parent permission was obtained prior to the needs assessment and the start of the group. See Appendix A for parent permission slip.

The small group was led by two practicum students, who were assigned to this school for practicum field experience. This small group was created as part of a class assignment, and experiences and data collected were to be used as part of these students’ portfolios.

Targeted Variables

The skills selected for intervention were accepting consequences, ignoring, following directions, interrupting, sharing, dealing with mistakes, accepting no, dealing with losing, and playing a game. These skills were chosen based on Skillstreaming program (McGinnis & Goldstein, 2003) checklists used for a needs assessment and, ultimately, teacher preference. The teachers and parents filled out the checklist, and the group leaders took average ratings on each skill question across the five students. The skills chosen were the skills with the lowest average ratings across the group. The skills
chosen were then discussed with the teachers prior to the beginning of the group, who decided that these were appropriate for their students.

Progress was monitored via a shortened version of the Skillstreaming checklist used to collect baseline data and assess needs (McGinnis & Goldstein, 2003). The shortened form targeted data on the specific social skills chosen for intervention. The checklist was completed 4 weeks into the intervention, as well as after the intervention was completed. The group leaders calculated averages of teacher ratings on these checklists across the students. Additionally, shortened checklists were sent home to the parents, and these averages were calculated separately. For most of the students in the group, however, mid- and end-point parental surveys were not returned to the school. A final survey was sent home after the last group meeting, but as of the time of this report, only one parent survey was returned. These averages assisted in monitoring the effectiveness of the intervention on the entire group. Individual ratings determined progress for each student in the group.

Adherence. Treatment adherence checks were completed by one of the two group leaders for 25% of intervention sessions (twice throughout the 8 weeks). The group leaders created a checklist of group intervention steps based on the agenda.

Hypothesis

The practicum students hypothesized, based on the needs assessment, that the students referred for this group had not yet learned about or acquired the social skills being targeted. As such, the intervention chosen targeted skills acquisition and skill practice to help promote both acquisition and fluency.
**Intervention Procedures**

**Accountability Design**

The practicum students used an A/B accountability design, to measure the effects of the intervention on the acquisition and fluency of targeted social skills.

**Baseline**

Baseline data were collected by having the target students’ teachers fill out the teacher Skillstreaming program checklist (McGinnis & Goldstein, 2003). Additionally, a checklist was sent home for the parents. The data from the checklists used for baseline were the parent and teacher ratings on the questions reflecting the skills that were going to be targeted for intervention. These data also were used to conduct a needs assessment, and determine which social skills the group would target throughout the 8 weeks of intervention.

**Intervention**

The group met one afternoon a week for a 30-minute session, for a total of nine weeks. The first week was introductions to the group and goal setting, as well as the first social skill lesson, and the following seven weeks targeted the predetermined social skills. The last week was a party for the students to celebrate their progress, as well as review the social skills that had been taught during the group meeting times.

The teachers were oriented to the group through a meeting with the group leaders prior to the first meeting. At the meeting, the teachers gave their input on selection of target skills, and were informed of the activities that the students would be participating in. The teachers also were informed of which social skill(s) were worked on each week in order to reinforce the use of this skill in the classroom. Parents were oriented to the group
via an informational permission slip (See Appendix A). Parents were informed of the specific skills being worked on in the group, so that they could work with their child and reinforce the social skill in the home. Students were oriented to the group during the first group meeting. During this time, group rules were explained, as well as the purpose and format of the group.

The intervention used for this small group was Skillstreaming in Early Childhood, which was preferred by the school (McGinnis & Goldstein, 2003). This intervention uses empirically based methods to teach social skills and encourage practice and generalization. The group leaders began the group with an icebreaker activity each week. After this, the leaders went over the group rules, which included listening to the leaders, keeping hands and feet to yourself, and trying your best, among others. The activities involved in Skillstreaming are introducing/defining the skill(s), modeling the skill, discussing of when to (and not to) use the skill, role playing/student practice, and individual feedback from the leaders. The group also completed simple homework assignments after each session in order to promote practice and generalization.

The group leaders developed a behavior management plan that involves reinforcement of rule-following behavior on a sticker chart. The students each received one sticker for every activity they completed without breaking any rules. At the end of the session, each student who has received four (of five possible) stickers received a “hand.” “Hands” are the school’s reward for positive behavior as part of their Positive Behavior Support model. See Appendix B for group agendas.

**Generalization.** The group leaders planned for generalization by informing the parents and teachers weekly what new skill the student was working on. The parents and
teachers were instructed to promote practice of the new skill and reinforce the student’s behavior when he/she demonstrated the skill. Additionally, the students were assigned homework each week aimed at practicing the newly acquired skill in the classroom at home. Each week, the group participants would rate him/herself on the performance of the practice assigned for homework the previous week.

**Social Validity**

Social validity was collected informally through conversation/consultation with the teachers whose students were in the group. Additionally, a questionnaire was given after the last group meeting to both teachers to have them rate the utility of the intervention, their input on the intervention, and whether or not the intervention was beneficial to their students.

**Goals**

Goals were set for each individual student after the first group meeting, based on the ratings that the teachers and parents gave for each student. As a group, the goal overall was an improvement on the specific social skills that the group targeted. Specifically, the goal was to increase average ratings to 3 for each skill. A rating of 3 describes the student as being sometimes good at using the skill. Individual student goals are specified on the graphs in the results section.

**Results**

**Adherence Results**

Adherence to the intervention procedures was 100% for both observation sessions.
Group Results

Figure 1 shows the results of the social skills intervention on teacher ratings, averaged across the whole group. The goal of an average of 3 was met for 7 of 9 skills, including, following directions, interrupting, sharing, ignoring, dealing with losing, accepting, and playing a game. For the dealing with mistakes and accepting consequences skills, average teacher ratings on the post test were about 2.5. All skills showed an increased average rating from pre- to post-test.

Figure 1: Teacher Rating Averages across the Group

Individual Results

The following four graphs represent individual group members’ progress on the targeted social skills based on teacher ratings. Only four signed permission forms were
returned to the school to include their student’s data in this report, so one student’s data were not reported here, although this student’s data is included in the group averages results above. All of these student’s names are not included in the results so as to protect their identities.

Figure 2 shows the results of the social skills intervention on the first student. This student’s overall goal was set at a rating of 4 for each skill (defined as the child is often good at using this skill), due to the fact that his/her pre-group ratings were higher than most of the rest of the group. The student met this goal for 5 of 9 skills: following directions, interrupting, dealing with losing, accepting no, and playing a game. He/she received a rating of 3.5 for dealing with mistakes and accepting consequences, and a rating of 3 for ignoring and sharing, which was an increase from baseline levels. Overall, this student’s ratings increased for all skills from pre-group ratings.

*Figure 2: Student 1’s Social Skills Progress*
Figure 3 shows the results of the social skills intervention on the second student. The student’s overall goal was set at a rating of 3 for each skill. The student met this goal for 5 of 9 skills including: interrupting, sharing, dealing with losing, accepting no, and playing a game. The student's final ratings were 2 for following directions and ignoring. Following directions stayed constant from pre- to post-tests. For dealing with mistakes, the goal was met at mid-point but returned to baseline levels at post-test. For ignoring, the student did not meet his/her goal, but did increase at mid- and post-tests from baseline level. His/her final rating for accepting consequences was 2.5. With the exception of the following directions and accepting consequences skills, this student’s final ratings were higher than pre-group ratings.

*Figure 3: Student 2’s Social Skills Progress*
Figure 4 shows the results of the social skills intervention on the second student, as rated by his/her parents. This is the only student for whom the authors were able to collect pre-, mid-, and post-test data to compare with the teacher’s ratings. Initial parent ratings were much higher, on average, than initial teacher ratings. According to the parent, the student met his/her goal for 5 of 9 skills: following directions, dealing with mistakes, accepting consequences, interrupting, and ignoring. The student was rated at a level of 2 for all three tests for dealing with losing and accepting no. He/she was rated a 3 for the first two tests for sharing and playing a game, but ratings decreased to a 2 for the final test for both of these skills.

*Figure 4: Student 2’s Social Skills Progress, Parent Ratings*
Figure 5 shows the results of the social skills intervention on the third student. This student’s goals were set at a rating of 3 for each skill. The goal was reached for 4 of 9 skills: following directions, interrupting, ignoring, and dealing with losing. For dealing with mistakes, sharing, accepting no, and playing a game, this student’s final ratings were at 2, which was, for most, an increase over baseline levels. For accepting consequences, this student’s final rating was a 1. For this student, several of the ratings went down from mid-test to post-test (e.g., dealing with mistakes). However, accepting consequences was the only skill the student did not show improvement on from pre-test to post-test.

*Figure 5: Student 3’s Social Skills Progress*

Figure 6 shows the results of the social skills intervention for the fourth student. This student’s overall goal was to increase to a rating of 2 for each goal (defined as the child
seldom being good at using the skill), due to the fact that he/she was lower than most of
the others in the group on pre-test ratings. This student met his/her goal for 2 of the 9
skills: following directions and sharing. For playing a game, the student’s mid-test rating
was at 2, but post-test rating returned to baseline level. The remaining skills’ ratings for all
three tests were stable throughout the intervention.

Figure 6: Student 4’s Social Skills Progress

Social Validity Results

Table 1 shows the results of the social validity questionnaire for one teacher. The
responses range from 1: Strongly Disagree, to 5: Strongly Agree.
Table 1: Teacher 1’s Social Validity Results

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<tr>
<td>I liked the procedures used in the intervention</td>
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<tr>
<td>The intervention was easy to include in my daily routine</td>
<td>5</td>
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<tr>
<td>I would be willing to use this intervention in the future</td>
<td>5</td>
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<tr>
<td>Overall, the intervention was beneficial for the student(s)</td>
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<tr>
<td>Mean Rating</td>
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For the second teacher whose students were in this group, the ratings on the questionnaire were not circled. This teacher instead left comments saying that she has seen improvements in her students, and has seen her students want to make improvements.

Social validity was collected informally by the group leaders as well. Conversations with the teachers and students themselves indicate that, for most, the group intervention has been beneficial for the students. Most of the students have made progress on several of the skills, and have been working hard to practice using the other skills.

Discussion

As a group, the social skills intervention seems to have improved teacher ratings on the students’ demonstration of these skills from pre-group to post-group. For two skills (i.e., dealing with mistakes and accepting consequences), the group goal was not met, but still improved from pre-test ratings. As such, it is possible that this intervention had an overall positive impact on acquisition and fluency of these social skills for the five students in the group.
Individually, the data varied from student to student. For the first two students, their goals were met on the majority of the skill’s ratings, and progress was made for all but one skill. For the third student, several goals were met, and most skills’ ratings improved from pre-test to mid-test. By post-test, however, many of this student’s ratings went down to pre-test levels. This could be for any number of reasons. First of all, it is possible that the student had acquired the skill from the group, demonstrated the skill, but wasn’t reinforced in the classroom for using it. Therefore, he/she stopped demonstrating the skill, which resulted in a lower teacher rating. It is also possible that this student already possessed the skills targeted in this group, but was not fluent in using them. While the group practice/homework should have still assisted him/her in becoming more fluent in using these skills, it is possible that this did not happen for this student due to the fact that acquisition was more heavily targeted.

It is important to note that there were differences in parent and teacher ratings for the second student. The parent rated the student higher than the teacher on initial probes. Additionally, the parent stated that the student had met his/her goal for following directions, dealing with mistakes, accepting consequences, interrupting, and ignoring; whereas, of these skills, the teacher only stated that the student met his/her goal on interrupting. The teacher rated this student as improving from baseline on sharing, dealing with losing, accepting no, and playing a game; whereas the parent either rated the student the same from pre- to post-tests, or described the student as declining in rating over this time. These differences could be due to the child’s performance differing from home to school. It is also possible that the child is able to exhibit these behaviors, but does not do so in the classroom because it is not reinforced. This group targeted acquisition, but the extra
practice should have helped this student become more fluent in these skills, even if the hypothesis that the student did not possess these skills was inaccurate.

For the third student, only two goals were met. The rest of the social skills’ ratings either stayed the same across the three progress monitoring conditions, or even went down in one case (playing a game). For this student, multiple behavior problems likely impeded any progress in the group. It is quite possible that the needs assessment did not accurately reflect this student’s needs, and he/she is likely in need of a much more intensive intervention that could not have been provided by this group. During group meetings, this student rarely paid attention, frequently crawled under the table, and refused to leave at the end of the group. The group leaders attempted individual consultation with the student before the group and individualized reinforcement, but this student’s behavior did not improve much with these extra considerations. As such, the group leaders would recommend continuing, intensive and individualized intervention(s) for this student to help him/her increase acquisition and fluency of necessary social skills.

These data are limited in that they are subjective, and only from one source (with the exception of for one student). The group leaders attempted to collect progress monitoring data mid- and post-test from the parents, but only one was returned for the mid-point test and one for the post test. Additionally, one of the five students scored fairly low on pre-, mid-, and post-tests. These points may cause the group averages to be slightly skewed. Therefore, the individual progress may be more telling of the impact of the social skills intervention than the group average. Ideally, the group leaders would have liked to incorporate another form of progress monitoring other than teacher ratings, such as direct observation. This method would have been limited, however, in that it may have been
difficult to sample across observation periods in order to observe the social skill. Additionally, this would have been difficult due to time constraints. With the lack of return of the parent data, however, the teachers’ ratings were the only method of progress monitoring that could be used to track progress. For the one student for whom the parent surveys were returned, the data differ significantly from the teacher ratings. This brings into question the reliability of the data.

While the group leaders attempted to plan for generalization, there is much research on the impact of social skills groups like these and the inability of their results to generalize. For several of these students, it is possible that progress was impeded by the lack of connection of the material learned to the classroom and home. In the future, the group leaders would try and incorporate more in-school or at-home practice, possibly by building in an intervention script for the teachers to encourage more monitoring, prompting, reinforcement, and feedback for the students’ use of social skills in the classroom.

In addition, the group leaders’ attempt to improve Student 4’s behavior was reactive, instead of proactive. This student demonstrated some behavior problems from the very first group, but it wasn’t until the third or fourth group meeting that the leaders decided to intervene. A behavior plan for the whole group had been in place, but no plan for any student who did not respond to these contingencies was set up. After the leaders tried to intervene with individual consultation and unique rewards (based on teacher-identified student preference), the student’s behavior actually got worse. For several of the groups, the student had to be removed from the room by the principal due to his/her refusal to leave. This caused a lot of trouble for school personnel, but also caused the
student to be removed from his classroom for an additional 15-20 minutes after the group ended. Had the leaders been more prepared by picking up on these problems during the needs assessment, or pre-planning for more severe behavior, it is possible that these situations would not have progressed so far.

There was one student, whose data is not presented here because parent permission was not given, who was absent for three of the nine group meetings. This likely impeded on his/her social skills progress. In the future, the group leaders would have this group meet more than once a week, so that students who may miss groups would not be as effected by missing that class.

This social skills group demonstrates the author’s ability to plan and implement a research-based small group intervention, supporting a scientist-practitioner model. Additionally, the author and co-leader demonstrated use of data-based decision making, especially with the student who exhibited challenging behaviors. For this student, an effort was made to assist his progress in the group by dealing separately with his/her challenging behaviors, although this did not seem to help his/her progress. In addition, the co-leaders worked collaboratively with parents and teachers to help reinforce the behaviors taught in the classroom and at home.

Despite the limitations to these data and the barriers to successful implementation of this social skills intervention, overall the group made improvements, on average, on teacher ratings for every skill taught in this group. Individual data vary from student to student. Social validity data suggest that the classroom teachers did see overall improvement in these students’ behaviors. These data, and the progress monitoring data,
demonstrate that Skillstreaming, within the context of small-group instruction, may be effective at teaching and practicing important social skills.
References


Appendix A: Parent Permission Slip

Dear Parent:

Based on discussions with the Kindergarten teachers at XXXXXXX Primary, we have decided to put together a small group educational opportunity for our students that will be geared towards learning and improving their social skills. This group will focus on learning new skills, as well as allowing students to practice the skills they learn or already possess. Skills that may be taught include: basic social skills, school-related skills, anger management skills and friendship-making skills. We are asking for your permission for your child to participate in this group.

This small group will be for 8 weeks on Tuesday afternoons at 1:30. This time was chosen so that your child will not miss out on the educational opportunities in their classroom. Each session will last for approximately 30 minutes and there is no cost to you for your child’s participation in this group. A classroom has been chosen in Primary South itself and the group will be led by 2 University School Psychology Graduate School students. These students are in their second year of graduate school and both have their Masters of Education degree. They will be closely supervised by the school psychologist as well as University faculty.

Your consent is needed for your child to be a participant in the group, as well as for the trainees to work with your child. All information about your child is confidential and consent and participation are voluntary. You have the right to withdraw consent at any time without hurting your relationship with the school or the University of Cincinnati. If you have any questions about the use of the information, your child’s rights, or are concerned that the participation in the project will affect your child’s behavior at home, please contact XXXXX at the school.

Please send this form back to school with your child by February 5th indicating if you would like your child to, or not to, participate in this group. If you choose to give your consent, please also fill out the attached survey and send it in with this consent form.

I give consent for: Jessica Dunwoodie M.Ed. and Elizabeth Rausch M.Ed. (graduate students) to work with my child _______________________ (Child’s Name) in a small social skills group on Tuesday afternoons at 1:30.

