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## Further Evaluation of the PLS Program: Reduced Consultant Involvement

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**FURTHER EVALUATION OF THE PLS PROGRAM:  
REDUCED CONSULTANT INVOLVEMENT**

By

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A DISSERTATION

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Psychology

(in School Psychology)

The University of Southern Maine

August 2018

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## **FURTHER EVALUATION OF THE PLS PROGRAM:**

### **REDUCED CONSULTANT INVOLVEMENT**

By Kelly Ann Pelletier, M.S.

Dissertation Advisor: Dr. Rachel Brown

An Abstract of the Dissertation Presented

In Partial Fulfillment of the Requirements for the

Degree of Doctor of Psychology

(in School Psychology)

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This study evaluated the effects of the preschool life skills program (PLS; Hanley, Heal, Tiger, & Ingvarsson, 2007) on the acquisition of pro-social skills and reduction of interfering classroom behavior in a public special education pre-school in the Pacific Northwest. The rationale for the current study is based on the reality that consultants and trained assistants may not be a common element available to the average preschool setting. The objective of this investigation was to determine whether gains in pro-social skills and reductions in challenging behavior would occur under conditions of reduced consultant or supervisor involvement in this setting. In the original PLS research (Hanley et al., 2007) supervisor contact occurred daily. In this inquiry, contact occurred on a weekly basis for no more than two hours. Ten students were nominated for participation in this study with four being omitted due to attendance. For the six remaining students, results were mixed and varied based on the individual, with students acquiring some skills but not others. Overall students had higher levels of prosocial skill demonstration and lower levels of interfering behavior post-intervention, but it is uncertain whether this change was a result of the PLS class-wide teaching due to challenges with experimental

control. This study should be viewed as a pilot investigation that attempts to make the PLS program accessible to public school teachers in schools with less resources. Future research should reexamine this question and posit ideas to make PLS acquisition feasible in similar environments.

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## Chapter 1: Introduction

This investigation attempts to examine the effect of the Preschool Life Skills (PLS) program (Hanley, Heal, Tiger, & Ingvarsson, 2007) on the interfering and pro-social behavior of students attending a school-based preschool program for children with special needs in the Northwest United States. Participation in non-maternal care has been tied to problem behavior in young children (National Institute of Child Health and Human Development, 2003). Hanley et al. (2007) developed the PLS curriculum as a preventative approach to help young children circumvent some of the problems that may be inherent in spending less time in maternal care. Using this curriculum, educators explicitly teach students skills that have been cited by kindergarten teachers (Lin et al., 2000) as most important for successful participation in the classroom. The PLS curriculum also includes several functional communication skills that are taught as part of the instruction, typically informed by the outcomes of functional analyses (Himle, Miltenberger, Flessner, & Gatheridge, 2004). During Hanley et al.'s (2007) original research to create the PLS program, as well as replications conducted by fellow researchers (Hanley, Fahmie, & Heal, 2014; Luczynski & Hanley, 2013), daily supervisor or consultant involvement was a component of the PLS program. The current research examined whether, with reduced consultant involvement, PLS instruction resulted in decreasing problem behavior and increasing pro-social behavior.

The rationale for the current study was based on the reality that consultants and trained assistants may not be a common element available in the average preschool setting. Nonetheless, public pre-school classroom environments typically have specialists, such as occupational therapists, physical therapists, speech and language pathologists and psychologists, who work with students in sessions held outside of the

classroom. Although these specialists work with the students on a regular basis, daily consultation with the teacher and other classroom staff, unless specifically outlined in a student's individualized education program, is uncommon. Therefore, establishing the generality of the PLS program by attempting to replicate with reduced consultant or supervisor involvement could add valuable information to the current PLS research (Fahmie & Luczynski, 2018).

### **Literature Review**

During the original Hanley et al. (2007) study, baseline levels of PLS and problem behavior were obtained on students chosen by their teachers as participants. The PLS program was then implemented across four sets of skills: (a) instruction following, (b) functional communication, (c) delay tolerance, and (d) friendship. Each set of skills was introduced in a staggered fashion during typically-scheduled activities throughout the day. Skills were taught using a behavioral skills training package (Himle, Miltenberger, Flessner, & Gatheridge, 2004) that included instructions, modeling, roleplay, and feedback. Teachers were given guidance and performance feedback from on-site supervisors who held master's degrees in human development or behavior analysis. The program resulted in a four-fold increase in the targeted pro-social skills and a subsequent 74% reduction in challenging behavior. Also, teachers who participated in the program reported high levels of satisfaction with the curriculum and its effects (Hanley et al., 2007).

Following Hanley et al.'s (2007) study, research was conducted to examine the effects of the PLS program on groups of six preschoolers randomly assigned to treatment or control groups (Luczynski & Hanley, 2013). The teaching strategies in this study mirrored Hanley et al. (2007). Both within-subject and between-groups designs suggested

that the PLS curriculum, as opposed to other variables, was functionally related to improvements in targeted pro-social skills and the prevention of challenging behavior, replicating and extending Hanley's et al. (2007) findings.

Investigators also assessed the effects of teaching preschoolers to respond to their name, one of the original PLS targets, as well as whole-group bids for attention to teacher, on compliance with typical classroom instructions (Beaulieu, Hanley, & Roberson, 2012). The authors in this study used a control-group method to evaluate whether gains in compliance were a function of their treatment with a multiple treatment across participants design to evaluate the effects of teaching on compliance. Compliance increased as a function of teaching these precursor behaviors for all children in the experimental group. Also, the group design illustrated that explicit teaching of the precursor behaviors, and not the preschool experience itself, was most likely responsible for the gains in compliance.

The PLS research was then extended to two community-based Head Start classrooms to generalize findings to groups of students in a less enriched setting (Hanley, Fahmie, & Heal, 2014). Eligibility for Head Start is based on family income. Also, Head Start preschools typically have higher staff to student ratios than the center-based preschool where the original research took place. Using a multiple baseline design across classrooms and skills, researchers showed a 5-fold increase in PLS and associated reduction in problem behavior, extending the Hanley et al. (2007) findings to a more diverse group of learners.

With evidence that implementation of the PLS program was functionally related to improvements in social skills and decreases in problem behavior, as well as replications of its effectiveness across varied pre-school environments, researchers then

strove to achieve more durable outcomes regarding maintenance and generalization. The goal of the initial PLS program was to provide a protecting factor that children spending time in non-familial care could carry with them from pre-school to grade-school. During a generalization assessment, participants who had been previously taught PLS attended a new classroom with a teacher naïve to the PLS program (Luczynski, Hanley, & Rodriguez, 2014). When researchers noticed that the previously-learned skills were on a decreasing trend, they created modifications to their teaching procedures in the hopes of making PLS more robust, such as adding additional teaching sessions where the antecedents and consequences were made less predictable. The effects of the teaching modifications on the generalization assessment were initially variable overall. When the naïve teacher was informed of the PLS teaching protocol, generalization rose to acceptable levels. Three months after PLS teaching was discontinued, most skills continued to remain intact. The authors of this study discussed the importance of targeting both teacher and student behavior to encourage generalization and maintenance of PLS.

Across all of the prior PLS program studies, a consultant or supervisor had *daily* contact with the classroom teachers regarding implementation. Such daily support is not typically available in most school-based public preschool programs. The current study investigated whether selected PLS could be successfully learned in an environment with much less consultant or supervisor support. Specifically, this research sought to determine whether PLS gains, and reductions in interfering behavior, were observed among students in a five day a week, half day, special needs preschool environment with weekly consultation sessions.