Signature of Parent/Guardian ____________________________ Date _________

I do not want my child ___________________ (Child’s Name) to participate in the social skills group
Signature of Parent/Guardian ____________________________ Date _________
Appendix B: Agenda for Group Intervention

Week 1 – Introduction to group
1. Introduction to the group and leaders
2. Ice breaker – Name Game Song
3. Rules
4. Goal setting
5. Introducing/Defining the skill - Following Directions
   a. Listen
   b. Think about it
   c. Ask if needed
   d. Do it
6. Modeling the Skill
7. Discussing when and when not to use the skill
8. Role Play
9. Finding the Sticker Activity
10. Homework and Parent Notes

Week 2 – Dealing With Mistakes
1. Reminder of the Rules
2. Ice breaker - Animal Game
3. Introducing/Defining the skill
   a. Say, “It’s OK to make mistakes. Everybody makes mistakes”
   b. Plan for next time
4. Modeling the Skill
5. Discussing when and when not to use the skill
6. “Simon Says” Game
7. Individual Feedback
8. Homework and Parent Notes

Week 3 – Accepting Consequences
1. Introduction to the group and reminder of rules
2. Ice breaker – Dancing “I SPY” game
3. Introducing/Defining the skill
   a. Stop and Think
   b. Decide if you’re wrong
   c. Say, “Yes, I did it. I’m Sorry”
   d. Follow the Direction
4. Modeling the Skill
5. Discussing when and when not to use the skill
6. Role Play
7. Individual Feedback
8. Homework and Parent Notes
Week 4 - Interrupting
1. Reminder of the Rules
2. Ice breaker – Talent Show
3. Introducing/Defining the skill
   a. Decide if you need to
   b. Walk to the person
   c. Wait
   d. Say, “Excuse me.”
4. Modeling the Skill
5. Discussing when and when not to use the skill
6. Role Play
7. Individual Feedback
8. Homework and Parent Notes

Week 5 - Ignoring
1. Reminder of the Rules
2. Ice breaker – Card Game – Nice things about yourself
3. Introducing/Defining the skill
   a. Look Away
   b. Close your Ears
   c. Be Quiet
4. Modeling the Skill
5. Discussing when and when not to use the skill
6. Practicing Ignoring the Teacher
7. Individual Feedback
8. Homework and Parent Notes

Week 6 – Sharing
1. Reminder of the Rules
2. Ice breaker – Human Knot Game
3. Introducing/Defining the skill
   a. Make a sharing plan
   b. Ask.
   c. Do it
4. Modeling the Skill
5. Discussing when and when not to use the skill
6. Art Activity
7. Individual Feedback
8. Homework and Parent Notes

Week 7 – Accepting/Dealing with losing
1. Reminder of the Rules
2. Ice breaker – Magic Wand
3. Introducing/Defining the skill
   a. ACCEPTING
i. Stop and think
ii. Chose
   1. Do something else
   2. Ask to talk
iii. Do it
   b. DEALING WITH LOSING
      i. Say, “Everybody can’t win”
      ii. Say, “Maybe I’ll win next time”
      iii. Do something else
4. Modeling the Skill
5. Discussing when and when not to use the skill
6. “MOTHER MAY I” Game
7. Individual Feedback
8. Homework and Parent Notes

Week 8 – Review and Wrap Up
1. Reminder of the Rules
2. Ice breaker – Ha Ha Game
3. Remembering/Defining the skills
4. Modeling the skills
5. Discussing when and when not to use the skills
6. Demonstrating skills
7. Individual Feedback
8. Parent Notes

Week 9 – Playing a Game/Party

1. Reminder of the Rules
2. PARTY
The Effects of a Taped-Word Intervention for Sight Words and Blending Activities on a First-graders Reading Skills

A first grade student in a Midwestern elementary school was referred by her teacher due to academic concerns. The teacher requested supports for the student’s reading and math skills, which were significantly lower than her peers’. A school psychology practicum student was assigned to this case as a consultant. The student’s reading and math skills were assessed, and interventions were developed to work on the student’s word-blending skills, sight word identification, and early numeracy skills.

Within a Response to Intervention (RtI) model, Tier 3 supports with intensive interventions are necessary for students who are not responding to supports at the Tier 1 and Tier 2 levels. It is important that such students are targeted for intervention as early as possible, to ensure that they are caught up to their peers so that the gap in instruction does not widen as the student progresses through grade levels. It is especially important for teachers and other school personnel to target reading for students who are struggling, because reading is an important skill to promote learning in all other facets of education.

**Phonics Instruction**

Research has shown that early indicators of later reading success include phonemic awareness, phonics instruction, and reading fluency, among other things (National Reading Panel, 2000). Phonics instruction is direct instruction of letter-sound correspondences and their use in reading and spelling. The report from the National Reading Panel (NRP) indicated that in a meta-analysis of research studies on phonics instruction, this method enhanced children’s success in learning to read and is also a more effective method than instructional methods that teach little or no phonics (2000).
One type of phonics instruction, synthetic phonics instruction, involves teaching students to convert letters into sounds to form recognizable words. This method has shown to be effective both for students with learning disabilities, as well as students who are low achieving in reading but who do not have a learning disability. This method has also been demonstrated to be more effective in increasing alphabetic knowledge and word reading skills with children from low Socioeconomic Status backgrounds (NRP, 2000). First graders receiving phonics instruction demonstrated an increase in ability to decode and spell, as well as an increase in comprehension of text. Phonics instruction is an important educational tool for both early readers and for readers who are struggling in later grades.

**Taped-Word Interventions**

Taped-word interventions have shown great promise as an intervention designed to target sight word acquisition and fluency. This intervention is a self-managed procedure that can be beneficial because it provides differentiated, individualized instruction with little assistance required from the teacher (Freeman & McLaughlin, 1984). A study by Bliss, Skinner, and Adams (2006) examined the effects of a taped-word intervention on a 13-year old English Language Learner’s sight word reading. The researchers used 120 Dolch sight words and tested the effects of the intervention on the amount of sight words the student could read in one minute. The word lists were read three times on the tapes. During the first reading, the sight words were read after a 1-second delay. The second time, there was a 3-second delay, and the final time, there was no delay. In a multiple baselines across word lists design, the student’s sight words read correctly showed rapid increases during the intervention phase from the baseline phase.
Another study by Skinner and Johnson (1995) looked at the effects of a taped-word intervention on three elementary students with Emotional/Behavior Disorders (EBD). In this study, the researchers used an alternating treatments design with three conditions: baseline, taped word read every second, and taped word read every five seconds. They measured the effect of the intervention on number of words read correctly per minute. All three students showed an increase in the number of words read correctly per minute during the intervention phases from the baseline phase. Two of the students performed better after the slower list was read, and one student performed the same for both interventions.

Freeman and McLaughlin (1984) used a taped-word intervention with six male high school students who were significantly behind in reading skills. The researchers identified sight words from vocabulary lists, and read all the words off the list in a minute. The students were instructed to read along with the recording, and then were asked to read the words without the tape as fast as they could when the session was over. Results from this assessment used within a multiple baselines across participants design showed an increase in correctly read words and a decrease in errors made while reading the word lists on their own.

Shapiro and McCurdy (1989) conducted a similar study, but with fairly different results. They looked at five high school students with EBD, all determined to be at or below a 6th grade reading level. The researchers pulled the vocabulary words right out of several reading passages, and then read them on the tape in random order. The participants were instructed to read along with the tape. The dependent variables in this study were oral reading fluency on the word lists, oral reading fluency on the passages, comprehension, and
target words read in context. The researchers aimed to discover whether or the taped-word intervention had an effect only on that word list, or whether the learned words would generalize to reading passages as well. The results show a slight increase in the rate words were read and words read correctly, but these results did not generalize to rate of reading the passage. Two of the participants did read the target words more accurately within the passage after the taped-words intervention, but three did not. The results of this study show the limitations of taped-word interventions, specifically on generalizing the learned words to passages.

**Listening Passage Preview**

A listening passage preview (LPP) intervention targets reading fluency by allowing the student to preview the passage before reading it. This can be accomplished by a teacher or aide reading the passage aloud to the student while the student follows along, or by a taped preview wherein the student listens to the passage on tape before reading the passage herself. For example, Daly and Martens (1994) conducted a study with four students with learning disabilities and measured the effects of an LPP intervention, compared to subject passage preview and taped words. During the subject passage preview, the student was allowed to practice the passage once before fluency was assessed. During the taped words condition, the student listened to and practiced selected words from the passage before fluency was assessed. The researchers found that the LPP condition yielded the greatest immediate increases in both fluency and accuracy in reading passages.

Another study by Begency, Krouse, Ross, and Mitchell (2009) compared the effects of an LPP intervention, a repeated readings intervention, and a listening only condition for
four second grade students. The researchers found that the repeated reading condition, in which the student would read the same passage repeatedly until he/she could read it fluently, produced the most significant results for one of the four students. For the other three students, the LPP intervention and the repeated reading intervention produced equally significant results. For all students, LPP produced better outcomes on reading fluency than the listening only condition, which served as a control condition.

**Math practice**

The National Council of Teachers in Mathematics (2003) list knowledge of numbers and basic operations as key components of mathematics instruction for first graders, among other things. Skills in this area include whole number identification, number sense, quantity discrimination, basic addition, and basic subtraction. By the end of the second grade, students should be able to understand and identify numbers, understand meanings of operations, and compute single-digit addition and subtraction problems fluently. Additionally, several early indicators of math performance have been identified that can predict later success in academic mathematics. These early indicators include number identification, missing number identification, and basic addition and subtraction fluency (NCTM, 2003).

Many factors play into a student’s ability to master these necessary basic math skills. Byrnes and Wasik (2009) conducted a longitudinal study of various variables that could contribute to math success. These variables included personal variables, such as socioeconomic status (SES), gender, and ethnicity, and academic variables, such as prerequisite skills and exposure to math content. They found that SES was related to both parent education and educational expectations from parents, and this was predictive of
achievement in math. Additionally, the researchers found that the more exposure to practice opportunities for basic math skills and operations, both at home and in the classroom, led to greater achievement. It is clear that increased practice opportunities in the classroom, especially for students who do not get a lot of practice at home, can lead to greater achievement in math. Additionally, students who come into school without necessary pre-requisite skills (such as fluency in number identification and other early indicators) should be allowed extra practice opportunities in the classroom to help them catch up to their peers.

One way to provide students with extra practice opportunities in the classroom is to provide them with manipulatives that can help them learn to visualize math concepts, as well as gain insights to fundamentals (DeGeorge & Santoro, 2004). Additionally, worksheets and flash cards can be used to provide a student with extra practice. For example, Fuson and Brinko (1985) conducted a study on the effectiveness of flash cards on basic mathematics facts. They compared the effects of a flash card intervention and a microcomputer intervention for 84 elementary students identified as struggling in math. The researchers found that in 6 weeks, flash cards helped improve fluency in basic math operations, on average, for these students. Additionally, they found that flash cards increased the learning and accuracy just as much as computer-based math drills. This study highlights the importance of extra practice interventions on fluency of basic math operations, regardless of intervention form.

**Current Consultation.** The current consultation examined the effects of a taped-word intervention on a first-graders reading skills, but with several changes from the above described interventions. First of all, the student was much younger than most of the
subjects listed above, and therefore was at a significantly different reading level. Secondly, the consultant used the taped-word intervention on sight word acquisition, but additionally targeted word blending using synthetic phonics instruction. Lastly, the consultant included complete sentences using the newly learned words in order to promote generalization. After several months, the intervention was changed to a listening passage preview intervention to target the student’s fluency. Additionally, extra math practice opportunities were introduced to assist the student with basic numeracy, addition, and subtraction skills.

Methods

Participants

The participant in this consultation is a 7-year old first grade girl referred by her teacher for concerns in reading. On her benchmark DIBELS assessment, the girl scored in the “intensive intervention” range. She is in a first grade class in a rural elementary school with about 20 other students. There is one teacher in the room at all times. The participant was identified as being from a low SES family. Parent consent was given for assessment and intervention, and the student gave assent to participate. The author of this paper is a graduate student assigned to work with the school psychologist for this school district. This consultative case was assigned to her as part of this practicum work.

Targeted Variables

The target variables in this consultation were sight words acquired and DIBELS nonsense word fluency scores. The sight word list was comprised of 42 pre-primer Dolch Sight Words. This variable was assessed weekly. The sight words were shown to the student on flash cards and she was asked to read them. The number of words the student
read correctly was recorded and graphed each week. This variable was targeted for intervention because the student was very far behind her peers in both the level and number of sight words she could identify. After three months of intervention, the student had mastered the pre-primer Dolch Word list, so the intervention moved on to target the primer list.

Additionally, DIBELS Nonsense Word Fluency (NWF) probes were given once a week. These probes assess a student’s ability to correspond letters with sounds and blend these sounds together to read a word. The score on this assessment was recorded as sounds read correctly per minute. This variable was targeted for intervention because the student was significantly below benchmark on her initial first grade assessment. This skill in understanding letter sound correspondence and word blending are important skills to have in order to learn to read.

Additionally, basic math skills and operations were progress monitored using curriculum based measurements generated by the consultant from intervention central (www.interventioncentral.com). Number identification fluency, missing number fluency, basic addition fluency, and basic subtraction fluency were measured. The number identification fluency was measured by identifying how many numbers between 1 and 20 the student could name in one minute from a randomly generated probe. Missing number fluency probes contained rows of three-number sequences in which one number had been removed. The number of these missing numbers the student could identify in one minute was measured. The basic addition probes consisted of 12 single-digit addition problems, and the student was asked to solve as many of these as she could in 1 minute. The single
digit subtraction probe also contained 12 problems, and the student was asked to solve as many of these as she could in one minute.

Interobserver Agreement was collected on all measures of the dependent variables for 25% of measurement sessions.

**Interobserver Agreement (IOA) Results**

*Table 1: Nonsense Word Fluency IOA*

<table>
<thead>
<tr>
<th>Date</th>
<th>IOA</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/14/09</td>
<td>100%</td>
</tr>
<tr>
<td>3/24/10</td>
<td>100%</td>
</tr>
<tr>
<td>3/30/10</td>
<td>100%</td>
</tr>
<tr>
<td>4/6/10</td>
<td>100%</td>
</tr>
<tr>
<td>Average</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Table 2: Dolch Sight Words IOA*

<table>
<thead>
<tr>
<th>Date</th>
<th>IOA</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/14/09</td>
<td>100%</td>
</tr>
<tr>
<td>3/24/10</td>
<td>100%</td>
</tr>
<tr>
<td>3/30/10</td>
<td>100%</td>
</tr>
<tr>
<td>4/6/10</td>
<td>98%</td>
</tr>
<tr>
<td>Average</td>
<td>99.5%</td>
</tr>
</tbody>
</table>
### Hypothesis

Upon initial observations and assessments, the consultant determined that the student was struggling in the current classroom because the material being presented during reading instruction was too difficult and she had not had enough practice with earlier reading skills. The curriculum in the classroom was largely targeting fluency, and the participant had not yet reached a level of reading to where fluency practice would be beneficial for her. For math skills, it was determined during the teacher interview and initial observations that the student possessed the basic math skills being targeted, but that she had not had enough practice to become fluent with them.

### Design

The consultant used an A/B accountability design with a baseline and intervention phase to judge the effects of the intervention on NWF scores, sight word acquisition, and basic math skills fluency.

### Baseline

During the baseline phase, NWF probes were given to the student before any additional supports in the classroom were in place. Three scores were collected by the consultant, and one additional score was included from the student’s fall benchmark.

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### Table 3: Math CBM IOA

<table>
<thead>
<tr>
<th>Date</th>
<th>IOA</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/24/10</td>
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<tr>
<td>3/30/10</td>
<td>100%</td>
</tr>
<tr>
<td>4/6/10</td>
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</tr>
<tr>
<td>Average</td>
<td>100%</td>
</tr>
</tbody>
</table>
assessments. Additionally, sight words known from the Dolch Word list were assessed. There are three baseline points for this measure, one of which was collected by the consultant pre-intervention and the teacher earlier in the school year collected the other two. For the primer Dolch Word list, baseline data were collected three times by the consultant prior to changing the words targeted in the intervention. Additionally, baseline probes were collected three times for all four of the math measures used by the consultant.

**Intervention Procedures**

**Reading Intervention.** Due to the fact that the consultant hypothesized that the classroom curriculum was not benefitting the student because it was targeting fluency, current curriculum was modified for the individual student to target sight word acquisition and word blending.

The intervention was delivered during the student’s regular reading instructional time. The class was using The Daily Five, which involved 5, 15-minute centers with different reading activities. After initial consultation with the teacher and school psychologist, it was decided that the student would use the intervention during the listening center and the read-to-someone center. The read to someone center was chosen because the books read during this center were significantly above the target student’s instructional level, and initial observations showed that she did not really try to read during this time. The listening center was chosen because the reading passages read on the tapes were also above the student’s current instructional level.

A taped-word intervention was used that targeted word blending and sight word acquisition. The tapes were divided into four sections: Sight Words, Blending Words, Sentences, and Review. Each section took about seven minutes. The tapes were designed
by the researcher to be used in two 15-minute blocks, since the student would be using them for two centers a day. During the first section, eight sight words were chosen from the Dolch Sight word list provided by the teacher. The words targeted each week were a mix of words the student already knew and words the student didn’t know. On the tape, the consultant would read the word. Next, the student was instructed to read the word along with the tape. Finally, the student would be instructed to read the word by herself.

The second part of the tape targeted blending words. Eight words were learned each week. The words were printed on a page with dots underneath each letter or phoneme. The student was instructed to sound out the word by following the dots with her finger and making the letter sounds. There was then a 15-second pause on the tape to allow the student to sound the word out. Then the consultant sounded out the word on the tape and instructed the student to sound it out with her. Finally, the student was allowed 8 seconds to attempt to read the word. Then the consultant read the word, and told the student to read it again.

The third part of the tape targeted three sentences made up solely of words learned in that lesson or in previous lessons. On the tape, the consultant first read the sentence to the student. Then the student was instructed to read the sentence along with the tape. Finally, the student was allowed 20 seconds to read the sentence by herself.

The final part of the tape listed both the sight words and blending words reviewed earlier in the lesson, and the student was given 6 seconds to read each word. Then the word was read to her on the tape, and the student was instructed to read it again. This taped-word intervention was designed to help the student acquire sight words, help develop the student’s word blending skills, allow the student more practice with reading
words and sentences at her instructional level, and help generalize the words learned to sentences.

Additionally, a reward component was incorporated into the intervention package. Upon initial observations, the student was observed as being very frustrated with reading, and even stated on several occasions that she did not like to read. As such, motivational components were included in the intervention in hopes that it would make reading more fun for the student. Upon weekly progress monitoring data collection, the student graphed her progress on NWF probes by coloring in boxes corresponding to what score she got. This was to motivate her to improve her score every week, and to help her keep track of how she was doing. Additionally, a reward bag with pencils, erasers, and stickers (among other things) was brought into the classroom at the end of the week. The student could earn a reward if she successfully read one of the sentences from the lesson that the consultant chose for her (See Appendix A for intervention script).

The intervention was modified to target reading fluency after several months, due to the fact that the student had made significant gains in word blending achievement, and the teacher was concerned about her fluency. A listening passage preview intervention was developed using tapes, similar to the tapes the student was already using. Sight words were still targeted on the taped interventions as well. The new weekly lessons targeted 8 sight words from the Dolch primer list, in the same manner as described above. During the second part of the lesson, however, the consultant read a first-grade level passage (provided by the student’s teacher) twice on the tape, and then the student was given 6 minutes to practice the passage on her own. She was instructed to read the passage repeatedly if she finished before the allotted time was up.
The intervention was implemented every day, for at least one 15-minute session. The student got to choose which centers she did daily, and sometimes the class only got to three or four of the centers. As such, some days the student only completed the first 15-minute part of the lesson. Some days, she completed the whole lesson. Each lesson was done for one week, and then the tapes, targeted words, and sentences were changed for a new lesson. Words that the student seemed to be having difficulty mastering were sometimes repeated in the lessons, and some words were repeated in order to mix new words with words the student already knew. After the intervention was modified to target fluency, the intervention used for only one of the Daily 5 activities: Listening to Reading. The teacher and the consultant decided that the reading to someone activity would now be more beneficial to the student, since it was practicing reading fluency and the student had made enough gains in reading skills to be able to participate in this activity. The same taped-lesson was used five days a week, and then a new passage and new sight words were introduced. The reward component remained the same, except the student would read the passage to the consultant at the end of the week to receive a reward, instead of reading a sentence. See Appendix B for Listening Passage Preview script.

**Math Intervention.** The math intervention was created to both allow the student extra practice opportunities in the classroom and provide some consistency with the skills the student was working on for math, due to the fact that the teacher felt that the curriculum was inconsistent. Because it was hypothesized that the student possessed the basic math skills being targeted, but had not had enough practice to become fluent with them, the consultant created three folders of activities to promote extra practice, which were labeled number sense, addition, and subtraction. Each folder had several different
activities for the targeted skill, including worksheets and flashcards. The student was instructed to complete one activity from each folder once a week. She was allowed to work on these activities at home, during morning work time, during any break from instruction, or during free time. The student would keep track of the activities she had done each week by putting a sticker on a chart. When she completed one activity from each math skills area, she was allowed to pick a reward from her reward bag. Additionally, the teacher would check each activity for accuracy and give the student feedback after she completed the activity. See Appendix C for the math intervention script.

Adherence. Adherence data was collected for 20% of intervention sessions, or once a week. For the reading intervention, adherence data were collected by the consultant via a checklist based on the teacher script created for the taped-word and listening passage preview interventions. For the math intervention, adherence data were collected by the consultant via checking the sticker chart to see that the student completed three extra math activities a week as planned.

Goals. Goals were set for the student based on benchmarks and peer comparison. The student was the only one in her class still trying to master the pre-primer Dolch Sight Word list. The other students were reading at much higher level lists. As such, a goal was set for the student to master all 42 words off of this list. After the student mastered all 42 words from this list, a new goal was set for the Dolch primer sight word list. Due to the end of the year approaching, the goal was set by the teacher and the consultant for the student to master 40 of the 52 words on the list.

Empirically derived benchmarks for Nonsense Word Fluency report that a first grader should be able to read 50 sounds per minute by February of their first grade year.
The goal was set to meet this benchmark by the end of the year, since in January the teachers began to monitor oral reading fluency, and this becomes the target for instruction. While the student may continue to be behind, the team would like for the student to at least be caught up to her peers on word blending by the end of the school year, so that in her second grade year she may be able to work more on her fluency.

Goals for the math intervention were set based on peer comparison data collected prior to the intervention being introduced. The peer chosen for comparison was identified as an average-performing peer on math skills. The goal for number identification was 65 numbers per minute, the goal for missing number fluency was 20 numbers per minute, the goal for addition was 9 correctly-solved problems per minute, and the goal for subtraction was 5 correctly-solved problems per minute.

Social Validity

This intervention was created collaboratively with the teacher and the school psychologist at the target student’s school. Social validity was measured formally with a questionnaire filled out by the teacher close to the end of the school year. Additionally, the consultant asked both the student and the teacher whether they liked the intervention and whether they thought it was working after a couple of months of intervention. These informal data suggested that both the teacher and the student really liked the intervention, and were pleased with the student’s progress.

Results

Adherence Results

Adherence for the taped word and listening passage preview interventions was on average 100%. Adherence for the math intervention was on average 81%.
Reading Progress Monitoring Results

Figure 1 shows the results of the taped-word intervention on Dolch pre-primer sight word acquisition. During baseline, the student was able to identify a median of 15 words from the list. After the intervention was introduced, the data show a stable increasing trend until the student met the goal. In the month of March, the student met the goal of 42 words three times, and the measure was discontinued.

Figure 1: Pre-primer Dolch Sight Word Acquisition

Table 4 shows the summary statistics for this measure. 100% of intervention data were non-overlapping with baseline data. Cohen’s $d$ is -4.19, which is considered to be a large effect size.
Table 4: Summary Statistics for Pre-primer Dolch Word Identification

<table>
<thead>
<tr>
<th>Summary Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Data Points</td>
<td>Baseline: 3; Intervention: 14</td>
</tr>
<tr>
<td>Baseline Mean</td>
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<tr>
<td>Baseline Standard Deviation</td>
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</tr>
<tr>
<td>Intervention Mean</td>
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<tr>
<td>Intervention Standard Deviation</td>
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<tr>
<td>Percent Non-overlapping Data</td>
<td>100%</td>
</tr>
<tr>
<td>Cohen’s d</td>
<td>-4.19</td>
</tr>
</tbody>
</table>

Figure 2 shows the results of the taped-word intervention on Dolch primer sight word acquisition. During baseline, the student was able to identify a median of 17 sight words. Baseline levels were stable, with little variability. After the taped-word intervention targeting this word list, the student was able to identify 23-40 words. The trend for intervention is increasing stably. No summary statistics are included for this measure, as progress monitoring is ongoing.

Figure 2: Primer Dolch Sight Word Acquisition
Figure 3 shows the results of the taped-word intervention on Nonsense Word Fluency. Baseline show that the student was reading sounds at a median rate of 11 sounds per minute. Baseline levels are fairly stable, with little variability. After the intervention was introduced, sounds per minute gradually increased to 24-47 sounds per minute. During the observation sessions where the student regressed to 24-30 sounds per minute, another observer was present which caused the student to be distracted. As of the time of this report, the goal of 50 had not yet been met, but the student was making adequate progress to meet the goal by the end of the year. No summary statistics are included for this measure, as progress monitoring was ongoing.

Figure 3: Nonsense Word Fluency
Math Progress Monitoring Results

Figure 4 shows the progress the student made in number identification. Baseline data show that the student was identifying a median of 23 numbers per minute. Baseline rates are stable, with little variability. After the intervention was introduced, the student's number identification fluency was 21-39 numbers per minute. These data show fairly stable results, with only a slight increasing trend. There is some variability in the intervention data as well. No summary statistics are included in this measure, as progress monitoring is ongoing.

*Figure 4: Number Identification Fluency*
Figure 5 shows the student’s progress for missing number identification fluency. The student was able to identify a median of 9 numbers per minute during baseline, with some variability. After the intervention was reduced, progress monitoring results show the student was identifying 11-14 missing numbers per minute. The intervention data show a stable trend, with little to no increase over time. No summary statistics were included for this measure, as progress monitoring is ongoing.

*Figure 5: Missing Number Identification Fluency*
Figure 6 shows the student’s progress on basic addition measures. The student was able to correctly solve a median of 3 addition problems per minute during baseline, with some variability. After the intervention was introduced, the student was able to solve between 1 and 6 problems per minute. The intervention data show a slight increasing trend toward the goal line, although progress is still below the aim line. No summary statistics are included for this measure, as progress monitoring is ongoing.

*Figure 6: Addition Fluency*
Figure 7 shows the results of the student's basic subtraction performance. Baseline levels were a median of 0 problems correctly solved in one minute. Baseline data show little variability. After the intervention was introduced, the student was able to correctly solve 2-7 subtraction problems correctly in one minute. These data show an increasing trend until the student met the goal. After the student met the goal three times, progress monitoring on this measure was discontinued.

Figure 7: Subtraction Fluency

![Subtraction Fluency Graph]

Table 5 shows the summary statistics for this measure. 100% of intervention data are non-overlapping with baseline data. Cohen's $d$ is -3.0, which is considered a large effect size.
Table 5: Summary Statistics for Subtraction Measure

<table>
<thead>
<tr>
<th>Summary Statistic</th>
<th>Value</th>
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</thead>
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<tr>
<td>Number of Data Points</td>
<td>Baseline: 3; Intervention: 4</td>
</tr>
<tr>
<td>Baseline Mean</td>
<td>.33</td>
</tr>
<tr>
<td>Baseline Standard Deviation</td>
<td>.58</td>
</tr>
<tr>
<td>Intervention Mean</td>
<td>5</td>
</tr>
<tr>
<td>Intervention Standard Deviation</td>
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</tr>
<tr>
<td>Percent Non-overlapping Data</td>
<td>100%</td>
</tr>
<tr>
<td>Cohen’s d</td>
<td>-3.0</td>
</tr>
</tbody>
</table>

Social Validity Results

Table 6 shows the results of the social validity questionnaire. The mean teacher rating for all the statements is 4.83, which falls in between ratings reflecting Agree and Strongly Agree.

Table 6: Social Validity Results

1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree

<table>
<thead>
<tr>
<th>Statement</th>
<th>Teacher Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>I had adequate input in developing the intervention script</td>
<td>5</td>
</tr>
<tr>
<td>The intervention script was easy to follow</td>
<td>4</td>
</tr>
<tr>
<td>I liked the procedures used in the intervention</td>
<td>5</td>
</tr>
<tr>
<td>The intervention was easy to include in my daily routine</td>
<td>5</td>
</tr>
<tr>
<td>I would be willing to use this intervention in the future</td>
<td>5</td>
</tr>
<tr>
<td>Overall, the intervention was beneficial to the students</td>
<td>5</td>
</tr>
<tr>
<td>Additional Comments</td>
<td></td>
</tr>
<tr>
<td>Mean Rating</td>
<td>4.83</td>
</tr>
</tbody>
</table>
**Discussion**

The student’s progress in reading throughout the year has been significant. The consultant’s hypothesis that the student was struggling in reading because she had not had enough practice with earlier reading skills appears to be supported by the results of the taped-word intervention. The student’s Nonsense Word Fluency has increased to near-goal levels, possibly because of the extra practice she had with word blending. A few data points, however, do show a slight drop in performance on this measure. This could be due to one or both of the following factors: the student was absent due to illness for three to four weeks prior to the collection of the last three data points and/or the student was very shy and afraid to respond when another observer was present for these three data points. This sudden decrease in responding is likely due to the latter, because the first progress monitoring session after this dip when no co-observer was present produced results similar to results before the three co-observation periods.

The student’s growth in early math skills was not as prominent as her reading skills, with the exception of subtraction fluency. For this measure, the student met the goal after 7 weeks of intervention and progress monitoring was discontinued. The growth on the other measures, (i.e. missing number fluency, number identification fluency, and addition fluency) was minimal at best. At the time of this report, the consultant was working with the teacher to increase adherence, and ultimately, change the intervention if necessary. The low results could be due to lower adherence, or, once again, the student’s prolonged absence. Additionally, reading skills were prioritized over math skills for this student. As such, it is possible that the low adherence was due to the fact that the teacher and/or
student did not feel as though this extra practice was as important as the extra reading practice.

Limitations of these results include the fact that an internally valid design was not used for the progress monitoring results. Because of this fact, it is possible that other factors, including maturation and regular classroom instruction, contributed or were responsible for any changes in dependent variables. For the reading intervention, however, it was clear that the regular classroom practices were targeting fluency, and as such, probably did not affect the target student’s blending skills as much as the intervention introduced did. Additionally, the results are unclear for the math intervention. The student met her goal in subtraction, but she also was at a median of 0 during baseline levels, so simply acquiring this skill may have produced these results. Again, it is unclear whether the math intervention itself was insufficient to produce improvement, or if lower adherence and absence contributed to these low scores.

Social validity results suggest that the teacher liked the intervention, thought it was beneficial to the student, and would use it again in the future. The teacher felt as though the student has made significant gains this year, especially in reading. Another positive result of this intervention was that after the student began making gains in word blending skills, she became much more confident and enjoyed reading more. During baseline collection, the consultant noticed how frustrated the student got when trying to read and heard her express this dislike verbally on several occasions. After the intervention was in place, however, the student seemed to enjoy reading more, to the extent that she was extremely proud of her progress, and even walked down to the counselor’s office to read to her on several occasions. This confidence and enjoyment of reading is almost as important
as the skills themselves, because the student is more likely to continue to try and improve in the future if she feels as though she can do better.

This consultation demonstrates the author’s ability to modify and use research based interventions to produce positive outcomes for students. Additionally, these interventions were created collaboratively with the teacher and the school psychologist. The consultant was able to demonstrate data-based decision making by collaborating with the teacher to make changes in the intervention throughout the year that reflected the student’s growth in early reading skills. Additionally, at the time of this report steps were being taken to increase adherence or change completely the math intervention, to promote positive outcomes in this academic area as well.

Despite the lack of causality in this consultation, the reading measures show very positive results for this student, and it is possible that the student may be caught up to her peers on certain measures by the end of the school year. It is not as clear whether or not the student will make such gains on early math skills, but the consultant and teacher are currently working as a team to try and change that. The teacher, school psychologist, and student herself all reported beliefs that this student has improved significantly in reading throughout the course of the academic year and this intervention. With continued supports, it is possible that this student will be able to read fluently and at grade-level by next year.
References


Appendix A: Taped-word Intervention Script for Teacher

Taped-Word Script

• The student should use the taped-word intervention during the listen to reading center and the read to someone center.

• The first 15-minute lesson on the tape targets sight words and blending words. The student should have out the tape and tape player, and the lesson booklet. The tape should be rewound to the beginning.

• After the first 15-minute session, the student should turn the tape player off, but not rewind it.

• When she returns for the second 15-minute lesson, the student should press play on the recorder and resume where she left off. The second part of the lesson, the student will be reading sentences and reviewing the words she learned earlier.

• After the second session, the student should turn the tape player off and rewind it so it is at the beginning of the tape for the next day.

• At the end of the week, the student will graph her progress on Nonsense Word Fluency probes, and will be able to earn a prize from the reward box if she can successfully read a sentence from the lesson.
Appendix B: Listening Passage Preview Script for Teacher

**Listening Passage Preview Script**

- The student should use the taped-word intervention during the read to someone center.
- The first portion of the lesson covers sight words.
- The second portion of the lesson is a passage preview, in which the speaker reads the selected passage to the student on the tape twice.
- The student is then given 6 minutes to practice reading the passage on her own.
- After the session, the student should turn the tape player off and rewind it so it is at the beginning of the tape for the next day.
- At the end of the week, the student will graph her progress on Nonsense Word Fluency and Oral Reading Fluency probes, and will be able to earn a prize from the reward box if she can successfully read the passage from the lesson.
Appendix C: Math Intervention Script

Math Practice Instructions

General:
Student should use the additional math practice activities at least three times per week, choosing one exercise from each sub-skill category. When an activity is completed, the student shall put a sticker on the chart in the appropriate category so that she can track which categories she has completed each week.

Numbers:

Worksheets: Complete one side of a worksheet according to the instructions on the worksheet. Activities for this practice include filling in the missing number, matching numbers to pictures, and quantity discrimination.

Number Flash Cards: Student should read each number on the flashcards, and then put them in sequential order.

Mickey Flash Cards: There are two types of cards for this activity, number cards and counting cards. The student should match the number card with the corresponding picture card (the picture card will have pictures of a certain number of items, so if there are 8 flowers, the student should match this card with the number 8).

Addition:

Worksheets: Complete one side of a worksheet according to the instructions on the worksheet.

Flash Cards: 12 addition flash cards are included for an activity. The student should use the provided writing paper. On the paper, she should copy down the problem and solve it. The student is encouraged to use manipulatives while doing these problems.

Subtraction:

Worksheets: Complete one side of a worksheet according to the instructions on the worksheet.

Flash Cards: 10 subtraction flash cards are included for this activity. The student should use the provided writing paper. On the paper, she should copy down the problem and solve it. The student is encouraged to use manipulatives while doing these problems.
The Effects of a Self-Evaluation Intervention with Multiple Components on a First-grader’s Off-task Behaviors

A first grade boy at a Midwestern elementary school was referred by his teacher due to behavior concerns. The teacher reported that the student was an above average achiever academically, but frequently exhibited off-task and disruptive behaviors that affected his work completion and the learning environment of the students around him. The consultant assigned to this case is a School Psychology practicum student at a local University. The consultant initially observed the referred student’s behavior and measured his off-task behaviors, and designed a self-managed intervention targeting off-task behavior and work completion.