## Chapter 2: Method

The current study included a systematic replication of the Hanley et al. (2007) findings with the following alterations:

1. A modified PLS package containing eight skills instead of Hanley et al.'s (2007) thirteen was used. Omitted skills were ones that previous research suggested may increase without direct teaching solely as a function of teaching other PLS skills, or were skills viewed by the current teacher as not as critical in relation to the goals for the participants. The omitted skills included: following multistep directions, saying please and thank you, and complimenting others.
2. Included skills were from Hanley et al.'s (2007) original treatment package and were organized into four skills "umbrellas" as detailed below. One subskill not included in the original treatment package was added to the "tolerance" skills umbrella: tolerating lesser-preferred items and activities. This skill was added after discussion with the teacher about challenges in her classroom related to students not getting what they wanted. The included skills were:
  - a. Compliance
    - i. respond to name
    - ii. comply with simple instructions
  - b. Requesting
    - i. gain attention
    - ii. ask for assistance
  - c. Tolerance
    - i. tolerate delay of requested items and activities
    - ii. tolerate lesser-preferred items and activities

d. Friendship

i. participate in sharing

ii. comfort others

3. A procedural integrity checklist (Appendix A) was added to provide a template for the teaching of each skill and the scoring of accurate implementation by the teacher and paraprofessionals.
4. A daily data sheet (Appendix B) was included to provide a template for the teachers and paraprofessionals to record student behavior (correct independent responding, errors of commission, and errors of omission).
5. The indirect measure of the questionnaire for determining the potential likelihood that the children would emit PLS over problem behavior utilized in Hanley's (2007) investigation was omitted due to time constraints and the goal of minimizing the data collection required by the teacher and staff.
6. Less performance feedback was provided to staff. Consultant contact occurred weekly on Thursday afternoons for at least one but no more than two hours. This lower amount of consultant involvement mirrors the amount that might typically be available in the target preschool classroom from a school psychologist or behavior specialist in the building.
7. Data were collected over a period of 12 weeks. The teacher completed baseline on all skills during week one. She then taught one PLS target per week over a period of 8 weeks. Following teaching all PLS, she waited two weeks while conducting no PLS instruction and again probed all skills on the third week as in baseline.

## Participants

**Students.** Ten children, 6 girls and 4 boys, all between the ages of 4 and 5 years, were selected to participate in the current study. Five of the children were receiving services for speech and language delays, four were identified as having a non-specified early childhood developmental delay (ECDD), and two were diagnosed with Autism. The children were enrolled in a public special needs preschool located within an elementary school in the Northwest United States and attended the afternoon session of the preschool program (i.e., 1:00 pm-3:30 pm) five days a week (Monday-Friday). All of the children attended the same half-day preschool the previous year and were familiar with the teacher and classroom procedures. Recruitment letters were sent home with all students with the request to return a signed parent permission form. Nine of the ten children's parents provided permission for participation. The parent who did not wish to have her child participate consented to have her involved in the lessons but not in the data collection. Due to the age of the students, child assent was not obtained. Six of the nine original participants attended school frequently enough to be included in the study (i.e., did not miss more than three days during any given PLS instruction week). These six participants are listed in the chart below by pseudonym.

*Table 2.1. Participant demographics.*

| Name  | Age     | Sex | Disability Type     |
|-------|---------|-----|---------------------|
| Liam  | 4 years | M   | Autism              |
| Ava   | 5 years | M   | Autism              |
| Emily | 4 years | F   | Speech and Language |
| James | 4 years | F   | ECDD                |
| Mason | 4 years | M   | ECDD                |
| Jacob | 5 years | M   | Speech and Language |

**Teaching staff.** There was one certified teacher and two paraprofessionals in the classroom with the students; therefore, the educator-to-child ratio was roughly 1:3. The



teacher had a master's degree in Early Childhood Special Education (ECSE) and Early Interventions Birth to Age Five and had taught ECSE for the past five years. One paraprofessional had worked with children with disabilities for the past 13 years while the other was new to the field and had worked with preschool children for three months prior to starting in the participating preschool classroom. Neither paraprofessional had a bachelor's degree.

### **Setting**

The classroom included a sink/wash station, cubbies for storage, hooks to hang coats and backpacks, a touch-screen computer display board, a kidney shaped table, and two rectangular tables, along with bookshelves with books and children's toys/activities in bins. The classroom included both tiled and carpeted flooring. A toilet and sink for student use were adjacent to the classroom through a side door. The teacher and two paraprofessionals or substitutes were present for all research sessions except one week when the teacher was out sick. The primary researcher was present for one research session per week. An additional research associate was present for half of the sessions in order to collect interobserver agreement (IOA) data.

### **Materials**

Materials included toys (e.g., farm set, kitchen set, books, paint, crayons, paper) and instructional items (e.g., pencils, tables, chairs) that were readily available in the preschool classroom. These materials were used during PLS lessons for each of the selected skills. A procedural integrity checklist to score teacher behavior (Appendix A) and daily data sheet to record student behavior (Appendix B) were used.

## Procedures

**Dependent measures.** The dependent measures were teacher records of PLS acquisition and student problem behavior (errors of commission).

**Interobserver agreement.** A procedural integrity tool was used to measure teacher performance with protocol implementation (Appendix A) on the PLS target skill of the week. IOA scores were calculated for the lead teacher's procedural integrity with the treatment protocol. During each consultation session the researcher recorded whether all steps in the PLS were completed accurately. A second trained observer simultaneously, but independently, used the procedural integrity checklist to score teacher implementation of the program during 62.5% of initial lessons. An agreement was defined as identically scoring whether teacher behavior occurred (Y/N) on the checklist during each shared observation. IOA was calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100%. Total IOA was 96% with a range of 83-100% agreement. Review of the PLS observation forms showed that procedural integrity ranged from 50-100% with an average of 91.6%. Notably, the day integrity with the teaching protocol was observed at 50% was when the lead teacher was out sick and one of the classroom paraprofessionals took over while a substitute teacher was in the room. Otherwise, the lead teacher implemented the protocol with near 100% accuracy during consultant observations. The exception was one occurrence when she only roleplayed the target skill with the paraprofessionals and not with the students during circle time; in this session the procedural integrity score was 83%.

**Experimental design.** A single group A/B case study design was used for this inquiry into the feasibility of reducing consultant involvement with PLS program

implementation. This design was chosen despite its limitations (Campbell & Stanley, 1963) in an effort to make PLS practical for existing classroom staff to implement by decreasing data collection demands. This quasi-experimental inquiry is a pilot for future public-school research in social-emotional skill development.

**Baseline.** Baseline data collection was conducted during ongoing instruction as usual in the preschool classroom. Both reactive and pro-active student behavior management strategies used during baseline were those in place at this preschool prior to the current investigation. One method included taking a “seat away,” which involved a time out from the ongoing activity where the child could see his or her peers but could not participate for a small amount of time. Another method included assisting students to comply with the teacher directions using least to most prompting strategies. During baseline, data were collected for all students in the preschool classroom for both PLS and problem behavior by the teacher and paraprofessionals. At least three evocative situations were programmed for each student. Programing evocative situations involved contriving conditions that would evoke a desired skill, such as leaving a tight lid on a container holding a desired item, so a student would be more likely to use the help target skill or make an error by getting frustrated or walking away. Errors of commission (e.g., aggression, vocal or motor disruption) and omission (e.g., no response) as well as correct independent responding were recorded for each situation. A sample data sheet is shown in Appendix B. Baseline observations were conducted until stable performance was observed for most students or until it was necessary to move on due to the time constraints of the school year calendar. Baseline data were collected before students had received instruction on any PLS targets.

**Staff training.** The primary researcher trained the teacher and paraprofessionals

to teach the PLS lessons. This involved 2, 1-hour trainings focused on the four teaching components of the PLS program: rationale, modeling, role play, and feedback. One training occurred with the teacher outside of school hours and one with the paraprofessional while the teacher remained with the students. This training was primarily didactic in nature but also involved modeling how to set up evocative classroom situations in different classroom environments and practicing with instructor feedback. All three staff were also given a copy of sample PLS lessons (Appendix C).

The teacher and paraprofessionals were instructed on how to use incidental teaching of the PLS skills during five different types of evocative classroom situations: (a) circle time, (b) meals, (c) centers, (d) free choice, and (e) transitions, each defined as follows:

- a) During circle time, children sat on the rug in the front of the room and received group instruction on various topics, for example, calendar skills from the lead teacher.
- b) Meals were times when all students sat down to eat a snack together.
- c) Centers were times when students would move from table to table to participate in various teacher-led activities such as painting with the color of the week or practicing prepositions with toys such as a farm set. Each center was led by the teacher or paraprofessional.
- d) Free time was when the children were able to choose something to play with on their own and staff assisted with play and friendship skills as needed.
- e) Transitions were times when students moved together from one activity to the next such as from a painting station to wash their hands at the sink.