Students in elementary school are expected by their teachers to possess certain behavior skills that allow them to perform academic tasks, such as paying attention and sitting in their seat, with a certain level of independence (Sainato, Strain, Lefebvre, & Rapp, 1990). Without these behaviors, a student may have difficulty learning, and disruptive behavior may put other students at risk for learning interference. A single student who is frequently off-task and does not complete his/her work can distract the teacher from important class-wide instructional opportunities that could be harmful to students’ academic opportunities. Therefore, it is extremely important that a student exhibiting these types of behaviors is targeted for intervention as early as possible, to ensure that the target student and his/her classmates are receiving the most educational opportunities possible. One way to increase student independence and on-task behavior is through a self-managed intervention, which can both involve the student in his/her treatment and help to teach him/her how to manage his/her own behavior.
Self-evaluation

Ardoin and Martens (2004) used a self-evaluation intervention with a teacher matching component for four students of differing ages, all classified with Attention-Deficit Hyperactivity Disorder. After each targeted activity, the students in this study were prompted to fill out a rating scale describing how long they thought they exhibited each of several targeted behaviors. Additionally, an observer coded the actual amount of time each student exhibited these behaviors. At the end of the session, the students compared their ratings with those of the observers. The students were provided a small monetary reward if their ratings matched with the observers.

The intervention components were added over time systematically to determine the best intervention package for each individual student. For one student in this study, the self-evaluation alone (without observer matching) was sufficient to reduce disruptive behavior significantly. The other three students exhibited reduced disruptive behaviors during the self-evaluation and matching condition. Additionally, the researchers examined the participants’ accuracy in self-evaluation before the intervention started. The results show that for three of the four students, self-evaluations were very inaccurate prior to the intervention. This is important because without the matching component, a self-evaluation intervention would not be helpful if a student could not accurately rate his/her own behavior (Ardoin & Martens, 2004).

Sainato and others (1990) conducted a similar study with four preschool boys, all of whom were classified with an Autism Spectrum Disorder. The researchers used a sequential withdrawal design to determine the effects of several treatment components on the students’ appropriate behaviors. The intervention package consisted of a self-
assessment technique using happy and sad faces, a teacher matching component, and reinforcement for teacher matching. Each student would rate himself three times throughout the day, and then meet with the teacher to compare ratings. The teacher would give feedback on the students’ ratings, and explain to the student why he/she rated him the way he/she did.

Additionally, the student would receive a small toy for matching with the teacher on most of the areas of rating. The researchers found that the introduction of all three treatment components produced immediate and substantial improvements in the students’ behaviors for all of the participants. Additionally, teacher prompts for appropriate behavior were greatly reduced for the target students. The students continued to maintain high rates of appropriate behavior as the reinforcement and matching components were withdrawn, although these rates decreased slightly. These results indicate that self-assessment, teacher matching, and reinforcement was the most effective treatment package for these children (Sainato et al., 1990).

McGoey, Prodan, and Condit (2007) measured the effects of a self-evaluation intervention with multiple components on two kindergarten boys reported as exhibiting disruptive behaviors. The intervention in this study included student training and daily reminding of target behaviors and goals, student self-evaluation several times a day on performance on target behaviors, a teacher matching and feedback component, a home school report card, and home reinforcement when the student met his daily goals. The self-evaluation consisted of happy, neutral, and sad faces that each student colored in based on how they felt they performed on each of the target variables. For both students, disruptive behavior significantly decreased during both intervention conditions versus the two
baseline conditions. Disruptive behaviors that were decreased included negative social interactions, off-task behaviors, non-compliance, and tantruming.

It appears as though self-evaluation with teacher matching and reinforcement can be an effective intervention for a wide variety of behaviors across students of varying grades and abilities. It is important to consider what the research says about designing interventions that are self-managed as well as for selecting reinforcement. A descriptive study on behavior charts and home school notes by McCain and Kelley (1993) found that the most significant self-evaluation interventions ensure that the rating scale is developmentally appropriate. In other words, the target student must know how to correctly perform the behaviors being targeted, and if he/she does not, they should be trained on this first. Additionally, a child’s developmental level should be taken into consideration when developing the scale. If a child does not yet have the ability to read or write, this should be considered.

Considerations must also be taken with delayed reinforcement. Stromer, McComas, and Rehfeldt (2000) describe implications of laboratory research to applied settings in using delayed reinforcement. It is important to consider that stronger, more immediate reinforcement is not present in the classroom than the home reinforcement, because the disruptive behaviors may not decrease in this case. It is also important to provide intermittent reinforcement when using a delayed reinforcer, which, as an example, in a classroom could be teacher praise for low rates of disruptive behaviors. Delayed reinforcement can still be effective in reducing disruptive behaviors in classrooms with home-school communication (e.g., Sluyter & Hawkins, 1972).
**Behavior Contracts**

Behavior contracts are forms signed usually by the target student, the teacher, and sometimes the parents that specify a specific daily, weekly, or overall goal to be met by the student. The contract also includes a target behavior that needs improvement, and specifies a specific reward that the student will achieve if he/she reaches the goal (Smith, 1994). A study by Smith (1994) demonstrates the use of behavior contracts with twelve students (grades K-8) exhibiting disruptive behaviors and lack of work completion, among other variables. The researcher first trained the parents on the use of the behavior contract, and then weekly contracts were drawn up and signed that stated the target behavior, the goal, and the predetermined reward or privilege. A control group was also monitored for the target variables, but this group did not participate in behavior contracting. The researcher found that for the behavior contract group, students reached 65% of their weekly goals over the course of the study, compared to the control group reaching 19% of their weekly goals.

Another study by Ruth (1998) demonstrated positive results of behavior contracting with forty-three students classified with emotional and/or behavioral disorders. The researcher measured the effect on daily, weekly, and overall goals set by the target students and their teachers. Ruth found that 75% of daily goals were met, 72% of weekly goals were met, and 86% of overall goals were met. There was no comparison group in this study, but it still demonstrates the positive effects that behavior contracts may have on goal attainment.

**Current Consultation.** The current consultation examined the effects of a multiple component intervention on the off-task behaviors and work completion of a first-grade
student referred for behavior concerns. The consultant developed an age-appropriate behavior chart for each scheduled activity throughout the day. Additionally, the student was reinforced for matching ratings with the teacher. A home school note was sent home at the end of each day, and the student could access home reinforcers when he met the predetermined criteria. After the first intervention did not result in the student meeting his goal, the intervention was changed to reward the student for positive ratings. After several more weeks, a behavior contract was added to the intervention.

Methods

Participants and Setting

The participant in this consultation was a first-grade student in a rural Midwestern Elementary School. The student was a 7-year old boy. The student was identified by the School Psychologist as having a sensory over-responsive condition. He was above-average academically, and was given enriched assignments in the classroom in order to challenge him. He was reading at a third grade level, and his enriched math assignments were at a fourth grade level. There were 19 other students in the classroom, 3 of whom were identified with disabilities. A general education classroom teacher was present at all times, and a special education co-teacher was in the classroom for about a third of the school day. The consultant in this study was a second year school psychology graduate student who was assigned for practicum in the student’s school. The parents were also involved in the consultation process for this case. The father is a middle school teacher, and has some experience with behavioral interventions.

The student was receiving supports in the classroom for the sensory disorder. He was allowed to wear a “sock buddy,” which was a sock filled with beans that went around
his neck to provide pressure to aid with the sensory condition. He also had a whisper phone that he used when he was being too loud. This device allowed him to hear himself speak, and is designed to help him be quieter in the classroom. At the time of the referral, the teacher was using a behavior chart with the student to assist him in monitoring his behavior. The student did not, however, fill this chart out by himself, and it did not seem to have an effect on his behavior.

**Targeted Variables**

Target variables were selected based on the teachers concerns in the initial interview, and initial observations by the consultant. The variables targeted were engagement and off-task behaviors. Engagement was defined as the student actively or passively attending to the assigned work, for example: looking at the teacher or reading a book. Off-task behaviors were defined as the student not attending to the assignment, but instead exhibiting a behavior not related to the academic task.

Engagement and off-task behaviors were measured via a consultant-created code based on the Behavioral Observation of Student’s in Schools (BOSS; Shapiro, 2004). The code was a simplified version of the BOSS. The code measured engagement with a momentary time sampling method, and off-task behavior was measured with a partial interval time sampling method. The code used 15-second intervals. Target behaviors were progress monitored once a week for 30-minute observation sessions. The observation sessions took place during various subjects during instructional time, but it was usually reading or math. The student was identified as having the most problem behaviors during these two subjects, and overall during transitions. Interobserver agreement (IOA) was calculated for 20% of observation sessions.
**Interobserver Agreement Results**

*Table 1: Interobserver Agreement Results*

<table>
<thead>
<tr>
<th>Date</th>
<th>IOA</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/15/10</td>
<td>95%</td>
</tr>
<tr>
<td>4/13/10</td>
<td>98%</td>
</tr>
<tr>
<td>Mean</td>
<td>96.5%</td>
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</table>

**Hypothesis**

Based on initial observations, the consultant hypothesized that the student was exhibiting off-task behaviors, which were interfering with work completion because on-task behaviors and work completion were not reinforced for the student. During activities that he enjoyed, like reading, his behavior was equal to that of a normal peer. During activities he disliked, however, such as writing and math, the student was not reinforced for completing his work and staying on-task, and he frequently exhibited off-task and disruptive behaviors. Based on teacher report and observations, it was clear that the student was academically capable of completing the tasks, but he just did not want to.

**Design**

The consultant used an A/B accountability design to ensure that the student was making adequate progress towards the intervention goals.

**Baseline**

Baseline data were collected by the consultant three times prior to the intervention implementation. During the first two observation sessions, the consultant used the BOSS
(Shapiro, 2004). The final baseline point was collected using the code created by the consultant, which was a simplified version of the BOSS.

**Intervention Procedures**

*Behavior chart with teacher matching.* The intervention package was developed by the consultant with input from the parents and teachers of the student. The parents requested a self-managing intervention, to help teach the student how to manage his own behavior. As such, the consultant modified the current behavior chart intervention and added a reinforcement component. The behavior chart developed was designed so that the student only had to look at one activity at a time. At the end of the activity (which was chosen based on the classroom schedule), the student would pull out a behavior chart and color in a smile or frown face for each of the following variables: Work completion, only talking when appropriate, not making noises, using his supplies as tools (not toys), and transitioning in less than three minutes. After the student rated himself on each variable, the teacher would fill out the same behavior chart and compare her responses with the student’s. If the student matched the teacher on four out of five responses, he was allowed to put a marble in his jar. After he received 8 marbles, he was allowed to choose a reinforcer from several options the teacher presented. Additionally, if the student received less than 6 frown faces on his chart in a day, he was allowed to access a home reinforcer (the parents allowed him to play video games that day).

This intervention was chosen in order to help teach the student how to monitor his own behavior, in hopes that accurate self-monitoring would help improve behavior. Additionally, the package helps to create reinforcement for completing the work that the student does not like to do. The student was trained to use the intervention by the
consultant, and it was determined during this training that the student was aware of and capable of exhibiting the expected behaviors during instructional time. The team planned for fading the intervention by reducing the number of activities in which the child would be required to match with the teacher to every 3-4 activities on a variable schedule.

A script was created for the teachers and approved by the parents and school psychologist prior to intervention implementation (See Appendix A). Adherence data was collected by the consultant for 20% of intervention sessions, or once a week.

**Behavior Chart with rewards.** After three weeks of intervention, another meeting was held to address the continuing high rates of off-task behaviors and lack of work completion. The student’s behavior had improved slightly after the first intervention was introduced, but it was still very disruptive in the classroom and this student was still taking up a significant portion of the teacher’s time. The parents, teacher, and consultant decided to offer the student his intermittent reward (i.e., a marble in the jar) for getting positive ratings on his behavior chart, instead of for matching with the teacher. It was determined in the first several weeks that the student was able to match with the teacher most of the time, which implies that he could in fact self-monitor his own behavior.

As such, the student received a marble in his reward jar for each positive rating. The behavior chart itself remained the same, with the exception of the deletion of several activities that the student never had behavior issues during. Each activity had five ratings, so the student could earn up to 40 marbles in one day (one marble for each smile). If the student earned 24 marbles, he was permitted to pick a prize from the “treasure chest” the teacher had in the room. Additionally, he would receive the home reinforcer (time playing video games). The student filled out the behavior chart himself after each activity, and then
the teacher would conference with him and discuss any disagreements. At the end of the
day, the teacher sent home a copy of the behavior chart to be signed by the parents. See
Appendix B for Modified Intervention Script.

**Behavior chart and behavior contract intervention.** After the second
intervention was introduced, the student’s behavior still did not improve to levels
appropriate for the classroom. The consultant and the parent did a co-observation with the
student in the classroom, so that the parent could see how his student’s behavior effected
his academic work. During this observation, the parent shared that the previous week the
student had been "grounded" from a specific video game, and had to earn all 40 smiles on
his behavior chart to earn it back. That day, the student’s behavior was excellent (see
Figures 1 and 2 below) and he earned all positive ratings on his chart.

The consultant, teacher, and parent talked about this phenomenon, and it was
decided that a daily behavior contract was going to be added to the intervention. Each
morning, the student would sit down with his parents and fill out the contract. The
contract reminded the student of the target behaviors, specified a daily goal for positive
ratings on his behavior chart, and the child and parent would chose a specific reward the
student would receive if he achieved this goal. The contract would then be sent to school
with the student, so that the teacher could remind him throughout the day of what reward
he was working towards. See Appendix C for the behavior contract. See Appendix D for the
Modified intervention script.

**Additional supports: social script.** In addition to the behavior chart interventions,
the consultant developed a social script with the student to address a concern that the
teacher had. The student displayed perfectionist tendencies with his shoes, whereas they
had to be tied very tight and the laces had to be the same length, or the student exhibited extreme disruptive behaviors. The teacher described these episodes as “meltdowns,” wherein the student would cry and scream until he felt as though his shoes were tied right. These episodes were occurring with increasing intensity and frequency, although they were still too low-incidence for the consultant to observe. As such, the consultant supported the teacher by helping the child write a social script about an imaginary land, a superhero, and his shoes. When the teacher felt as though the student was beginning to have an episode, he would be allowed five minutes to sit in a quiet place and read the story, which emphasized that shoes are not always tied tight and the laces are not always the same length. This was not progress monitored separately, but would have been noted in observations if it had occurred when the consultant was observing.

**Goals**

Goals were set for the target variables based on peer comparison data collected during initial observations. The goal for engagement is 80% of observed intervals. The goal for off-task behavior is 20% of observed intervals.

**Social Validity**

Social validity was measured via a rating scale provided to the teacher. The consultant also addressed social validity informally, by asking the teachers, parents and the student how they felt about the intervention.

**Results**

Figure 1 shows the results of the interventions on the student’s off-task behaviors. During baseline, the student was observed being off-task a median of 63% of intervals. After the behavior contract with teacher matching intervention was introduced, off-task
behaviors reduced to 42.5-58% of intervals. When the intervention was changed to rewards for positive ratings, off-task behavior occurred for 32-39% of observed intervals. The special reward note was the day that the student had to earn a specific reinforcer at home, with a specific goal set, so this data point occurred when the intervention had been slightly modified from the original script by the parents. After the behavior contract was added to the intervention, the student’s off-task behaviors reduced to 10-30%.

*Figure 1: Off-task Behaviors*

Figure 2 shows the results of the behavior contract interventions on the student’s engagement. During baseline, the student was engaged a median of 55% of observed intervals. After the behavior contract with teacher matching intervention was introduced, the student's engagement increased to 68-76% of observed intervals. After the
intervention was changed to rewarding for positive ratings, engagement was observed at 70-86% of observed intervals. The special reward note was the day that the student had to earn a specific reinforcer at home, with a specific goal set, so this data point occurred when the intervention had been slightly modified from the original script by the parents. After the behavior contract was added to the intervention, engagement increased to 79-91% of observed intervals.

*Figure 2: Engagement*
Social Validity Results

Table 1: Social Validity Results

1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree

<table>
<thead>
<tr>
<th>Question</th>
<th>Teacher Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>I had adequate input in developing the intervention script</td>
<td>5</td>
</tr>
<tr>
<td>The intervention script was easy to follow</td>
<td>5</td>
</tr>
<tr>
<td>I liked the procedures used in the intervention</td>
<td>5</td>
</tr>
<tr>
<td>The intervention was easy to include in my daily routine</td>
<td>5</td>
</tr>
<tr>
<td>I would be willing to use this intervention in the future</td>
<td>5</td>
</tr>
<tr>
<td>Overall, the intervention was beneficial to the students</td>
<td>5</td>
</tr>
<tr>
<td>Additional Comments</td>
<td>The data may not reflect it, but student has made improvements with your help! Thank you!</td>
</tr>
<tr>
<td>Mean Rating</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 1 shows the results of the social validity rating scale given to the classroom teacher. The parents and student were also asked informally what they thought of the interventions. The parents reported that they were extremely pleased with the progress this student has made behaviorally since the interventions had been in place.

Discussion

The consultant’s hypothesis that the student was frequently off-task because he was not reinforced for completing his work appears to have been confirmed by the
reduction of off-task behavior and increasing of engagement for each successive intervention. While the original teacher matching intervention was not as effective as the team was hoping it would be, it did provide a valuable insight. The intervention demonstrated that the student did know how to evaluate his own behavior, based on the fact that he was able to match his own ratings with the teacher most of the time.

This ability to self-evaluate, while important, was not enough to motivate this particular student to complete his work, as is appropriate in a classroom. By adding in rewards for appropriate classroom behaviors, and, ultimately a behavior contract wherein the student could chose his home reinforcer everyday, the team was able to reduce the target student’s off-task behaviors significantly. At the time of this report, only a few data points had been collected for the final intervention, and only one of which had met the goals set for this student. The team hopes that his behavior will continue to improve as he gets accustomed to the newer intervention. If not, more changes will be made to the intervention until the environment fully supports this student’s appropriate behaviors.

Social validity results demonstrate that the teacher was satisfied with the resulting changes in behavior after the interventions were introduced. The teacher feels as though the data may not reflect the behavior change completely accurately, because, comparatively, the student’s behavior has gotten a lot better. Additionally, the teacher felt as though the intervention was easy to fit into her routine and would try the intervention again. Because the intervention helped the student’s behavior to become self-managed, the teacher had to dedicate much less time to this student and his behaviors.