**PLS lesson implementation.** One PLS target skill was introduced at a time, with

each PLS first being introduced during the class circle time activity which occurred at the start of each afternoon session. One PLS skill was taught per week. For any given week the same skill was taught each day during circle time, and the classroom-wide incidental teaching focused on that specific skill during the remainder of that day's lesson. As this was a class-wide intervention, all children participated in this part of the PLS instruction regardless of their performance in baseline. The certified lead classroom teacher conducted all PLS lessons except for one which was conducted by the more experienced paraprofessional when the teacher was out sick. Each PLS lesson included behavioral skills training techniques. First, the lead teacher described the specific PLS target and why it was important. The teacher then modeled the skill with the assistance of a paraprofessional. Each child then practiced the skill with the teacher and the teacher provided response-specific verbal praise and a sticker on a classroom-wide PLS chart. If a student did not perform the target skill, or performed the target skill incorrectly, the teacher described the skill again, and provided one more practice opportunity during the circle time. At least three opportunities to practice the skill were then provided during daily activities (e.g., meals, transitions, free play) for each student each day.

Data were collected on a probe basis, with the teacher and paraprofessionals attempting to record at least one data point per student per day for the target skill of the week. The correction procedure involved immediately arranging the same evocative situation and providing a full model prompt until the child performed the target skill or the educator was required to attend to another student. The student who was not given permission to participate in the study continued to receive class-wide instruction and was also given a sticker on the class-wide chart in addition to response-specific praise when she was observed exhibiting a PLS, but no data were recorded about her performance.

After each week (e.g., 5 school days) of instruction of a PLS lesson, the teacher moved on to introducing the next skill. All skills were taught in the order specified above. Daily data were not collected on previously taught PLS target skills, but if students exhibited a target skill from a previous week they were provided with verbal reinforcement and intermittent tangible reinforcement (stickers). If a participant missed three or more days of school during a week, that student's data were omitted for that PLS skill. If less than three data points were able to be collected during baseline or more than three weeks of PLS instruction were missed due to attendance, then the student was withdrawn from the study.

**Consultation.** The pre-school teacher received at least one, and no more than two, hours of weekly consultant contact. This contact happened on Thursday afternoons between 1:00 pm and 3:00 pm and involved observation, data collection and a brief meeting with the lead classroom teacher to review data and teaching procedures as needed.

**Maintenance.** This phase happened two weeks following the last PLS target teaching week was completed (e.g., comforting). Maintenance data collection procedures were the same as in baseline with no teaching of the skills and no stickers or other consequences programmed for correct responding. All study procedures were reviewed and approved by a university Institutional Review Board (IRB).

### Chapter 3: Results

Results were evaluated using a case study (A/B) design with student PLS as dependent variables and the teacher-implemented PLS instructional package as the independent variable. Student problem behavior and errors of commission were also examined in baseline, during PLS class-wide teaching, and two weeks post class-wide teaching. It was anticipated that the addition of instruction in PLS would result in increases in targeted pro-social behavior and decreases in interfering behavior even with less consultant involvement than in prior studies. During class-wide teaching a total of 409 data points were collected with an average of 51 data points per week and a range of 31-134. The highest number of data points were collected during the week when the PLS target skill of following instructions was taught (134). The fewest number of data points were collected during the week when the skill of comforting was taught (31). As mentioned earlier, the teacher and paraprofessionals were asked to record at least one data point per student per day during the treatment phase for a total of five per week. The results showed that this goal was exceeded, and on average, they recorded 11 data points per student per day, dependent upon student absences.

Figure 3.1 shows the baseline percentage of correct independent responding across PLS skills for the six participating students in the top panel and the maintenance level of correct responding two weeks post PLS class-wide teaching on the bottom panel. Overall, the participants performed PLS correctly and independently to a criterion of at least 80% during probed opportunities only 44% of the time in baseline, but this increased to 73% of the time during maintenance probes. Although the classroom data from baseline to maintenance suggest a significant change in acquisition of PLS skills

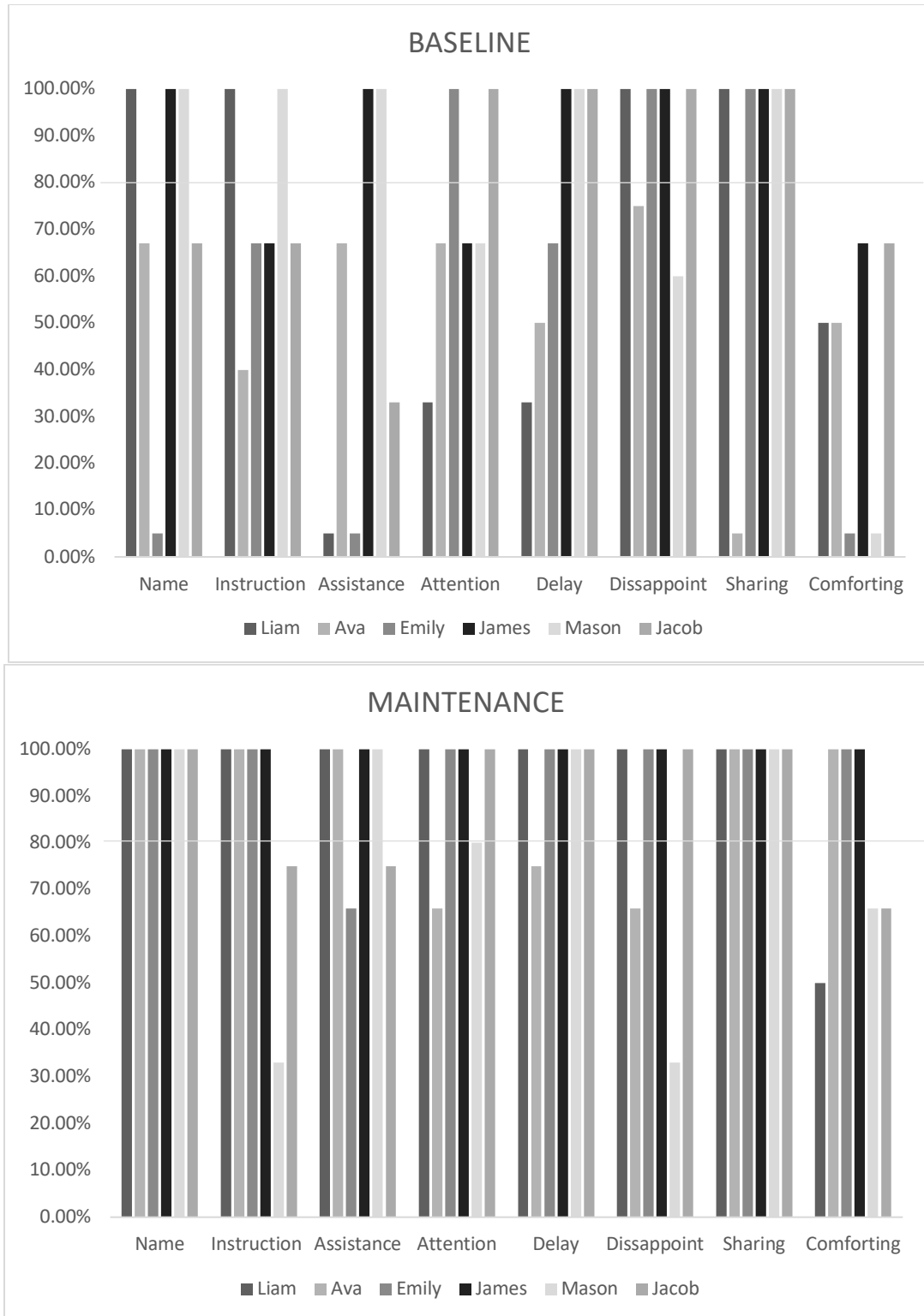


Figure 3.1



across the 12 weeks of this inquiry, whether this increase was related to PLS instruction is difficult to determine due to the case-study design.

Figures 3.2- 3.8 show the data for each PLS taught across participants. For each target PLS, the data are displayed by student across baseline (BSL), teaching (PLS), and maintenance (MNT) phases.

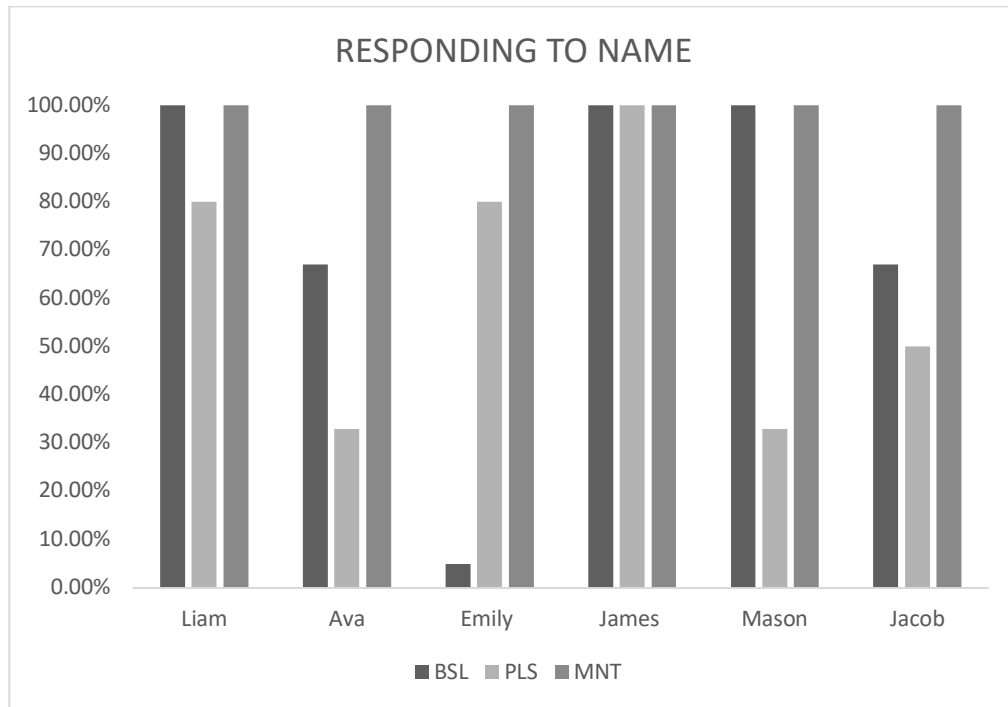


Figure 3.2

**Responding to name.** In Figure 3.2 the data for the skill of responding to name are displayed. Responding to name was the first skill taught following baseline. This skill required the student to respond to his or her name by looking at the teacher or paraprofessional and saying “yes” or an equivalent acknowledging statement.

Liam exhibited the skill in 100% of probed opportunities during baseline and continued to display a high level of this skill, responding to his name 80-100% of the time. Ava exhibited this skill 67% of the time in baseline, but interestingly, during probed opportunities during PLS teaching her skill level fell to 30%. During the maintenance

phase, she responded to her name 100% of probed opportunities. Emily did not respond to her name by looking at her teacher and acknowledging her vocally in baseline<sup>1</sup>. During PLS instruction, Emily's skill at responding to name rose to 80%, and during probed opportunities in maintenance she responded to her name 100% of the time. James had this skill in his repertoire 100% of the time during baseline and continued to exhibit the skill whenever his name was called during PLS and maintenance phases. Mason also seemed to have this skill in baseline, responding to his name in 100% of probed opportunities, but during the PLS phase this skill dropped to 30%. The teacher noted that Mason said, "no way!" in response to her calling his name during this phase, and he was noted to intentionally look away during her observations. Nonetheless, during the maintenance phase this skill returned to 100% for him. During baseline, Jacob exhibited this skill 67% of the time. This skill decreased for Jacob during teaching, but then jumped to 100% of probed opportunities during the maintenance phase. Emily was the only student who exhibited a significant need for instruction in the skill at baseline, but of the students who had lower (below 80%) levels of this PLS in baseline, all showed the skill during 100% of probed opportunities during maintenance (i.e., Ava, Emily and Jacob).

**Following instructions.** Figure 3.3 depicts participant data from observations of the PLS skill of following a simple instruction, which was taught in the second week of treatment. Following a simple instruction required students to stop what they were doing in order to attend to the teacher and follow his or her direction. Examples of simple instructions included one step directions such as "hang up your coat," "push in your chair," "throw this away" and had to be instructions that students had the prerequisite skills to complete.

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<sup>1</sup> In order to differentiate data from students who were absent, those students who demonstrated zero occurrences of the target behavior are displayed showing 5%.

Again, Liam seemed to already have this skill in his repertoire, complying with simple instructions in 100% of probed opportunities across all phases. Ava responded to a simple instruction in 40% of opportunities during baseline probes. During treatment, simple instruction-following rose to 60% for Ava and climbed to 100% during maintenance phases. Emily responded to simple instructions 67% of the time in baseline, this rose to 100% of the time in treatment and was maintained. Similarly, James also responded correctly to simple instructions 67% of the time in baseline. During probed opportunities in treatment this skill rose to 100% for him and was maintained at that level. Mason was another participant who seemed to have the skill of responding to simple instructions in baseline, but it dropped to 40% during treatment probes and stayed low during maintenance. Jacob made slight gains from baseline to maintenance on this skill (60-75%) but his data stayed relatively stable overall. Ava, Emily and James seemed to benefit most from the teaching of this skill.

**Asking for assistance.** Figure 3.4 shows data from instruction about the skill of asking for assistance. This was the skill taught on the third week of instruction. During the teaching of this skill students were taught to ask for help with a challenging task such as opening a tight bottle of glue. Other examples of contrived situations that might trigger a student to ask for help included asking a student to put on their coat with one of the arms inside out or giving a participant a new paint set that was challenging to open.

Liam did not exhibit this skill during baseline probes. During the teaching phase he asked for help with challenging tasks during 80% of probed opportunities, and this rose to 100% during the maintenance phase. Ava asked for assistance only 67% of the time in baseline. This rose to 100% of probed opportunities during teaching and was maintained. Emily did not exhibit this skill during baseline probes. During treatment