Limitations to this consultation include that no internally valid design was used. Because of this fact, it cannot be inferred that the changes in the student’s behavior were
due to the intervention(s). Additionally, this student had multiple challenging behaviors in the classroom that may have contributed to behaviors targeted in these interventions. Another limitation is the few number of data points for this consultation, which make it difficult at this point to be able to tell whether the student’s behavior has improved significantly, as well as whether or not any changes will last over time.

This consultation demonstrates the consultant’s ability to work well with parents. In this case, the parents were involved in all steps of the consultation, planning, and progress monitoring. A home-school behavior contract, home-school report card, and home reinforcer were all used. The consultant regularly conferenced with the parents as changes to the interventions were being made. Additionally, the parent came in to co-observe the student with the consultant, to try and get an accurate picture of how the data were being collected, as well as how the student’s behavior was effecting his academic work.

In addition to demonstrating meaningful parent contact, this consultation shows the consultant’s ability to work collaboratively with both parents and teachers to find an intervention that will produce positive student outcomes. It also demonstrates the use of data-based decision making, in that the intervention was changed several times due to the lack of progress on off-task behaviors and engagement. After several changes, the team thinks that they may have found the best intervention for this student. The interventions used are based in research as well. The consultant developed these interventions using a behavioral problem solving model, and demonstrated the ability to link a functional hypothesis to intervention.
Considering the difficulties this student was having this school year with work completion, these data show that he has improved and hopefully will continue to improve as the school year goes on.
References


Appendix A: Teacher Script for Behavior Chart Intervention

**Behavior Chart Script**

- At the beginning of each day, remind student that he will be rating himself after each activity, and remind him of the behaviors he will be rating himself on.
  - work completion
  - talking only when appropriate
  - not making noises
  - using supplies as tools
  - transitioning in less than 3 minutes

- After each activity, prompt student to fill out the ratings for that activity in his folder.

- The teacher should also fill out her copy of the behavior chart. Student should be given a smiley face if he exhibited the appropriate behavior for at least 80% of the activity.

- After each activity, have student meet with you to compare ratings. It is important to explain to him why he was rated the way he was, especially if the teacher ratings differ from the students’.
  - e.g., “I gave you a frown face here because you were making noises to yourself during independent reading time.”

- When student matches with the teacher for four out of five of the categories (regardless of whether he did well or poorly on the categories), he should be allowed to add a marble to his jar.

- At the end of the day, the copy of the teacher report should be sent home to the parents. If student earned less than 6 frown faces in a day, he should be given access to the home reward (time playing video games).

- When the marble jar is filled up, student should be given his reward (to be determined by the teacher).
Appendix B: Teacher Script for Behavior Chart with Rewards Intervention

**Modified Behavior Chart Script**

- At the beginning of each day, remind student that he will be rating himself after each activity, and remind him of the behaviors he will be rating himself on.
  - work completion
  - talking only when appropriate
  - not making noises
  - using supplies as tools
  - transitioning in less than 3 minutes

- After each activity, prompt student to fill out his behavior chart and rate himself on each of the five behaviors.

- The teacher should talk to student about whether or not she agrees with his ratings, and change it if appropriate. It is important to explain to student why he received a frown or smile for each activity.

- For each smile that student receives, he should be allowed to put a marble in his jar.

- At the end of the day, a home-school report should be sent home to the parents. If student earned 15 or less frowns in a day, he should be given access to the home reward (time playing video games).

- When the marble jar is filled up, student should be rewarded by being allowed to chose a prize out of the classroom “treasure chest.”
Appendix C: Teacher Script for Behavior Chart with Behavior Contract

**Modified Behavior Chart Script with Behavior Contract**

- At the beginning of each day, parents will sit down with student and remind him that he will be rating himself after each activity, and remind him of the behaviors he will be rating himself on.
  - work completion
  - talking only when appropriate
  - not making noises
  - using supplies as tools
  - transitioning in less than 3 minutes

- The parents will then allow student to choose what reward he will be earning that day. They will write the reward into the behavior contract, sign it, and send it to school with him.

- After each activity, the teacher should prompt student to fill out his behavior chart and rate himself on each of the five behaviors. The teacher should remind him throughout the day of what reward he is working towards.

- The teacher should talk to student about whether or not she agrees with his ratings, and change it if appropriate. It is important to explain to student why he received a frown or smile for each activity.

- For each smile that student receives, he should be allowed to put a marble in his jar.

- At the end of the day, a home-school report should be sent home to the parents. If student earned 10 or less frowns in a day, he should be given access to the home reward as specified in the behavior chart.

- When the marble jar is filled up, student should be rewarded by being allowed to chose a prize out of the classroom “treasure chest.”
Using a Picture Activity Schedule and Differential Reinforcement for a Preschooler with Behavior Problems in Multiple Areas

Within a Positive Behavior Support system, Tier 3 supports with intensive interventions are necessary for those students who are not responding to supports at the Tier 1 and Tier 2 levels. It is especially important that children are targeted for intervention as early as preschool, to ensure that they are caught up to their typically developing peers in time to begin kindergarten. Early intervention for both academic and behavior problems should be a priority concern for teachers and administrators, especially with children from economically disadvantaged backgrounds, such as those students found in a Head Start Program.

**Positive Behavior Support and Response to Intervention**

Positive Behavior Support (PBS) encompasses a broad range of strategies, both systems-wide and individualized, that focus on creating a positive school environment by using instructional and problem-solving strategies and processes (Frey, Lingo, & Nelson, 2008). A PBS model encourages the development of positive, preventative, and unified discipline systems. The critical components of PBS include socially important outcomes, empirically supported practices for achieving desired outcomes, and the use of data-based decision making (Frey et al., 2008). Positive behavior support typically employs a three-tiered model of service delivery. Tier 1 focuses on prevention and intervention (e.g., school wide and/or class wide positive rules). Tier 2 targets students for whom the regular instruction methods are not benefiting, and can involve small group or embedded interventions.

Tier 3 in an PBS model focuses on more intensive and individualized intervention for students who are not responding to Tier 1 and Tier 2 supports. Depending on the
individual concerns for the child, the intervention and services needed may look different. The important parts of interventions used are that they are based in research, and that progress is monitored throughout the intervention to ensure that the student is making adequate gains.

Similarly, Response to Intervention (RtI) is a tiered model of service delivery that promotes the use of student responses to quality interventions based in research to make decisions about needed services (Barnett, VanDerHeyden, & Witt, 2007). RtI is similar to PBS in that it typically employs a model of three-tiered service delivery based on intensity of services, but differs in that it targets academic support as well as, in some cases, behavior support. This consultation took place during the first year that the agency employed both an RtI and a PBS model.

**Compliance with Teacher Requests and Classroom Routines**

Teachers and other adults see developmentally appropriate compliance as a necessary behavior to ensure students’ success in the educational system. Children who are noncompliant cause the teachers to be distracted in a classroom. They also disrupt other students and their learning, and children miss out on important opportunities to acquire and practice both the academic and behavior skills that are being taught in the classroom. Noncompliance is one of the most common behavioral concerns for both parents and teachers and may be associated with academic difficulties later in life (Wilder, Harris, Reagan, & Rasey, 2007). As such, it is important that interventions are developed and started early for individual children who exhibit noncompliant behaviors, to ensure that they are receiving the appropriate instruction in the classroom and aren’t distracting the teachers from providing learning opportunities to the entire class.
Ndoro, Hanley, Tiger, and Heal (2006) conducted a study in a preschool classroom to determine the most effective teacher behaviors influencing child compliance. The study was designed to better understand how antecedents and consequences interact with certain behaviors in the natural environment. For individual cases, the function of the problem behavior should be identified and an intervention based on this functional hypothesis should be developed. In other words, the most effective interventions are based on developing a hypothesis as to what variables in a person’s environment are maintaining the problem behavior(s). There are, however, certain teacher behaviors that can encourage compliance and lessen disruptive behavior according to this study (Ndoro et al., 2006).

Based on research, the methods found to be especially helpful in increasing child compliance are three step prompting, embedded prompts, “do” commands, eliminating escape, and positive reinforcement for compliance (Ndoro et al., 2006). This study trained teachers to use these methods in a preschool classroom with fifteen children. The researchers then observed child behaviors in response to the teacher’s use of these methods. They found that when the teachers used “don’t” prompts (e.g., “Don’t play with that”), children were overall much less compliant than when the teacher used “do” prompts (e.g., “Go back to your center”). The researchers also observed high levels of compliance with embedded requests, in which a low-preference activity was embedded within a high-preference activity (e.g., “let’s hop like bunnies to the bathroom”), although these requests were only observed five times in the study. Lastly, compliance was the highest in this classroom when the teachers used integral directive, or three-step, prompting.
The abovementioned article was descriptive of teacher methods to increase overall compliance. The purpose of doing so is to try the lowest intensity intervention initially, consistent with RtI and PBS. This study is helpful is helpful, however, in that these methods can assist in aiding in a more intensive intervention with multiple components for children who are exhibiting noncompliant and disruptive behaviors.

**Differential Reinforcement**

Differential reinforcement of alternative behavior (DRA) is one of the most common behavior analytic interventions used to decrease unwanted behaviors in multiple settings, while at the same time increasing alternative, appropriate responses (Petscher, Rey, & Bailey, 2009). DRA is a function-based treatment in which reinforcers for a problem behavior are withheld, while an appropriate alternative behavior is simultaneously reinforced (Cooper, Heron, & Heward, 2007).

Petscher and others (2009) found 116 articles from 1977-2007 in which DRA was utilized (80% with children). The researchers examined the articles for DRA effectiveness, what behaviors DRA was used for, as well as design. DRA was used on a wide variety of behaviors, from aggressive, disruptive, and self-injurious behaviors, to inappropriate vocalizations and food refusal behaviors. This review found DRA to be highly effective for decreasing unwanted behaviors, while increasing more appropriate responses that could increase participants’ quality of life. Additionally, DRA rarely produced unwanted side effects, which could occur when extinction (withholding of reinforcement for problem behavior) alone is used.

Another study on DRA was conducted by Wright-Gallo, Higbee, Reagon, and Davey (2006) on two students with emotional/behavior disorders. A functional analysis was
conducted on these students to identify what was maintaining their disruptive behaviors. Each student’s behaviors were maintained by both escape and attention. The researchers used DRA to teach the students to request escape and attention and were reinforced for using these responses. The researchers also implemented a fading procedure in which the students were at first reinforced for 100% of requests, then 75%, then 50%. Both students displayed greatly reduced rates of disruptive behaviors during treatment phases, while rates of disruptive behaviors were increased during the withdrawal phase.

Wilder and others (2007) looked at the effects of a DRA procedure on two three-year old boys’ noncompliance. A preferred activity was identified for each of the boys, and coupons to participate in these activities were given based on appropriate, compliant behaviors and DRA intervention was found to increase compliance significantly for both students.

**Functional Communication Training**

Functional Communication Training, or FCT, is a type of DRA in which a person is trained to exhibit appropriate behaviors in the form of a communication that has the same function as a problem behavior and reinforcement for the problem behavior can then be placed under extinction. Elopement involves repeated attempts to leave designated areas without permission or supervision (Piazza et al., 1997). This is a serious concern in schools because it not only can interfere with skill acquisition and development, but it also could expose a child to dangerous situations.

Lang and others (2009) conducted a systematic review of the literature on elopement and treatment of elopement for participants classified as developmentally disabled. Ten studies were included in this review, with a total of 53 participants.
Treatments for elopement included differential reinforcement, extinction, time out, response cost, token economies, functional communication training, response blocking, and noncontingent reinforcement (NCR). The researchers found that the most effective treatments were function-based interventions (e.g., NCR, FCT, differential reinforcement). However, there were no studies in this review that compared function-based and non-function based interventions. Additionally, the majority of the studies used in this review were non-experimental in that they were either descriptive, or used a non-internally valid design such as an A/B design. While the results still show FCT to be a promising intervention for the treatment of elopement, this study has serious limitations.

Piazza et al. (1997) identified the function of elopement for three children. For two of the children, elopement was maintained by attention and tangible items, and intervention targeted reinforcing appropriate behavior. For the third child, elopement was determined to be maintained by multiple reinforcers. The researchers used an FCT intervention in which elopement was blocked, and appropriate walking behaviors were taught and maintained. This intervention was highly effective at reducing the problem behavior and teaching and reinforcing an appropriate (walking) response.

Tarbox, Wallace, and Williams (2003) used FCT to reinforce independent communication for an alternative behavior to elopement. Both participants were taught to request reinforcement, and elopement was blocked. The participant for whom tangibles were reinforcing was taught to request a new toy, and the other participant was taught to request attention. For both participants, FCT was very effective in reducing the rate of elopement to near-zero rates.
Activity Schedules

Picture activity schedules are visual support systems that combine photographs in a sequential format to represent a targeted sequence in the student’s day (Banda, Grimmett, & Hart, 2009). They provide the student with predictability and promote student engagement and performance of classroom activities and decrease dependence on adults. As a prompting system, they represent a means to communicate both what and how much work is expected to be completed (Bryan & Gast, 2000). There has been much research on the use of picture activity schedules with children with Autism Spectrum Disorders, but more research is needed on the use of these schedules on children with noncompliant behaviors.

Macduff, Krantz, and McClannahan (1993) used graduated guidance to teach four boys with autism (aged 9-14) to use picture activity schedules. The researchers measured the effect of the schedules on the rates of both on-task and on-schedule behaviors and the study showed a significant increase in both variables for all participants. The researchers also noted that after training, the participants were able to follow the picture schedules independently, without prompting from the teacher. All four boys also showed much lower rates of aberrant behaviors, based on anecdotal observations from the teacher and researchers.

A similar study by Bryan and Gast (2000) used graduated guidance and picture activity schedules on four 7-8 year old students with autism. All four students were high-functioning individuals, less than a year below grade level in reading. The researchers measured the effects of the picture schedules on on-task and on-schedule behaviors. The study demonstrated that picture activity schedules were highly effective in increasing these
behaviors. The participants picked up on the process very easily, became much more independent from teachers and aides, and demonstrated a large decrease in nonscheduled behaviors during the treatment phases.

Spriggs, Gast, and Ayers (2007) looked at the effects of picture activity schedules on the on-task and on-schedule behaviors of four students with moderate intellectual disabilities. For all four students, picture activity schedules increased both of these behaviors significantly. Additionally, social validity measures in this study showed that teachers in the classroom thought that picture activity schedules were a useful management tool and increased student independence for the students.

**Current Consultation.** The current consultation examines the effect of an intervention support package on a preschooler referred for problem behaviors in multiple areas. One area of concern was the student’s bus riding behaviors. Additionally, the teachers in the classroom had concerns with the student running away (elopement). Overall, the preschooler exhibited high rates of noncompliance and disruptive behaviors in the classroom. The intervention package included components of functional communication training, differential reinforcement of alternative behavior, general teacher training, and a picture activity schedule. The effects of this intervention package were measured on different behaviors in the areas of concern. In addition, a context for this consultation was agency-wide and classroom PBS.

**Methods**

**Participants and Setting**

The child of concern was a three-year old girl from a Midwestern Head Start classroom. The student was selected based on a teacher referral for behavior concerns.
The student, Rebecca (name changed to protect identity), did not respond to general class wide behavior supports and was referred due to concerns in multiple areas. Considering her age, the teachers were not concerned at this point in time with Rebecca’s academic skills. The child had been referred to the area schools for additional support, but as of the time of this report, had not yet been evaluated.

The classroom in which the student participated had seventeen students. One hundred percent of the students qualified for free lunch. The teachers had class wide rules for each activity the students participated in that they went over a few times a week. Additionally, class-wide contingencies for appropriate behavior were in place within the class-wide PBS model. The classroom had a lead teacher and an assistant teacher present at all times, and the teacher to student ratio was 1:8-1:9 most of the time.

**Targeted Variables**

The targeted variables were selected based on areas of concern as presented in the teacher’s referral form, a teacher interview, preliminary observations, and descriptive functional assessments.

**Bus-riding behaviors.** Inappropriate bus behavior was defined as the student undoing her seatbelt, getting out of her seat during the bus ride, or both. The variable was chosen due to teacher, bus monitor, and bus driver concerns for the target student’s safety as well as the safety of the other children on the bus. Baseline data for this behavior was collected via a bus monitor daily report that was filled out at the end of the bus ride. Progress monitoring data were collected one to two times per week (25%-50% of intervention sessions), depending on when Rebecca’s classroom teacher was the bus
monitor. These data were collected via a verbal report by the teachers to the consultant on how many times, if at all, Rebecca got out of her seat on the bus on a given day.

**Elopement.** The second area of concern was the child running away from the teachers. Elopement was defined as the student leaving a designated area without teacher permission. This variable was measured by a teacher tally keeping track of when Rebecca ran away. This behavior occurred twice before the referral was made. Both times, the student ran from the outdoor playground back inside the building without notifying the teachers.

**Noncompliance and unoccupied behavior.** Lastly, the student’s noncompliance and unoccupied behavior were measured. These behaviors were measured by a code developed by the consultant. The code recorded the type of command (Alpha, such as a clear, developmentally appropriate request, or Beta, or an unclear request such as from across the room), whether repeat requests were made, compliance, and unoccupied behavior. See Appendix A for the compliance code and code definitions. Compliance was coded if the child complied with a teacher request (individual or group) within five seconds of the request or a repeat request. Unoccupied behavior was coded when the student was disengaged from the assigned task (e.g., wandering around the room, staring out the window during circle time).