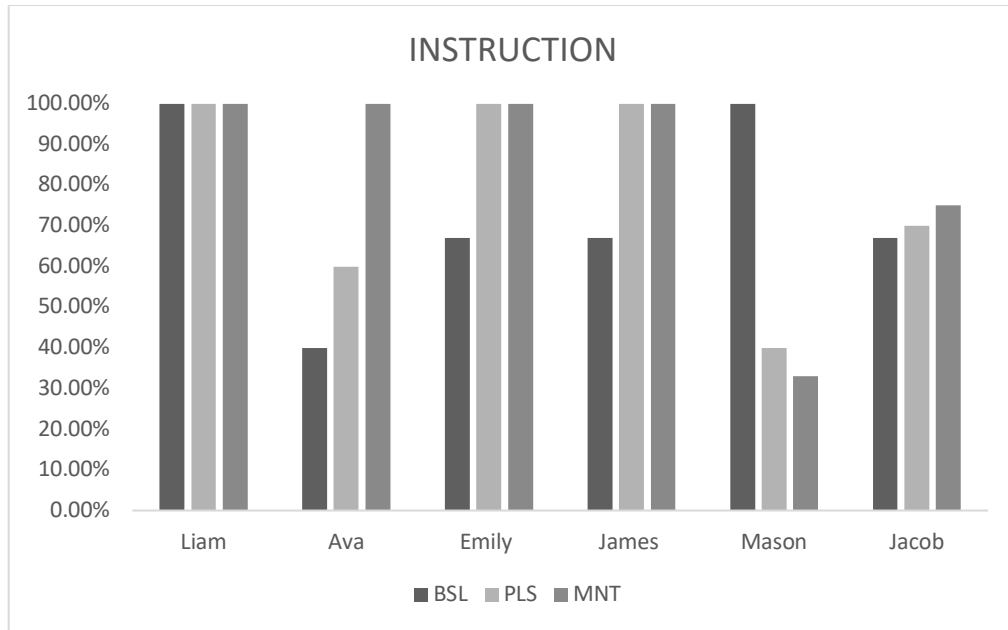


Figure 3.3

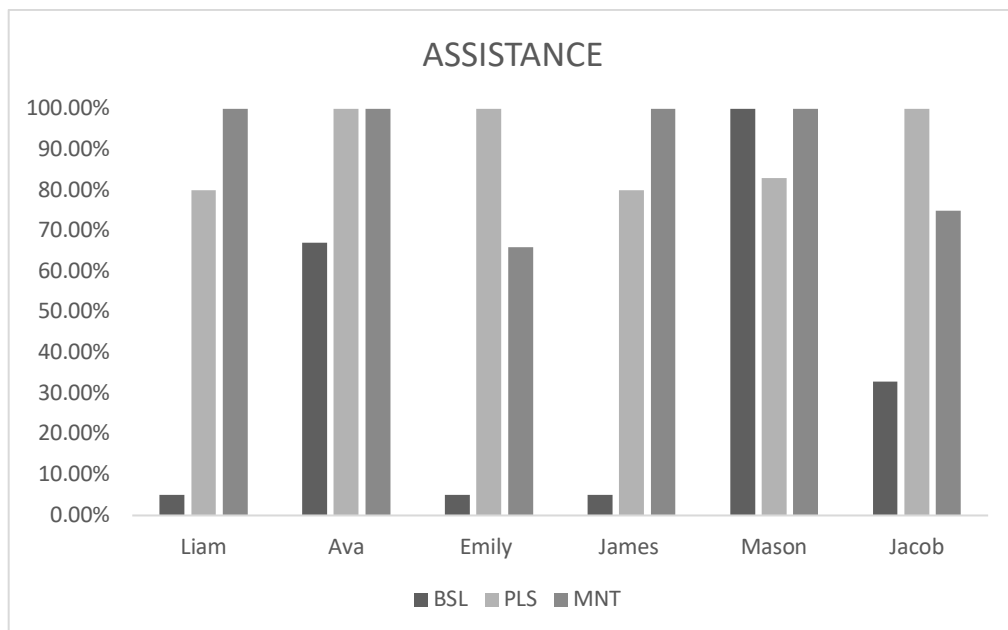


Figure 3.4

probes she asked for help when needed 100% of the time. This skill fell for her to 66% during the maintenance phase, still a marked improvement from baseline. James did not ask for help when evocative situations were probed during baseline. During the teaching

phase this skill rose to 80% for him and was maintained. Mason seemed to have this skill in baseline, responding to probed opportunities correctly 100% of the time. This skill dropped to 83% during the instructional week but later rebounded. Jacob exhibited this skill during 33% of probed opportunities in baseline. His performance with this skill increased to 100% of opportunities in training and then dropped to 75% during maintenance probes. Five out of six of the students asked for help less than 80% of the time in baseline, with three of those students not exhibiting this skill at all during that phase. During the teaching phase all the students had increased their proficiency with this skill to at least 80% or higher with four out of six sustaining that level into the maintenance phase.

**Asking for attention.** Figure 3.5 depicts the skill of asking for attention. During instruction of this skill, students were taught to say "excuse me" to gain attention when a staff member was busy. They were taught to tap a teacher on the arm or raise their hand and say excuse me prior to interrupting whatever the teacher or paraprofessional was doing. One thing that staff mentioned to the experimenter during this week was that students would sometimes gain attention appropriately but then have nothing to ask or discuss with the teacher. This could be remedied by including explicit instruction into why you might want to gain teacher attention. Specifically, the students could be taught to say excuse me only when they needed or wanted something from the teacher with multiple examples and non-examples of questions or comments provided. The staff did not provide stickers to those students who gained attention appropriately but then had nothing to say, explaining that they should come back when they remembered what they wanted.

Liam exhibited this skill 30% of the time in baseline probes. This rose to 80% during treatment and was maintained. Ava had a baseline performance level of 67%. This skill rose to 100% for her during treatment and was maintained. Emily seemed to have this skill already during baseline. Her performance dropped slightly during the instructional week to 80%, but then rose to 100% of probed opportunities during the maintenance phase. James showed this skill in 67% of probed opportunities during baseline. This rose to 80% during the treatment phase for him, and he exhibited this skill during 100% of probed opportunities in maintenance. Mason's level of this skill was 67% during baseline. He was able to gain attention during 83% of probed opportunities during training, and this was maintained at 80%. Jacob had this skill during baseline probes and continued to exhibit the skill for the duration of the study. All students exhibited this skill 80% or more of the time in maintenance probes, whereas only two out of six were able to do that in baseline.

**Tolerating a delay.** Figure 3.6 shows the skill of tolerating a delay. During this week, students were taught to wait for something they wanted for 30 seconds. Students were also taught a mediating statement as in Hanley et al. (2007): "When I wait quietly, I get what I want." This statement served as a mediating behavior (Toner & Smith, 1977) to bridge the time until they were provided access to the desired item or activity. Liam waited appropriately for a desired item or activity in 30% of probed baseline opportunities. During teaching, he was able to wait in 80% of opportunities. He tolerated a delay in 100% of probed opportunities during the maintenance phase. Ava tolerated a delay in 50% of baseline opportunities. She was able to wait during 100% of probed opportunities in treatment but this dropped to 75% during maintenance probes. Emily

waited for a preferred item 67% of the time in baseline. This rose to 100% during teaching and was maintained at that level. This was a skill that James seemed to already

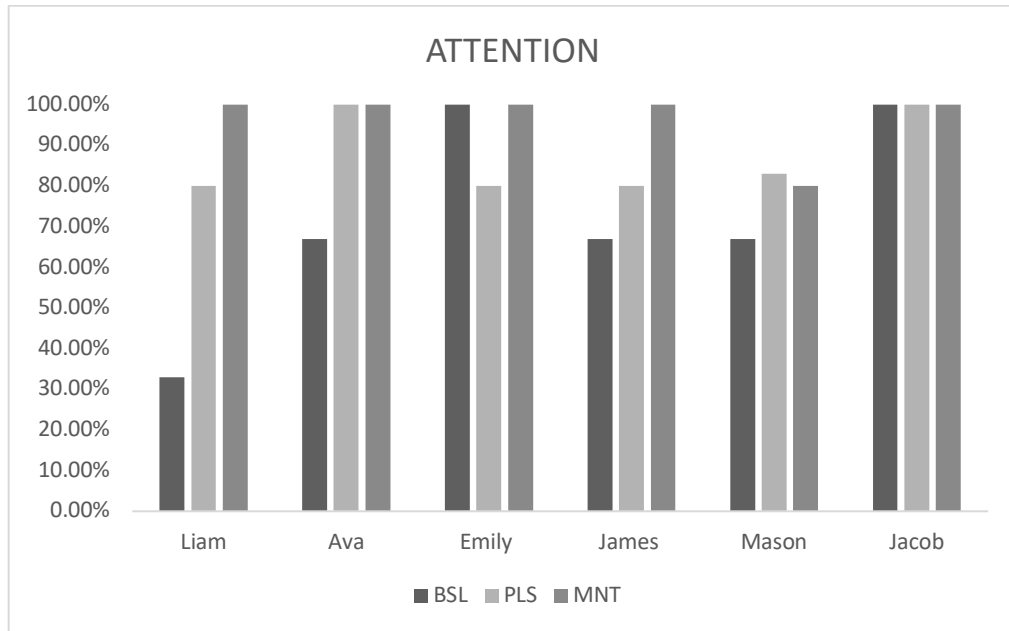


Figure 3.5

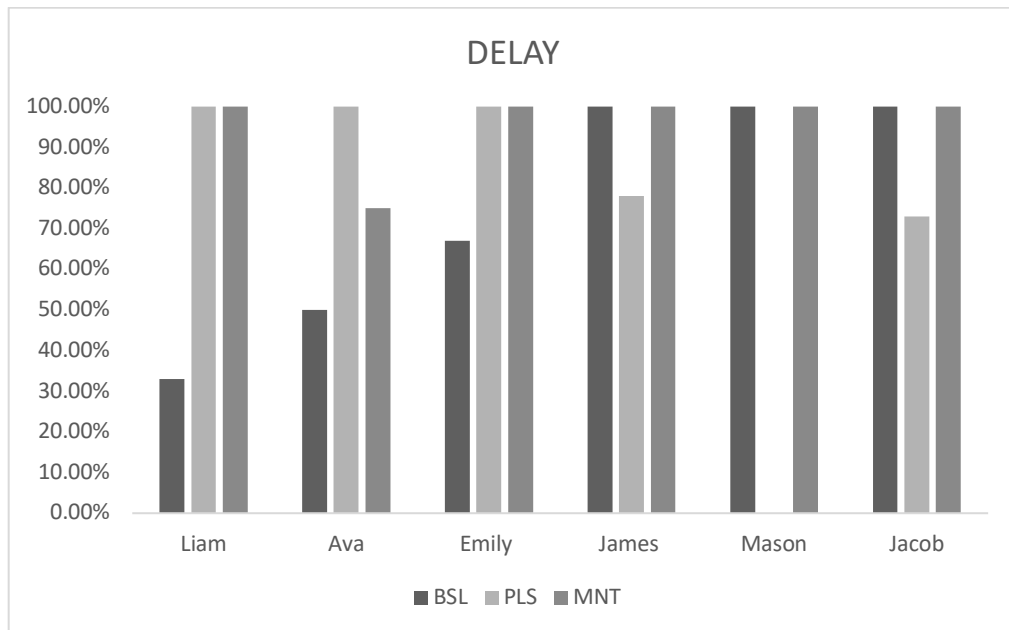


Figure 3.6

have during baseline probes, as he waited appropriately in 100% of opportunities. This skill fell for him during teaching to 80%, but then was maintained at the original baseline level. Mason also exhibited this skill 100% of probed opportunities in baseline. He was absent for the teaching week but continued to show this skill at a high level during maintenance probes. Jacob was another participant who was able to appropriately wait for what he wanted during baseline probes. This skill dropped a bit for him during the teaching phase to 73% but rebounded during the maintenance week. Half of the students were unable to display this skill at high levels (80% or better) during baseline. Of those students who were not able to wait during baseline probes, all saw their ability to tolerate a delay rise to 100% of opportunities during the teaching phase. During the maintenance phase all of the students seemed to have this skill solidly in their repertoires with five out of six tolerating a delay in 100% of probed opportunities.

**Disappointment.** Figure 3.7 exhibits the skill of tolerating disappointment. Displaying of this skill required students to maintain appropriate classroom behavior and choose another activity or item when their first choice was found to be unavailable, such as access to their favorite color paint or a toy they hoped to play with. This was a skill that was added to the original PLS targets based on information from the students' teacher.



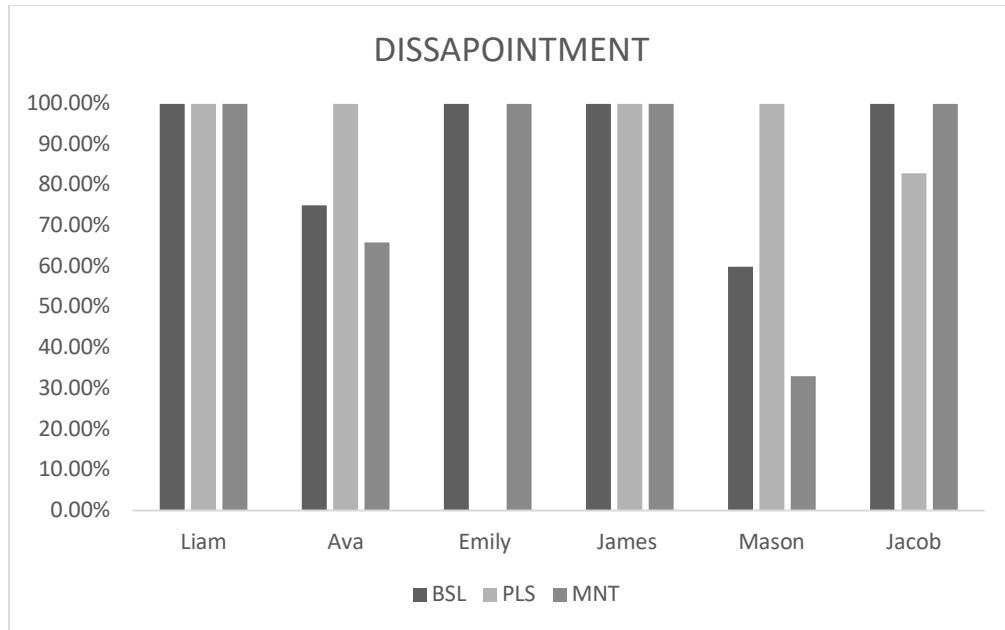


Figure 3.7

Despite the teacher's recommendation to add this instruction, four out of six of the students seemed to already have this skill in their repertoire during baseline. Liam, James and Jacob displayed this skill at high levels (83% or above) for the duration of this inquiry. Emily performed high in baseline and maintenance but was not present during the week where this skill was taught. Ava exhibited this skill in 75% of probed opportunities in baseline. This rose to 100% during teaching, and then fell to 66% during maintenance. Similarly, Mason exhibited this skill 60% of the time in baseline. That rose to 100% for him during teaching, and then fell to 33% during the maintenance phase.

**Sharing.** Figure 3.8 shows the skill of sharing. Five out of six of the participating students were able to share 100% of the time during baseline probes. The remaining student, Ava, did not share during baseline probes. This skill rose to 83% for her during teaching and was maintained. James and Jacob were not present for the week sharing was taught.

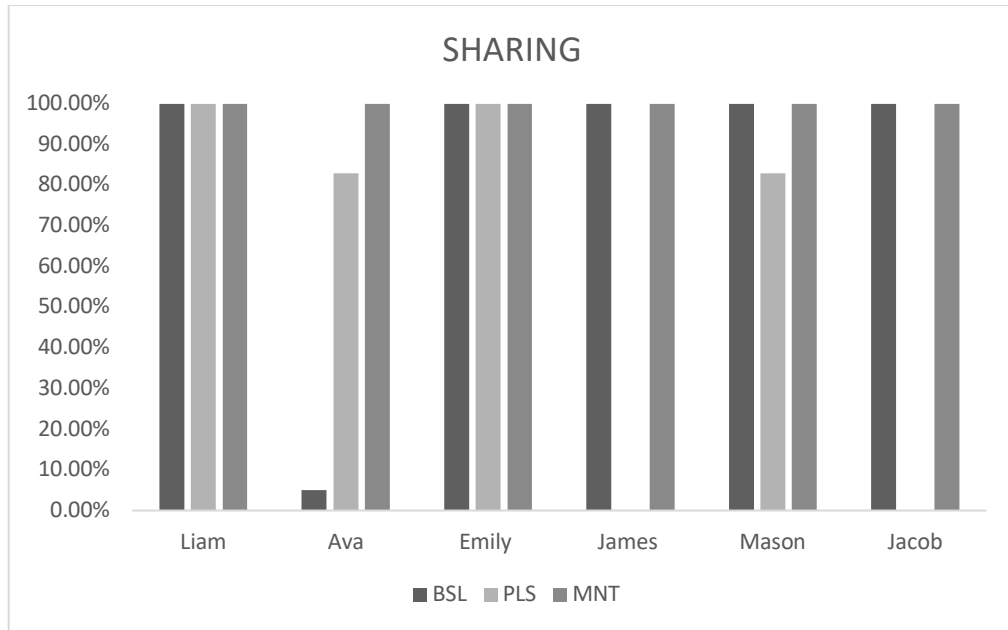


Figure 3.8

**Comforting others.** Figure 3.9 depicts the skill of comforting others. This was the last skill taught in this PLS series. This skill required the students to ask classmates if they were okay or needed anything when they seemed sad or hurt.