**IOA Results**

IOA for the compliance code was on average 99.6%. See Table 1 for results by date.
Table 1: Interobserver Agreement

<table>
<thead>
<tr>
<th>Date</th>
<th>Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/19/2009</td>
<td>99.2%</td>
</tr>
<tr>
<td>2/11/2010</td>
<td>99.7%</td>
</tr>
<tr>
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<tr>
<td>3/11/2010</td>
<td>100%</td>
</tr>
<tr>
<td>4/29/2010</td>
<td>99.3%</td>
</tr>
</tbody>
</table>

Functional Hypothesis

ABC data were recorded on the student’s noncompliant behavior (10/22/09 and 10/26/09) and it seemed as though there were multiple antecedents and consequences that may have maintained the problem behavior. Among these, both attention and escape are likely consequences for the child’s behaviors. Elopement was hypothesized to be related to Rebecca having to go to the bathroom, and not appropriately asking to do so.

Design

This consultation employed an A/B design, comparing baseline of each of the variables to intervention rates for each of the variables for the purpose of progress monitoring.

Baseline

Baseline data for the bus riding behaviors was based on the teacher’s notations on the referral form, and a bus monitor daily report filled out daily for a week prior to the intervention implementation. Baseline data for the elopement behaviors were reconstructed. The referring teacher estimated the dates that this behavior occurred, but
knew for certain that it had happened twice. Lastly, baseline data for noncompliance and unoccupied behaviors were collected by the consultant using the observation code on three separate occasions prior to intervention implementation.

**Intervention Procedures (Independent Variables)**

An intervention package was created to address the multiple areas of concern for the target student.

**Bus-riding Intervention (Int Conditions 1 & 2).** For the bus riding behaviors, a differential reinforcement of alternative behavior (DRA) procedure was used. The consultant discovered that the target student liked stickers, so a sticker chart was developed. If the student stayed in her seat, with her seatbelt on, for the entire bus ride, she got to put a sticker on the chart. At the end of the week, if the student earned three (out of four opportunities) stickers, she earned the right to take home a doll provided by the consultant for the weekend. The parent would then send the doll back to school on Monday so that the student had the opportunity to earn the reinforcer again the next week. The intervention was implemented by the bus monitor, who was a teacher or administrator at the Head Start school. The monitor was different every day, so a simple script was made up and all the monitors were trained prior to implementing the intervention. See Appendix B for the bus intervention script. In February, the intervention was modified slightly due to a concern with adherence for the multiple bus monitors. The sticker chart was kept in the classroom after this, and based on the bus driver’s report, Rebecca would get to put a sticker on the chart there with the teachers instead of on the bus.

**Natural Withdrawal Condition.** The natural withdrawal condition occurred one week when the doll reinforcer was not returned to the school after being sent home for the
weekend. Because the child had no reinforcer to earn this week, it was considered a natural withdrawal phase.

Adherence for the bus-riding intervention. Adherence data was collected by the consultant’s observations of the use of the sticker chart, as well as direct questioning of the teachers once a week, or 25% of intervention sessions. The consultant asked the teachers about Rebecca’s specific behaviors, as well as the use of the sticker chart and doll reinforcer.

Elopement intervention. An intervention was developed for the elopement behavior based on a social script for appropriately asking to go to the bathroom. Additionally, Functional Communication Training (FCT) was used to train the student how to ask the teacher to go to the bathroom. This intervention was implemented by both the consultant and the teacher. The social script was first read to the student. Then, the consultant and the teacher demonstrated appropriate “asking to go to the bathroom” behavior. Then Rebecca practiced this behavior with the teacher. Finally, the teacher was instructed to praise the student whenever she asked to go to the bathroom. The social script/FCT intervention was implemented over the course of three weeks, in six sessions. See Appendix C for the FCT intervention script.

Adherence for elopement. Adherence data was collected for 50% of intervention sessions by a checklist created by the consultant. The consultant took part in the training, so was present for all of the FCT sessions. During 50% of these sessions, the consultant filled out the checklist when each intervention step had been completed.

Noncompliance and unoccupied behavior intervention (Activity schedule + reinforcement condition). A multiple-component intervention was developed to help
with the noncompliant behavior in the classroom. The consultant first created a picture activity schedule. The list of activities for the schedule was provided by the teacher, and the consultant had the child pose in each of the activities for this book. Additionally, a DRA procedure was used to reinforce appropriate behavior exhibited by the student. The student was trained on how to use the activity book, and the teacher was trained and prompted to give the reinforcers, while specifically addressing what step in the schedule book was being done appropriately by the student. The reinforcers used were preferred activity coupons for five minutes each. The child could cash in coupons one at a time or all at once. The preferred activities were for a reward box of activities the child liked to do (e.g., beading for necklaces, fairy wings to wear around, stickers and ribbons for scrapbooking).

Additionally, a home-school daily report card was requested by the parent. The consultant created a report in which the teacher would circle a smiley face or a sad face for questions regarding the specific behaviors being targeted for intervention. The mother agreed to praise the child when she had a good day, but was informed not to punish the child when she had a bad day, only to encourage good behavior for the next day. See Appendix D for daily report card. The intervention was implemented by the teacher and assistant teacher, with training and prompting from the researcher during the feedback phase. See Appendix E for intervention script.

Feedback condition. During the feedback condition, the consultant observed the teachers implementing and training the student on the intervention, and then provided them with constructive feedback on adherence and implementation. Additionally, the consultant provided prompts to the teachers for completing certain intervention steps. For
example, the consultant would prompt the teachers to provide reinforcement to the student when she was behaving appropriately. This condition was designed to function as a training condition, in which the teachers were learning how to implement the intervention and provided prompts and feedback from the consultant while learning.

**Intervention + noncontingent positive attention condition.** In February, the intervention was changed slightly to fit better into the classroom and the teachers’ schedule. Instead of prompting Rebecca to use the picture schedule before each transition, the teachers would sit with her for 5 minutes at the beginning of the school day and go over the schedule with her. Additionally, a brief meeting with the parent was held (3/18/10) to inform the parent of the student’s progress.

**Adherence for noncompliance.** Adherence data was collected for 25% of intervention sessions, or once a week. Adherence was collected via direct observation from the consultant. A checklist based on the teacher script for this intervention was used, and the amount of steps the teachers followed correctly were recorded.

**Additional teacher supports.** In addition to the previously described interventions, the teacher was trained on several research-based methods to increase overall class compliance. Among these techniques were the use of “do” commands and the decrease of “don’t” commands, embedded requests, giving choices, and the high-probability instructional sequence (in which the teacher gives 2-4 requests that have a high likelihood of compliance, then delivers the target request). These procedures were not monitored for adherence due to the overall intervention complexity, but they may have contributed to the results of the intervention. Additionally, early in the academic year the teachers participated in an agency-wide staff development regarding PBS and, more specifically,
uses of simple classroom interventions and progress monitoring for students who may need a referral for support services. This training and the teachers’ resulting behavior may have also had an effect on the results of the intervention.

**Social Validity**

The intervention procedures used for this individual student were developed collaboratively with both the mother of the student and both classroom teachers. Social validity was measured through a questionnaire at the end of the consultation.

**Results**

**Adherence Results**

Adherence results are reported in Tables 2, 3, and 4. Three interventions were monitored, and adherence was mostly high for all three. It should be noted that on many observation days, the consultant implemented the intervention herself (marked with *). The adherence would have been lower on these days, and it is probable that the intervention adherence was low on the days that the consultant was not observing.

*Table 2: Activity Schedule*

<table>
<thead>
<tr>
<th>Date</th>
<th>Adherence (%)</th>
</tr>
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<tbody>
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</tr>
<tr>
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</tr>
<tr>
<td>11/24/09</td>
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</tr>
<tr>
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<td>100%*</td>
</tr>
<tr>
<td>12/10/09</td>
<td>100%*</td>
</tr>
<tr>
<td>12/15/09</td>
<td>50%</td>
</tr>
<tr>
<td>1/12/10</td>
<td>100%*</td>
</tr>
<tr>
<td>1/14/10</td>
<td>75%</td>
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<td>100%*</td>
</tr>
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<td>100%*</td>
</tr>
<tr>
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</tr>
<tr>
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<td>Date</td>
<td>%</td>
</tr>
<tr>
<td>---------</td>
<td>----</td>
</tr>
<tr>
<td>3/24/10</td>
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</tr>
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</tr>
<tr>
<td>Mean</td>
<td>83.5%</td>
</tr>
</tbody>
</table>

Table 3: Bus/Sticker Chart

<table>
<thead>
<tr>
<th>Date</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/09/09</td>
<td>100%</td>
</tr>
<tr>
<td>11/17/09</td>
<td>0%*</td>
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<tr>
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<tr>
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<td>100%</td>
</tr>
<tr>
<td>12/10/09</td>
<td>100%</td>
</tr>
<tr>
<td>12/15/09</td>
<td>100%</td>
</tr>
<tr>
<td>1/12/10</td>
<td>100%</td>
</tr>
<tr>
<td>1/14/10</td>
<td>100%</td>
</tr>
<tr>
<td>1/19/10</td>
<td>100%</td>
</tr>
<tr>
<td>2/2/10</td>
<td>100%</td>
</tr>
<tr>
<td>2/11/10</td>
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<tr>
<td>2/19/10</td>
<td>100%</td>
</tr>
<tr>
<td>2/26/10</td>
<td>100%</td>
</tr>
<tr>
<td>3/11/10</td>
<td>100%</td>
</tr>
<tr>
<td>3/18/10</td>
<td>100%</td>
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<td>4/29/10</td>
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<tr>
<td>Mean</td>
<td>95%</td>
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*Natural Withdrawal Phase

Table 4: FCT

<table>
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<tr>
<th>Date</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>11/09/09</td>
<td>100%</td>
</tr>
<tr>
<td>11/17/09</td>
<td>100%</td>
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<tr>
<td>11/24/09</td>
<td>100%</td>
</tr>
<tr>
<td>12/01/09</td>
<td>100%</td>
</tr>
<tr>
<td>12/10/09</td>
<td>100%</td>
</tr>
<tr>
<td>Mean</td>
<td>100%</td>
</tr>
</tbody>
</table>
Progress Monitoring Results

Figure 1 demonstrates the results of the DRA bus-riding intervention. The reconstructed baseline phase (R. Baseline) includes data reported by the teacher from memory when she filled out the referral form. A second baseline data was collected via the bus monitor daily reports before the intervention began. Int 1 lasted for one week, and the natural withdrawal phase (NW) occurred when the reinforcer (doll) was not returned from home by the school, so the intervention was not in place for those few days. Int 2 shows data from when the reinforcer returned. During both intervention phases, the student’s inappropriate bus-riding behaviors (i.e., getting out of her seat or undoing her seatbelt) were reduced to zero per bus ride, compared to the 0-3 occurrences per bus ride during the baseline and natural withdrawal conditions.

Figure 1: Bus Riding Intervention Data
Table 5 reports summary statistics for this measure. 83% of intervention points did not overlap with baseline levels. Cohen’s $d$ is 2.38, which is considered a large effect size.

**Table 5: Summary Statistics for Bus-Riding Intervention**

<table>
<thead>
<tr>
<th>Summary Statistic</th>
<th>Value</th>
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<tbody>
<tr>
<td>Number of Data Points</td>
<td>Baseline: 7; Intervention: 2: 19</td>
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<tr>
<td>Baseline Mean</td>
<td>2.29</td>
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<tr>
<td>Baseline Standard Deviation</td>
<td>1.11</td>
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<tr>
<td>Intervention Mean</td>
<td>.21</td>
</tr>
<tr>
<td>Intervention Standard Deviation</td>
<td>.54</td>
</tr>
<tr>
<td>Percent Non-overlapping Data</td>
<td>83%</td>
</tr>
<tr>
<td>Cohen’s D</td>
<td>2.38</td>
</tr>
</tbody>
</table>

Figure 2 shows the results of the FCT and social script intervention on Rebecca’s elopement instances. Elopement occurred twice during the baseline condition. The BL data were reconstructed since it was a low-incidence behavior. After the intervention began, elopement went down to zero instances per week.

**Figure 2: Elopement Occurrences**
Table 6 shows the summary statistics for this measure. Percent non-overlapping data is 0%, due to the low occurrence of this behavior during baseline. Cohen's $d$ is .84, which is considered a large effect size.

**Table 6: Summary Statistics for Functional Communication Training Intervention**

<table>
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<th>Summary Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Data Points</td>
<td>Baseline: 7; Intervention: 7</td>
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<tr>
<td>Baseline Mean</td>
<td>.29</td>
</tr>
<tr>
<td>Baseline Standard Deviation</td>
<td>.49</td>
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<tr>
<td>Intervention Mean</td>
<td>0</td>
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<td>Intervention Standard Deviation</td>
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<tr>
<td>Percent Non-overlapping Data</td>
<td>0%</td>
</tr>
<tr>
<td>Cohen's $d$</td>
<td>.84</td>
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</table>

Figure 3 shows the results of the noncompliance and unoccupied behavior intervention. The baseline (BL) phase shows Rebecca’s compliance before intervention supports were in place. During the feedback (FB) phase, the consultant was present to train both the student and the teachers and prompt them to use the reinforcers and activity schedule. Rebecca’s compliance raised to 50-53% during these two sessions, from the baseline levels of 10-17%. During the intervention phase, compliance dropped down to 16%, the intervention adherence was very low during this observation session, however. After the intervention was modified and noncontingent reinforcement was added, adherence increased and the compliance increased to 60-100%.
Figure 3: Compliance.

Table 7 shows the summary statistics for this measure. The data points in the Intervention + Noncontingent Positive Attention phase showed 100% non-overlapping data from baseline levels. Cohen's $d$ was -8.65, which is considered a large effect size.

**Table 7: Summary Statistics for Compliance Intervention**

<table>
<thead>
<tr>
<th>Summary Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Data Points</td>
<td></td>
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<tr>
<td>Baseline Mean</td>
<td>14</td>
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<tr>
<td>Baseline Standard Deviation</td>
<td>3.61</td>
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<tr>
<td>Intervention Mean</td>
<td>87.7%</td>
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<tr>
<td>Intervention Standard Deviation</td>
<td>11.5</td>
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<tr>
<td>Percent Non-overlapping Data</td>
<td>100%</td>
</tr>
<tr>
<td>Cohen's $d$</td>
<td>-8.65</td>
</tr>
</tbody>
</table>

Figure 4 shows Rebecca’s unoccupied behaviors during observation sessions. Baseline levels of these behaviors showed Rebecca was unoccupied during 13-23% of
observed intervals. During the feedback phase of the intervention, unoccupied behaviors were observed between 0 and 13% of intervals. After the noncompliance and unoccupied behavior intervention was introduced, the student’s unoccupied behaviors stayed high (18% of intervals) for one point, although intervention adherence was low during this observation session. Unoccupied behaviors then dropped down to between 3 and 10% each observation session. After the intervention was modified and noncontingent reinforcement was added, unoccupied behaviors decreased to below the 5% goal level, as adherence increased.

*Figure 4: Unoccupied Behavior*

Table 8 shows the summary statistics for this measure. Data from the final intervention condition were 100% non-overlapping with baseline levels. Cohen’s $d$ is 3.99, which is considered a large effect size.
Table 8: Summary Statistics for Unoccupied Behavior Intervention

<table>
<thead>
<tr>
<th>Summary Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Data Points</td>
<td>Baseline: 3; Intervention + Noncontingent Positive Attention: 11</td>
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<td>Baseline Mean</td>
<td>18.67</td>
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<td>Baseline Standard Deviation</td>
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<tr>
<td>Intervention Mean</td>
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<td>Intervention Standard Deviation</td>
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<tr>
<td>Percent Non-overlapping Data</td>
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</tr>
<tr>
<td>Cohen's d</td>
<td>3.99</td>
</tr>
</tbody>
</table>

Social Validity Results

Table 9: Social Validity Results

1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Disagree

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean Teacher Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>I had adequate input in developing the intervention script</td>
<td>5</td>
</tr>
<tr>
<td>The intervention script was easy to follow</td>
<td>5</td>
</tr>
<tr>
<td>I liked the procedures used in the intervention</td>
<td>5</td>
</tr>
<tr>
<td>The intervention was easy to include in my daily routine</td>
<td>4.75</td>
</tr>
<tr>
<td>I would be willing to use this intervention in the future</td>
<td>5</td>
</tr>
<tr>
<td>Overall, the intervention was beneficial to the students</td>
<td>4.75</td>
</tr>
<tr>
<td>Additional Comments</td>
<td>Ideas for behavior were a great idea. I am so grateful to have more exciting behavior prompts for the children. Thanks!</td>
</tr>
<tr>
<td>Mean Rating</td>
<td>4.92</td>
</tr>
</tbody>
</table>
Table 9 shows the results of the social validity rating scale, averaged between the two teachers in the classroom. Additionally, the consultant asked both teachers and the student how they liked the interventions informally. Anecdotal data suggest that the student really likes the intervention package. Additionally, the teachers and bus monitors alike felt as though the bus riding intervention was very helpful and reduced the target student’s problem behaviors significantly. A recent conversation with the teacher led the consultant to believe that the teacher was pleased with the picture schedule and coupon reinforcement intervention, however at times she forgets to carry the coupons with her. Additionally, the parent reported (3/18/10) that Rebecca's behavior at home had improved significantly.

**Discussion**

The results of the Functional Communication Training show very effective results for Rebecca’s elopement behaviors. The consultant’s hypothesis related to Rebecca’s elopement behaviors was confirmed by the rapid decrease in elopement after the social script and Functional Communication Training occurred. After the intervention took place, elopement dropped to zero for the rest of the academic year. These intervention results were not confirmed through an internally valid design, but considering the danger to the child that this behavior can create, the rapid decrease in elopement was a very positive effect in the classroom.