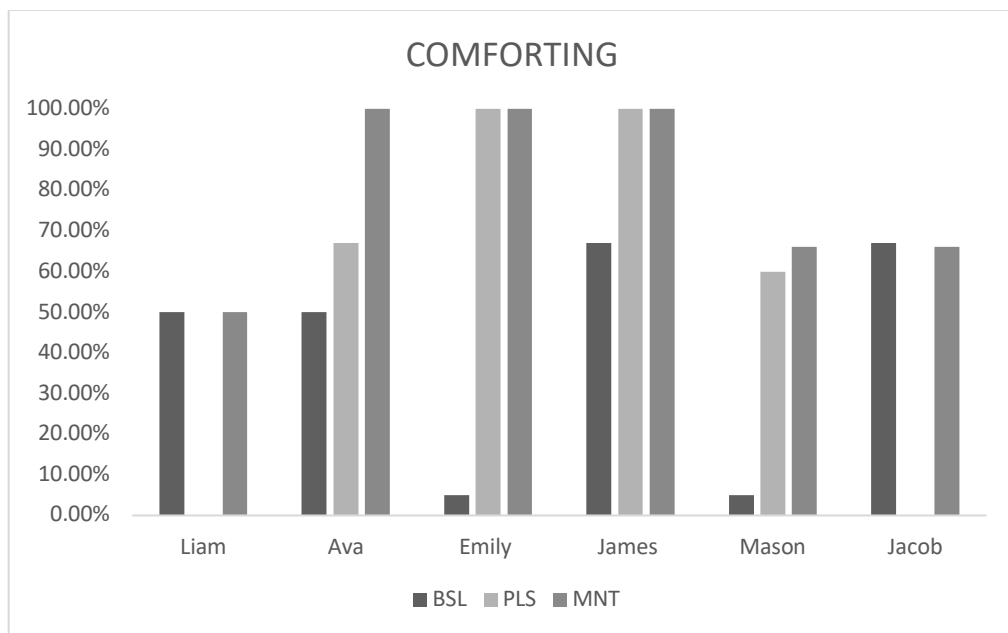


Figure 3.9

Liam and Jacob were unfortunately not present for this instructional week; however, their baseline performance looks similar to their maintenance performance with Liam staying at 50% and Jacob around 67% successful with this skill. Jacob and Liam's absence that week provide an interesting control when their comforting data is compared to their peers. Ava comforted others who seemed upset during 50% of probed opportunities in baseline. This skill rose to 67% during the teaching phase for her, and she comforted others in distress 100% of the time during maintenance probes. Emily did not show this skill in baseline but showed it 100% of probed opportunities during teaching and maintenance weeks. James exhibited this skill 67% of probed opportunities in baseline and showed it 100% of the time during teaching and maintenance probes. Mason did not show this skill in baseline and showed it around 60% of the time during teaching and maintenance.

### **Error Analysis**

Figures 3.10-3.15 show errors of commission vs. omission in baseline and during the maintenance phase, as well as total errors over probed opportunities across both phases for each student. For five out of six students, errors were markedly reduced in maintenance as compared to baseline. Additionally, the percentages of errors of commission (e.g., problem behaviors) dropped from baseline to maintenance.

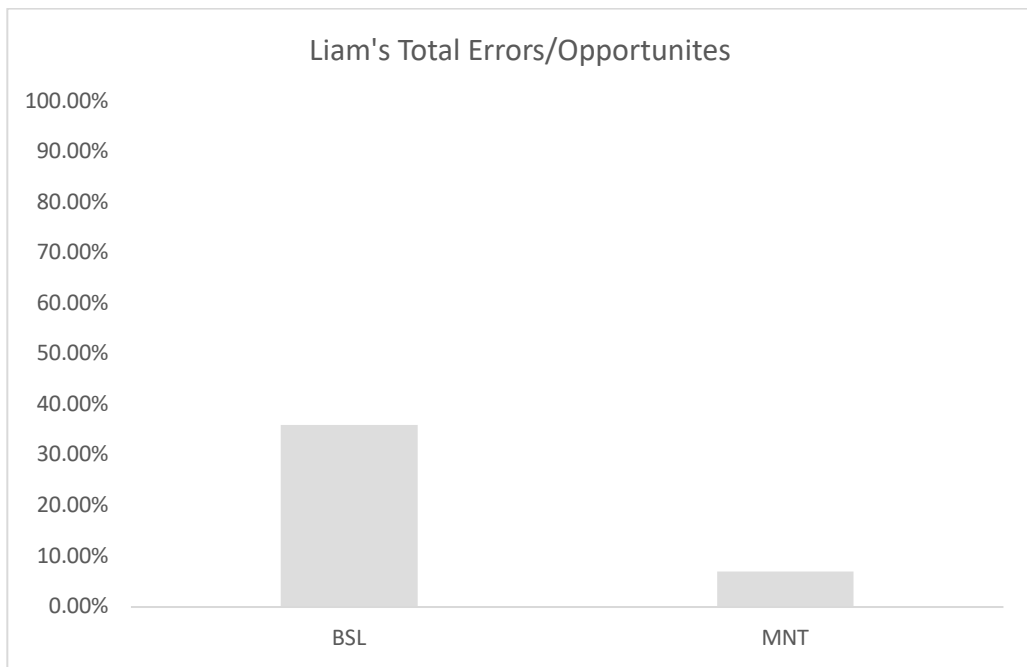
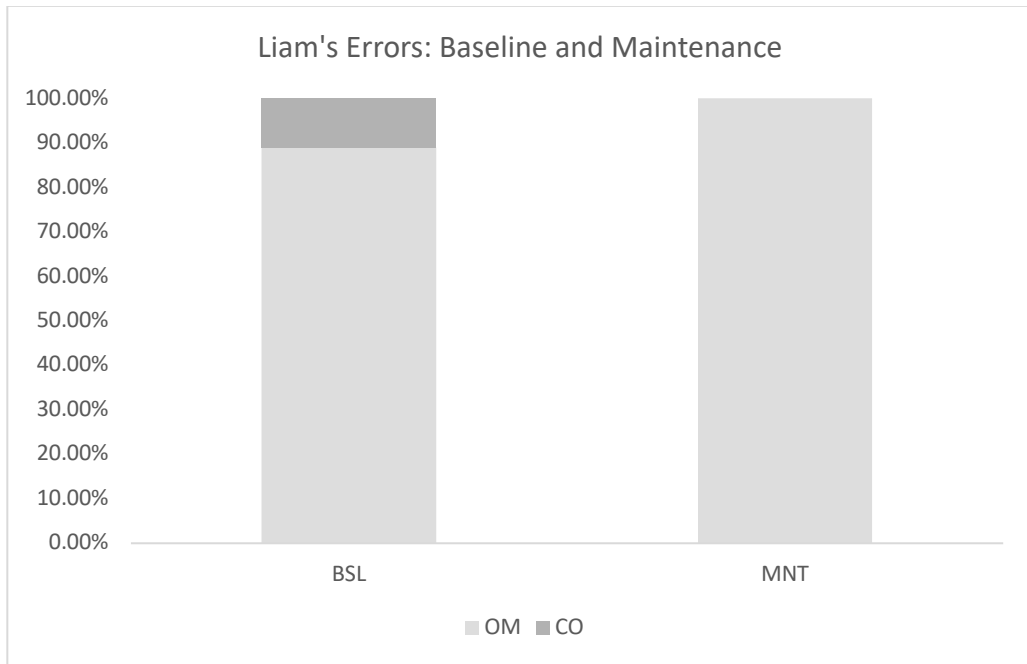