Additionally, results of the Differential Reinforcement of Alternative behavior intervention on the bus proved very effective in reducing problem behaviors to and from school. Once again, undoing her seatbelt and getting out of her seat in a moving bus are very dangerous behaviors both for the student and the other children on the bus. The
natural withdrawal phase demonstrates that when the reinforcer was no longer present for
the student, her behaviors once again increased to near-baseline levels. This demonstrates
that the sticker chart did have an effect on these behaviors for this student. Additionally,
there was a slight resurgence of inappropriate bus behaviors after the December break, but
it was determined that the child was seeking attention both on the bus and in the
classroom, so classroom intervention modifications were made to accommodate this, and
bus behavior once again improved. This intervention shows promise for rapidly reducing
dangerous behaviors such as these. In this case, it was very important that a potent
reinforcer was used (a doll). Additionally, the student received a less potent, intermittent
reinforcer after every bus ride (a sticker), which was important because a week may have
been too long to wait for reinforcement for staying in her seat, and the intervention may
not have worked.

The picture activity schedule and reinforcement intervention appears to have had a
positive effect on Rebecca’s classroom compliance and unoccupied behaviors. There were
many complications with this intervention, however. First of all, it is unclear whether or
not the intervention was being adhered to when the consultant was not present in the
classroom. The consultant implemented the intervention many days, and on the days she
did not, she prompted the teachers to complete the steps. The classroom in which this
student was placed had multiple concerns, including other students with disruptive
behaviors, several English Language Learners with academic concerns, and other students
with academic concerns. Because of this, prioritizing was difficult, and implementation of
these complicated interventions became difficult for the teachers at times.
After the December break, the student returned to the classroom with very low rates of compliance and very high rates of unoccupied behaviors. It was determined that she was again seeking attention, due to factors at home. Additionally, around this time adherence for these interventions was very low, so a meeting was held to discuss ways to amend the supports so that the teachers would be able to fit them into their routines. After these changes were made, and the teachers began giving Rebecca positive attention non-contingent on her behavior, the rates of compliance once again became very high, and unoccupied behaviors very low.

Despite these complications, after the activity schedule and reinforcement intervention, along with noncontingent positive attention, the student showed marked improvement in her classroom behaviors. Additionally, she was able to sit during the entire instructional period the last month of intervention, which she never did before the intervention was started. Anecdotal information suggests that the teachers were extremely pleased with this student’s progress, and had to spend much less time in the classroom managing her behavior, and therefore more time teaching.

Limitations to this consultation include that the consultant used accountability designs to progress monitor these interventions. While the student shows marked improvement, it is difficult to tell whether these improvements were the results of the intervention or some other factor. Another possible reason for improvement could have been maturation, since the child was very young and may have simply matured appropriately throughout the academic year. Another limitation to this consultation is the question of adherence when the consultant was not present in the classroom. This again brings into question whether or not the classroom interventions prompted change.
Additionally, there were many intervention components addressing the multiple areas of problem behavior, so it is difficult to tell which components may or may not have had an effect on behaviors.

Social validity data suggest that the teachers felt as though the intervention was easy to include in their daily routine, and had benefitted the student. Additionally, the teachers reported being grateful for the training in prompting with the students as a means to improve behavior. Informal social validity data collected from the parent suggest that the improvements in behavior in school may have generalized to the home. The student herself also reported liking the supports.

Despite the limitations and lack of causality, this student showed marked improvement during this academic year in all referred areas of behavior. Additionally, it is important to note that the student’s most dangerous behaviors, elopement and inappropriate bus-riding behaviors, decreased to near-zero levels almost immediately after the interventions were introduced. This student has been referred to the local school district, but not yet evaluated. It is likely after her progress this year, that she may not need as much support in coming years. This should ensure that she is getting appropriate instruction to make academic gains, as well as not participate in any dangerous behaviors that may harm her or other students.

This consultation demonstrates the author’s use of a scientist-practitioner model, through the use of multiple interventions based in research and an accountability design. Using this accountability design, as well as data on treatment adherence, the consultant was able to make data-based decisions regarding supports necessary for this student to
succeed in the classroom. In addition, all interventions and intervention modifications were developed collaboratively with the teachers and, at times, the parent.

Additionally, this consultation demonstrates the use of a Positive Behavior Support model for a single student needing an intensive, individualized intervention for disruptive behaviors. The agency in which this consultation took place had just begun to implement this model, and as such there were many imperfections of this system that need to be worked out. This consultation, however, demonstrates the use of a Tier 3 intervention within the model that, based on outcome data, was successful in reducing disruptive and dangerous behaviors with this target student. In addition to the intensive services Rebecca received, she was still receiving class-wide, Tier 1 supports for behavior, including contingencies for appropriate behavior and positively stated rules. Despite the multiple challenges in this classroom this academic year, the teachers, with the help of the consultant, were able to improve student outcomes on many levels within a class- and agency-wide PBS model.
References


Appendix A: Compliance Code and Definitions

Compliance Code Definitions

CAT: (Child approaches Teacher) This category is scored when the child approaches the teacher or other adult. This may be in the form of a verbal approach such as initiating conversation or to ask for permission to perform some action. This category is only scored for each approach to the teacher. Each new initiation is scored, not responses by the child to ongoing conversation.

TC-A: (Teacher Command-Alpha) This category is scored for direct commands by the teacher or adult in classroom toward the child requiring a motoric response by the child. This will occur in the form of imperatives such as "Come here!" or "Pick up your toy." or questions such as "will you bring me your paper?". Alpha commands are clear and direct enough for the child to understand them and to comply. If the command is given to the group, write a "G" in the box.

TC-B: (Teacher Command-Beta) This category is scored when instructions or commands are given to the child to which the child has no opportunity to comply. Beta commands are (a) too vague for the child to know which action to perform, (b) the child does not have sufficient time to perform the task (e.g., 5 sec.), or (c) the task is carried out by the teacher/adult before the child has the opportunity to comply. Also, conditional statements such as "if/then" statements are scored as Beta commands. As with TC-A, write a 'G' in the interval if the command is directed at the group.

RRR: (Repeated Requests) This category is scored if the teacher makes repeated requests of the same command to either the group (mark G) or the individual child.

CC: (Child Compliance) This category is scored when the child responds directly to the command given by the teacher or adult within approximately five seconds. Thus, this category can only be scored after TC-A or TC-B. Any degree of compliance is scored as an occurrence. For example, if the child is having a tantrum and the teacher tells him/her to "be quiet and settle down!" and the command is followed by the child’s reducing the intensity of the tantrum to a marked degree (the observer will have to make a judgment about the reduction of the behavior), the behavior would be scored as CC if it occurred within five seconds. A score in this category does not have to occur within the interval in which the command was given. For example, if a command was given in interval "2" and the child complied while the observer was scoring interval "3", it would be scored in interval "3".

Att+: (Positive Attention) This category is scored when the teacher fives the child physical or verbal approval or praise for anything the child does.

Att-: (Negative Attention) This category is scored when the teacher or adult conveys to the child disapproval, discouragement, or nonacceptance of the child’s activities. General reprimands and vague disapprovals are both scored in this category.

UB: (Unoccupied Behavior) This category is scored when the child is not engaged with an activity or is in between activities. Included in this category are wandering around the room, looking around the room or out of the window, going to pick up another activity (e.g., the child finishes an activity and is in the process of getting another one), watching children playing but not participating.

Source: The Preschool Observation Code by Ronald Bramlett, Ph.D., University of Central Arkansas
<table>
<thead>
<tr>
<th>Date</th>
<th>Observer</th>
<th>Co-observer</th>
<th>Interval Length</th>
<th>Time began</th>
<th>Time ended</th>
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<tr>
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<td></td>
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<td>Compliance Code</td>
<td></td>
<td></td>
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<tr>
<td>1 CAT TC-A TC-B RRR</td>
<td>CC Att+ Att- UB</td>
<td>2 CAT TC-A TC-B RRR</td>
<td>CC Att+ Att- UB</td>
<td>3 CAT TC-A TC-B RRR</td>
<td>CC Att+ Att- UB</td>
</tr>
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<td>CC Att+ Att- UB</td>
<td>5 CAT TC-A TC-B RRR</td>
<td>CC Att+ Att- UB</td>
<td>6 CAT TC-A TC-B RRR</td>
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</tr>
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<td>29 CAT TC-A TC-B RRR</td>
<td>CC Att+ Att- UB</td>
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</tr>
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<td>TC-B</td>
<td>RRR</td>
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<td>-----</td>
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</tr>
<tr>
<td>31</td>
<td>ATT+</td>
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<td>UB</td>
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<td>34</td>
<td>ATT+</td>
<td>ATT-</td>
<td>UB</td>
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<td>ATT+</td>
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</table>

CAT= Att+= CC to TC-A= 
TC-A= Att-= CC to TC-B= 
TC-B= CC total= UB= 
RRR= CC w/o repeat requests=
Appendix B: Teacher Script for Bus Intervention

**Sticker Chart Script**

1. Have class wide practice for appropriate bus-riding behaviors.

2. Remind student at the beginning of the bus ride that she can earn a sticker if she keeps her seatbelt on and stays in her seat for the entire ride.

3. Give student praise during the bus ride for staying in her seat.

4. When the bus arrives at the school, immediately pull out the sticker chart.

5. If the child stayed in her seat the entire ride, give her brief praise, give her a sticker, and allow her to put it on the chart.

6. If the child got out of her seat or undid her seatbelt during the bus ride, do not give her a sticker. Explain to her that she’ll need to stay in her seat the next ride if she wants to get a sticker.

7. Count with the child how many stickers she has earned that week.

8. On Thursday, if the child has earned at least 6 stickers, give her additional reward and praise her.
Appendix C: Teacher Script for FCT and Social Scripts

Social Script

1. Go through social script before doing Functional Communication Training.

2. Read social script to student, and stop to ask her questions about the story.
   a. Social script will tell a story about a student who has to go to the bathroom.
   b. Will walk through the steps, including and emphasizing asking the teacher to take her to the bathroom.
   c. The script will end with the teacher taking the student to the bathroom and then going back to class.

3. Continue to Functional Communication Training, modeling, and practicing the social script.

   Functional Communication Training

1. Explain to the child that we’re going to work with her on asking the teacher for help.

2. Say “If you have to go to the bathroom, ask your teacher. Like this.” Model asking the teacher to go to the bathroom.

3. Say, “Now you try it.”

4. If the student responds correctly, offer praise. If the student does not respond correctly, model again and prompt for correct response.

5. At the end of the session, offer student reinforce (sticker) for completing the training.

6. Throughout the day, praise the student whenever she asks to go to the bathroom, and take her immediately.

7. If student does not ask and runs away to the bathroom, remind her to ask and practice this response.
Rebecca’s Daily Report Card

Date: ____________

Did Rebecca stay in her seat on the bus today?
↩️ YES  ☹ NO

Did Rebecca run away from her teachers today?
☹ NO  ☺ YES

Did Rebecca listen to her teachers most of the day?
☺ YES  ☹ NO

Overall, how was Rebecca’s day today?
😊 ☹️ 😞

Teacher Comments ________________________________
__________________________________________________________________________________________
__________________________________________________________________________________________
Appendix E: Teacher Script for Activity Schedule

**Activity Schedule Script**

1. Teacher provides a list of daily activities for Rebecca.

2. Rebecca will pose for pictures doing each activity.

3. A picture schedule will be made up, using the pictures to represent each activity Rebecca completes during the day.

4. At the beginning of the day, the teachers will sit down with Rebecca and go over the activity schedule with her.

5. The teachers will provide Rebecca with a free-time activity coupon for each activity she completes in compliance and in accordance with the activity schedule.

6. At the end of the day, a note can be sent home letting the parent know whether Rebecca had a good day or a bad day. (Although it is important that the parent does not punish Rebecca when she had a bad day, only encourage her to do better the next day).
A Functional Behavior Assessment of a First-grade Student with a Low-incidence Disability

A first-grade boy diagnosed on the Autism Spectrum disorder was referred for throwing objects, yelling and screaming, and general noncompliant behaviors. The consultants in this case, two Graduate students with a local university, conducted a functional behavior assessment as part of their practicum experience. After the initial teacher interview, the consultants hypothesized that the student exhibited the target behaviors on the days when the student’s grandfather dropped him off at school, which functioned as a motivating operation. Discriminative stimuli appeared to be math seatwork and/or teacher prompts, and the problem behaviors were reinforced by teacher attention and/or assistance with the tasks. Observations using a functional assessment observation code confirmed the consultants’ hypothesis.

Methods

Participants and Setting

The current consultation took place in a Midwestern elementary school. The referred student was an 8-year old boy identified as being on the autism spectrum. The student spent most of his day in the sensory room, in which two special education teachers were present all day. There were two other students in the room most of the time, both also identified as on the autism spectrum. The target student was in the general education classroom for language arts instruction and with the general education students during recess. The student was at grade-level in reading, but had little functional language, and had difficulty voicing his wants and needs. When he spoke, most of the time he quoted his favorite TV show. It may be the case that he possessed the necessary language skills to speak functionally (i.e., use language to voice needs and wants), but was not reinforced for
using it often. He often received peer and/or teacher attention for quoting the TV show, so maybe this language was more reinforcing for him. The student was unable to grasp basic math concepts, such as counting.

In the sensory room where the student spent most of his day, multiple class-wide supports were in place to assist in prevention of problem behavior. The teachers employed a reward/punishment system where the student had to move their note card from green, to yellow, to red for each occurrence of problem behavior. The students had the chance to move back up in colors once throughout the day for appropriate behavior. At the end of the day, if the student’s card was green, he gained access to the book corner for 15 minutes. Additionally, the teachers employed an activity schedule using picture cards for each student. When it was time to transition to a new activity, the student would be instructed to check his schedule, and then would move the activity card to the appropriate place in the room before starting the activity.

The consultants for this case were two graduate students from a local university who were assigned to work with the school psychologist in this school building as part of their practicum experience. The student was referred to the school psychologist for problem behaviors, and the school psychologist assigned the case to the two graduate students.

**Functional Behavior Assessment Procedures**

The consultants began the FBA process with a slightly modified Functional Assessment Checklist for Teachers and Staff (March et al., 2000). The interview was conducted with the lead special education teacher in the sensory room in which the target student was placed. During this initial interview, problem behaviors were identified as
well as most likely times that these behaviors would occur. Additionally, possible antecedents and consequences were discussed. The problem behaviors (defined below in the target variables section) were reported by the teachers as occurring more often during independent seatwork time in the morning and during math instructional time in the afternoon. Additionally, the teacher reported that the problem behaviors were more likely to occur on days that the student’s grandfather dropped him off at school than when the student’s mother dropped him off at school. The teacher reported that the student was never allowed to escape assigned tasks when he exhibited problem behavior, but that the teachers usually assisted the student with the task. Additionally, the teacher reported giving the student reprimands when he exhibited the problem behaviors.

In addition to the interview, the consultants conducted a records review of the target student’s individualized education plan (IEP). Most of the goals on the IEP were related to motor skills (fine and gross) and math. During the interview, the teacher mentioned that most of the student’s math goals were going to be difficult to achieve, since the student had difficulty grasping even the most basic math concepts, such as counting. There were no functional language or social skills goals included on the IEP.

Based on the initial interview, the consultants chose to observe during independent time in the morning and math instructional time in the afternoon. They developed an observation form based on the functional assessment observation form (Crone & Horner, 2002). The consultants filled out this form based on the hypothesized behaviors, antecedents, consequences, and motivating operations from the teacher interview. See Appendix A for a copy of the observation form. The consultants observed for a total of 6, 1-hour observation sessions during independent morning work and math instructional time,
which had each been identified during the interview as time periods where the target
behaviors were likely to occur. During the first two sessions, the consultants observed
together in order to check for reliability, and the last session was also observed by both
consultants. Three other observation sessions were conducted with only one of the two
consultants present. After 6 observation periods, the consultants had enough data to
support their hypothesis, and realized that the target behaviors were difficult to observe
due to the fact that they were low incidence. As such, after 6 sessions, the consultants
ended their observations. A total of 19 events were observed during these observation
sessions.

**Literature Review**

**Motivating Operations**

A motivating operation (MO), also called a setting event or an
establishing/abolishing operation, is an environmental variable that alters the reinforcing
value of something and therefore, alters the current frequency of any behavior that has
been reinforced by that thing (Cooper & Heron, 2007). When conducting a functional
behavior assessment (FBA) and/or developing an intervention for problem behavior in a
school setting, it is important to take into considerations possible effects that motivating
operations may have on a problem behavior, discriminative stimuli that may prompt the
behavior, and consequences that are maintaining the behavior (McGill, 1999). Motivating
operations may affect multiple behaviors under multiple schedules of reinforcement
(Laraway et al., 2003). An MO can be concurrent with a particular behavior, or preceding
that behavior. Preceding, or even temporally distant MOs, can influence behavior in a
subsequent condition than the MO’s original occurrence (Iwata, Smith, & Michael, 2000).
Most of the research on preceding MOs converges on the effects of satiation and/or deprivation on behavior. For example, food deprivation may have an effect on behaviors that have been rewarded with food in the past. There is far less research on the effect of other types of events that may serve as MOs in applied school settings.

**Distal Motivating Operations**

Ray and Watson (2001) conducted a study in which they identified temporally distant events (MOs) within an FBA for three, 4-5 year old students with identified disabilities. The researchers found that the distal MOs for the three students were sleep deprivation, waking up late, and enuresis (bed wetting), which resulted in a morning clean-up routine. The behaviors that these MOs affected were different for each student, but the researchers discovered that rates of each student’s identified problem behavior were significantly higher on days when the MO occurred, as opposed to days when it did not occur. This study demonstrates that MOs can alter the rate of problem behavior, by increasing reinforcing effectiveness of a stimulus, or increasing the aversiveness of tasks, therefore making escape more reinforcing. While the researchers did not develop interventions for these students, the research implies that reducing the occurrence of an MO or changing a student’s response to an event may have an effect in reducing problem behaviors under the influence of the MO.

Kennedy and Itkonen (1993) conducted a similar study using FBA to identify distal MOs for two 20 and 22 year old students who were identified with low-incidence disabilities. For one student, waking up late in the morning appeared increase rates of problem behavior, compared to days when the student woke up on time. For the other student, the researchers identified increased number of stops on the car-ride to school (i.e.,
when the driver did not take the highway) as a distal MO that effected the rates of problem behavior exhibited by this student. Based on the results of the FBA and hypothesized MOs, the researchers developed interventions targeted at eliminating the MO. For the first student, a wake-up program was implemented which reinforced her for waking up on time. Additionally, the student was made to turn off her own alarm in the morning (previously, the group home staff had done this for her). For the second student, a travel program was implemented in which the driver, who was a school aide, only took the highway route to school and did not run errands or make unnecessary stops when taking this student to school. For both students, the interventions designed to eliminate the identified MOs were successful in significantly decreasing the rates of problem behaviors.

Neutralizing Routines

Several antecedent interventions have been discussed and researched when considering a behavior case in which there is an identified distal MO. Noncontingent reinforcement, in which the target student is provided with reinforcement for the problem behavior on a fixed- or variable-interval schedule independent of behavior, is likely the most common intervention used to manipulate MOs by satiating the student with the reinforcement for the problem behavior (Iwata, Smith, & Michael, 2000). Other methods of modifying current MOs include extinction for identified reinforcement or eliminating the MO all together (McGill, 1999). Another option for treatment is the use of a neutralizing routine. A neutralizing routine would occur between an identified MO and the presentation of the associated discriminative stimulus (Horner, Day, & Day, 1997). It involves some method of “calming down” the student, who is seemingly in an agitated state due to the occurrence of the MO, which is likely to have an effect on rates of problem
behavior when a discriminative stimulus presents itself. A neutralizing routine is designed to reduce the reinforcing value (or aversiveness) of consequences associated with problem behavior before the discriminative stimulus is presented.

Horner and others (1997) conducted a study on the effects of neutralizing routines on the problem behaviors of three school-age boys with identified distal MOs. The researchers conducted FBAs on the three students, and identified MOs that involved delay of a planned, preferred activity for two of the subjects, and sleep deprivation (i.e., less than 5 hours of sleep) for the third. For the first two students, the neutralizing routine intervention that was introduced involved 10 minutes of a preferred, calming activity. One student was allowed to color during this time, and the other was allowed to look at his picture “yearbook.” For the third student, for whom sleep deprivation was an identified MO, he was allowed to take a 1-hour nap on days that the MO occurred before starting his daily activities. For all three students, the neutralizing routines greatly reduced problem behavior during the intervention conditions, compared to the two baseline conditions in which no neutralizing routines were used.

The above research summarizes the importance of the consideration of distal MOs and their effects on rates of problem behavior. Additionally, it highlights several antecedent interventions, which could be effective in reducing problem behaviors by manipulating the effects of the MO on these behaviors. There is, however, very little research on these types of MOs, as well as on interventions involving neutralizing routines to nullify the effects of these MOs on problem behaviors.
Targeted Variables

Based on the teacher referral and initial interview, behaviors targeted for functional behavior assessment were throwing objects, yelling/screaming, noncompliance, and task refusal. Throwing objects was defined as the target student picking up and throwing any object. Yelling/screaming was defined as the student yelling or screaming in a louder than normal classroom voice. Noncompliance was defined as the student not complying with a non-academic request made by the teacher (e.g., The teacher asks the student to go to a particular table, and the student continues the activity he is doing or The teacher asks the student to line up to go to the bathroom, and the student refuses). Task refusal was defined as the student refusing to work on/complete an assigned academic task. (e.g., The teacher asks the student to work on a particular academic task, and the student refuses). Noncompliance and task refusal were differentiated by whether or not the request was academic in nature. These variables were coded separately because the teacher reported during the interview that academic task refusal was a problem behavior on days when the MO occurred, whereas overall non-academic non-compliance to teacher requests occurred on occasion, but not limited to the days when the student left his grandfather. Therefore, the consultants believed that these behaviors could be functionally different. These variables were coded using a modified Functional Assessment form based on the one proposed by Crone and Horner (2002) (See Appendix A).

Interobserver agreement

Interobserver agreement was collected with both consultants co-observing with this form for 50% of observation sessions. IOA was calculated by total agreement, or the number of agreements on occurrence and non-occurrence for each event of problem
behavior. Each event included the problem behavior(s), antecedent stimuli, consequence(s), and MO. IOA was 100% during these observation sessions.

**Hypothesis**

After the initial interview, the consultants hypothesized that leaving the grandfather functioned as a motivating operation for the student, causing the student to become agitated and making work more aversive; thus providing for escape, in the form of teacher assistance, as negative reinforcement. The discriminative stimuli were hypothesized to be teacher prompts and difficult tasks/math tasks. As such, the student threw objects and yelled and screamed when these stimuli were presented, and received assistance with the tasks from his teacher, which functioned as negative reinforcement by allowing the student a form of escape for exhibiting the problem behavior(s). See Appendix B for a Competing Behavior model for this FBA.

**Intervention recommendations**

Based on the results of the functional behavior assessment, the consultants plan to recommend a neutralizing routine intervention to the teachers the calm the student before the identified discriminative stimulus of teacher prompts or math activities occurs. Since the student exhibits these problem behaviors on days that grandpa drops him off, the neutralizing routine could consist of having grandpa walk him all the way into the classroom, instead of dropping him off at the outer door. Additionally, the consultants would like to recommend that grandpa and the teacher sit down and read a book with the student, since he likes to read. This could help neutralize the student’s agitation by transitioning more gradually from the home/car ride into school. After the grandfather leaves the building, the student will already be in the classroom with his teacher, whereas
in the current routine, the student leaves his grandfather at the door, and his agitation usually begins as soon as he sees the teacher. Hopefully this transition will neutralize the effects of the MO in this case, and the student will be able to calm down before he is prompted to do his independent seatwork activities, therefore not making prompts and math tasks as aversive.

Other intervention options that will be recommended are changing the difficult task to a preferred activity, teaching the student to raise his hand and ask for a break/assistance, and rewarding appropriate seatwork behaviors with positive attention. By changing the task required of the student to a preferred activity, the discriminative stimuli of difficult tasks will be eliminated, and therefore the problem behavior will not occur. Teaching the student to raise his hand and ask for a break will serve the same function as the problem behavior, but is more acceptable in the classroom. Rewarding appropriate seatwork may increase appropriate, expected behaviors through positive reinforcement. See Appendix C for additional intervention recommendations.

Additionally, the consultants will recommend that the students IEP, which is up for review in the next month, include goals for social skills, as this is a critical period for the student to work on these skills and they are not currently included in the IEP. The teacher reported that the student does not interact much with his peers, and therefore it is important that these behaviors are considered in the student’s IEP to encourage their development and use. The consultants will also recommend that more practice with functional language be included in his goals as well. His current language use, which involves mostly quoting his favorite TV show, limits his ability to communicate with teachers and peers. Because the student has grade-level abilities to read, it is possible that
he possesses these important language skills, but is not reinforced for using them or has not had enough practice doing so. Since the math goals seem to be too ambitious, it will also be recommended that those goals are amended to be more achievable for the student, and also assist in reducing problem behaviors since these difficult tasks appear to be a key discriminative stimuli for the target behaviors. These goals should be more appropriate to his current level of functioning, and should start with the basic concepts, like counting, instead of addressing adding coins and other similar skills.

**FBA Results**

*Table 1: Occurrence of Problem Behavior with/without MO present*

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Rate per Hour when MO Occurred (Total Number of Occurrences Observed)</th>
<th>Rate per Minute when MO did not Occur (Total Number of Occurrences Observed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Throwing Objects</td>
<td>8.4 (7)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Yelling/Screaming</td>
<td>8.4 (7)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Noncompliance</td>
<td>2.4 (2)</td>
<td>.24 (1)</td>
</tr>
<tr>
<td>Task Refusal</td>
<td>8.4 (7)</td>
<td>.60 (3)</td>
</tr>
</tbody>
</table>

Table 1 shows the results of the target behaviors occurrences for the functional behavior assessment conducted. During the conditions in which the MO (leaving grandpa) occurred, the student exhibited the throwing objects behavior at a rate of 8.4 occurrences an hour. When the MO did not occur, this behavior was never observed. The student yelled/screamed at a rate of 8.4 occurrences per hour when the MO occurred, and never yelled/screamed when the MO did not occur. Noncompliance was observed at a rate of 2.4 instances an hour when the MO occurred, and a rate of .24 instances an hour when the MO
did not occur. Lastly, task refusal was observed at a rate of 8.4 occurrences per hour when
the MO occurred, and observed at a rate of .60 instances per hour when the MO did not
occur.

Math unstructured tasks and teacher prompts were discriminative stimuli for the
problem behaviors 26% and 63% of the occurrences, respectively. Reprimands and
teacher assistance were consequences for instances of problem behaviors for 63% and
74% of instances, respectively.

Discussion

The data above show that a temporally distant MO may have an effect on problem
behavior in a school setting. With the exception of a few events of noncompliance and task
refusal, none of the primary behaviors of concern (i.e., throwing objects,
yelling/screaming) occurred except on days when the student’s grandpa dropped him off.
Additionally, these behaviors were seen even as the student was entering the building, so
it’s possible that leaving grandpa put the student in an agitated state that caused regular
school tasks and teacher prompts to be aversive to this student. Therefore, the data
confirm the consultants’ original hypothesis that this MO causes tasks to be aversive, and
that the student is reinforced by receiving assistance from the teacher and, possibly,
temporary escape from the aversive tasks (through time out).

The current contingency system in the classroom may have contributed to problem
behaviors as well. Reinforcement for expected behaviors was not accessed until the end of
the day. This schedule may not provide frequent enough reinforcement for this student.
Because the problem behaviors elicited teacher assistance, they may have been more
immediately reinforcing than access to the classroom library at the end of the day.
Therefore, modification of the current reinforcement system may also be an intervention option. Additionally, the student having an object in his hand (e.g., a book) as he entered the building may have impacted his behavior after arriving at the school. Having an object in his hand gives the student the opportunity to throw an object even before he enters the building, which, from observations, appears to have increased the student’s agitation. Had more instances of this been observed, the consultants may have been able to get a clearer picture of whether or not this had an impact on the student’s problem behaviors later in the day.

Conclusions derived from this FBA case would be strengthened had the consultants made more observations. This would have proved difficult due to low occurrences of problem behaviors. During several observation sessions, the consultants did not see a single event of inappropriate behavior. Because these behaviors were so low incidence, it was difficult for either observer to be present on the days on which they occurred. During 6 days of observation, only on one day were problem events observed. During two other observation sessions, only 1-2 non-severe episodes of noncompliance were observed. Therefore, choosing the right days to observe was difficult. Had more data been collected, the implications would be stronger. Additionally, an interview with the grandfather could have provided more insight into the problem behavior, including other possible occurrences on days that the grandfather dropped off that could have served as motivating operations.

The results of this FBA imply that a manipulation of the identified MO would be useful in developing an intervention for the problem behaviors. At the time of this report, the consultants had not yet met with the teacher to discuss intervention options. It will be
recommended, however, that a neutralizing routine be used to help calm the student before any teacher prompts or academic tasks are required of him. This should help nullify the effect of the MO on the student’s behavior, by making the tasks and prompts less aversive and, therefore, assistance and/or escape less reinforcing. Additionally, the consultants will recommend slight changes to the student’s IEP to make his goals more appropriate to his current math functioning, as well as promote other skills that will help the student succeed in the future, like social skills and functional language. Other intervention options will be discussed in this meeting as well, including teaching the student an appropriate, functional behavior (e.g., raising his hand to ask for assistance).

Limitations of this case are that the data are purely correlational, so it is possible that another event could occur on the days that grandpa drops the student off that has an effect on this student’s behavior. Additionally, no intervention or progress monitoring data have been collected to verify the accuracy of the hypothesis, although this hypothesis was confirmed by the initial observations after the teacher interview.

This practicum case demonstrates the consultants’ ability to conduct a functional behavior assessment. Additionally, it demonstrates use of a scientist-practitioner model, in that research-based interventions are being proposed, and the data were collected in a reliable manner. Collaboration with the two special education teachers and consultation in the form of the structured interview were key components of this case, because without knowledge of who dropped the student off on which days, it is possible that the consultants would never have observed the problem behaviors. This case also demonstrates the use of a behavioral model, by considering antecedents, consequences, and motivating operations
in the target students environment, and using this information to connect the assessment
to the proposed intervention.

Within a behavioral model, Functional Behavior Assessment can be useful in
identifying environmental variables that prompt and maintain behavior. Motivating
operations, such as the one identified in this FBA, are also important to consider. Despite
the lack of definite causality in this FBA, it is likely that some aspect of leaving his
grandfather impacts the student’s behavior later in the day. This implies that manipulation
of this motivating operation could help reduce problem behaviors from this student on
these days within an intervention package.
References


## Appendix A: Modified Functional Assessment Observation Form (Crone & Horner, 2002)

<table>
<thead>
<tr>
<th>Time/schedule</th>
<th>I. Behaviors</th>
<th>II. Predictors (antecedents and situational)</th>
<th>III. Actual consequences</th>
<th>IV. EO</th>
<th>Comment (if nothing happens in period, put date/initials)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00-9:25</td>
<td>Throwing Objects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent</td>
<td>Yelling/Screaming</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Compliance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Task Refusal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:25-9:35</td>
<td>Math Structured</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercise</td>
<td>Other Structured</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:35-9:40</td>
<td>Difficult Task</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathroom</td>
<td>Social Isolation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:40-10:00</td>
<td>Adult Present</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circle Time</td>
<td>Peers Present</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:40-11:25</td>
<td>Math Unstructured</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom (LA)</td>
<td>Teacher Promot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:00-1:45</td>
<td>Entering Building</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher Time (Math)</td>
<td>Attention</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pick up</td>
<td>Benignands</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assistance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time Out</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grandpa Drop Off</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Totals**

<table>
<thead>
<tr>
<th>Events</th>
<th>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td></td>
</tr>
</tbody>
</table>
Definitions for Modified Functional Assessment Observation Form

I. Behaviors
a. **Throwing Objects**: Student picks up and throws any object.
b. **Yelling/Screaming**: Student yells or screams, louder than a normal tone of voice
c. **Non-compliance**: The teacher makes a (non-academic) request of the student, and the student does not comply.
   i. **Examples**: The teacher asks the student to go to a particular table, and the student continues the activity he is doing. The teacher asks the student to line up to go to the bathroom, and the student refuses.
   ii. **Not coded as non-compliance**: The teacher asks a student to work on a math worksheet, and the student refuses (coded as task refusal).
d. **Task Refusal**: The teacher asks the student to work on a particular academic task, and the student refuses.
   i. **Examples**: The teacher tells the student that it’s time to move on to the next independent work activity, and the student continues to read his book. The teacher tells the student to read a page of a book out loud, and the student refuses.
   ii. **Not coded as task refusal**: The teacher asks the student to clean his desk, and the student refuses (coded as non-compliance).

II. Predictors
a. **Math Structured**: Any structured math activity, including teacher instructional time.
b. **Other structured**: Any structured activity for any other academic subject other than math.
c. **Difficult Task**: The task at hand is difficult for the student either because he does not have the skills to complete it or because he is having difficulty understanding how to do the assignment.
d. **Social Isolation**: The student is working by himself, without the direct presence of the teacher or any other students working with him.
e. **Adult Present**: There is an adult within 15 feet of the student.
f. **Peers Present**: There are peers within 15 feet of the student.
g. **Math Unstructured**: Any unstructured math activity, such as those activities during independent time.
h. **Other Unstructured**: Any unstructured activity for any other academic subject other than math.
i. **Teacher prompt**: the teacher verbally prompts the student to work on/complete an academic task, or makes a non-academic request for the student to do something.
j. **Entering building**: the student is being dropped off by his parent/grandparent in the morning and is walking into the building.

III. Actual Consequences
a. **Attention**: The student receives attention from the teacher or peers as a result of some behavior (not included if the attention is in the form of a reprimand).
b. **Reprimands**: The teacher scolds the student for a certain behavior, or gives him a warning.
c. **Assistance**: The student receives help on whatever task he is working on as the result of some behavior.
d. **Time out**: the student is removed from his task and made to sit in a chair behind a partition for a set amount of time. When the allotted time is up, the student returns to the activity and must complete it before moving on to the next activity.

IV. **EO**

   a. **Grandpa drops off**: The student’s grandfather gave him a ride
### Appendix B: Competing Behavior Model

**Table B1: Competing Behavior Model**

<table>
<thead>
<tr>
<th>Motivating operations</th>
<th>Antecedents</th>
<th>Behavior</th>
<th>Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grandpa Drops Student off (student leaves grandpa)</td>
<td>Teacher prompts to engage in an academic task (assigned independent work)</td>
<td><strong>Expected:</strong> work quietly at desk and complete seatwork</td>
<td>Some positive attention/praise from teachers, sometimes teachers ignore student</td>
</tr>
<tr>
<td></td>
<td>A difficult task, for example, a math task</td>
<td><strong>Actual:</strong> throws objects, yells and screams, refuses to do assigned task</td>
<td>Escape (in the form of teacher assistance with difficult tasks), negative attention (reprimands)</td>
</tr>
<tr>
<td></td>
<td><strong>Alternative:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Completing seatwork quietly</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Raising hand and asking for a break or for help</td>
<td></td>
<td>Could be praised for good behavior or nonverbal participation</td>
</tr>
</tbody>
</table>
### Appendix C: Intervention Recommendations

**Table C1: Recommended Interventions**

<table>
<thead>
<tr>
<th>Motivating Operations</th>
<th>Antecedents</th>
<th>Behaviors</th>
<th>Consequences</th>
</tr>
</thead>
</table>
| • Neutralizing routine  
  • Get rid of MO (not have grandfather drop student off) | • Review expected behaviors  
  • Change activities to more preferred activities, less difficult activities | • Teach/practice expected behaviors  
  • Change expected behavior by teaching to raise hand and ask for assistance | • Increase rewards for expected behaviors, give positive attention  
  • Decrease attention and assistance for disruptive behaviors  
  • Use classroom delayed reinforcement more frequently |