Figure 3.10

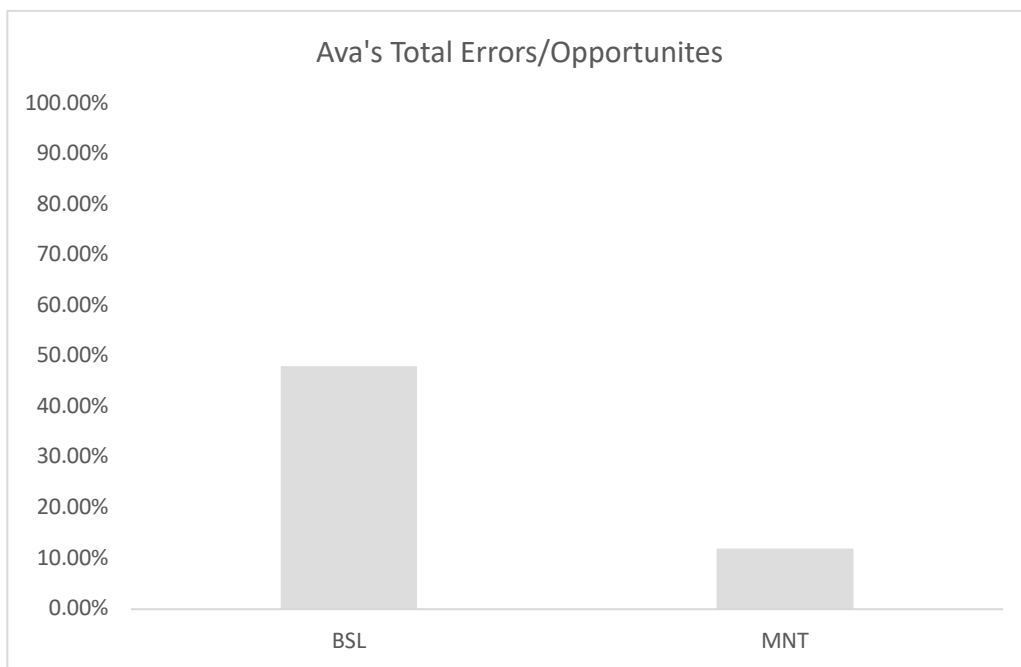
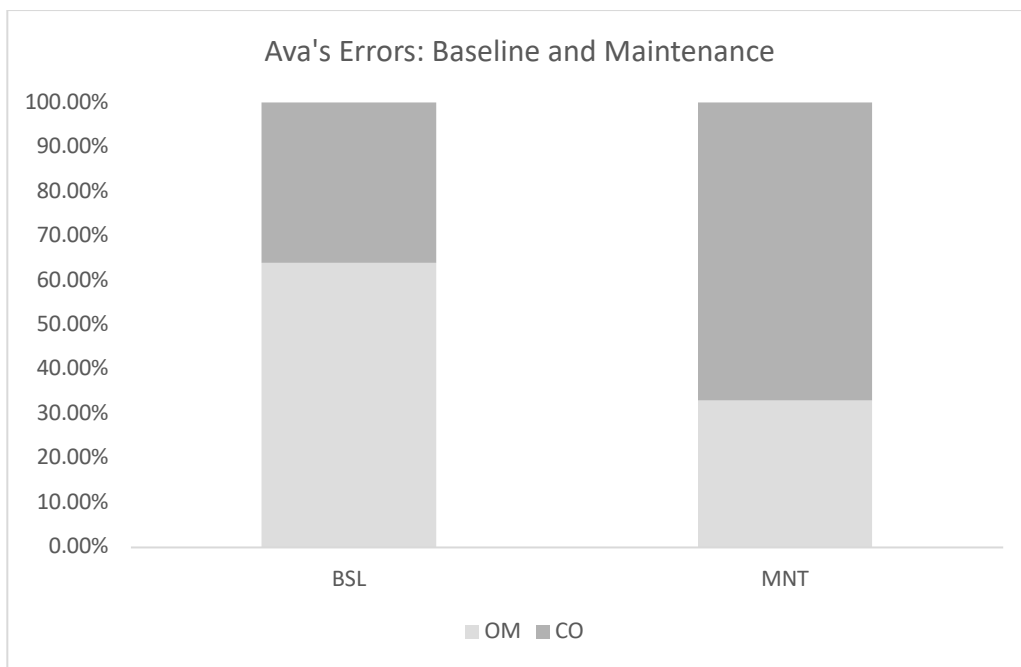


Figure 3.11

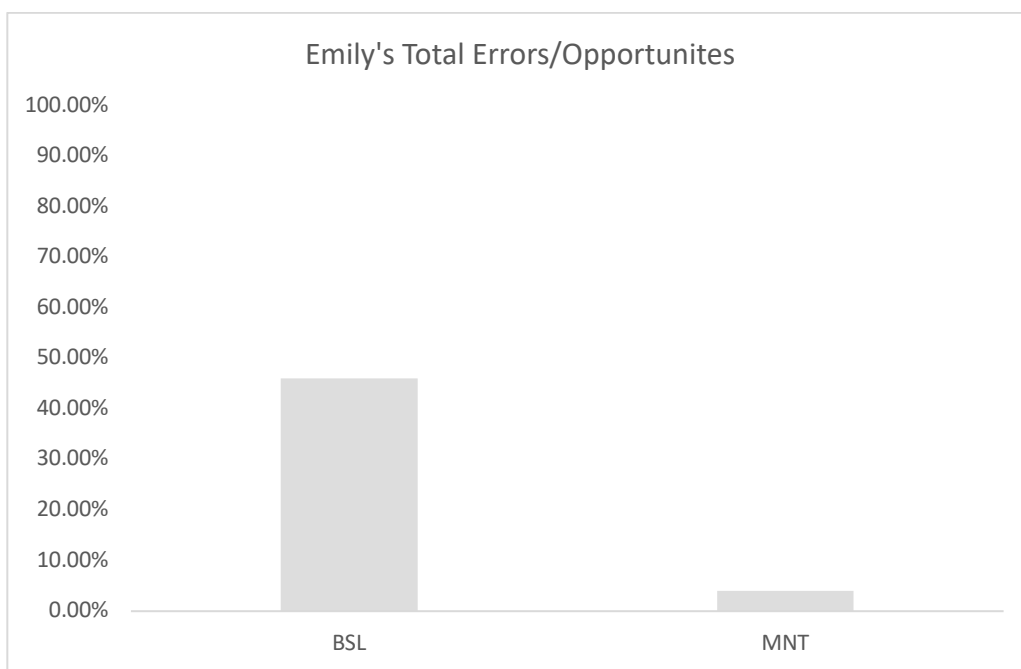
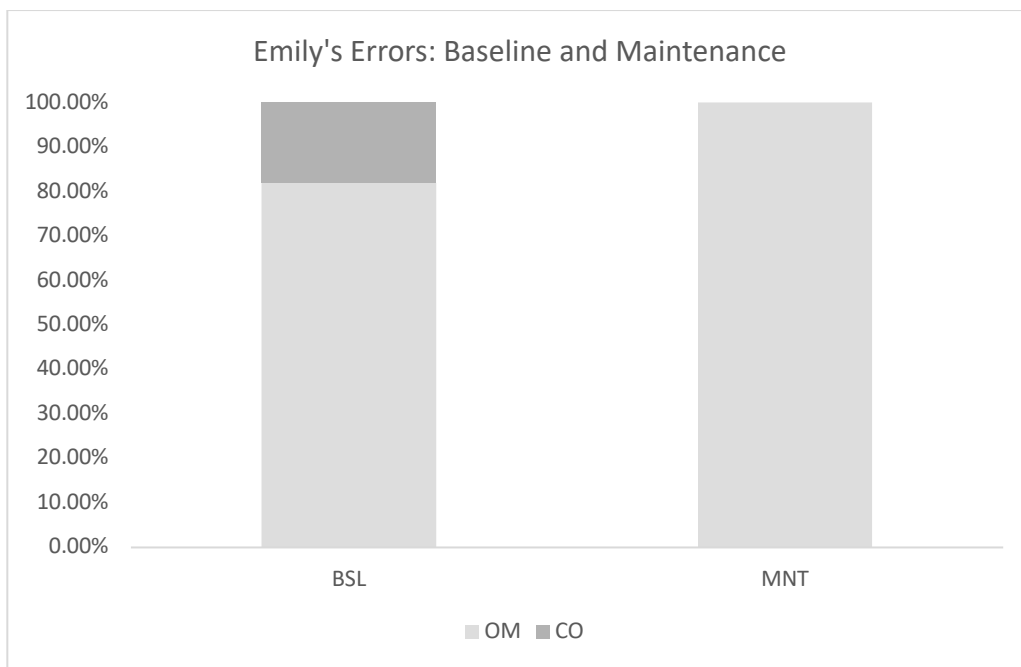


Figure 3.12

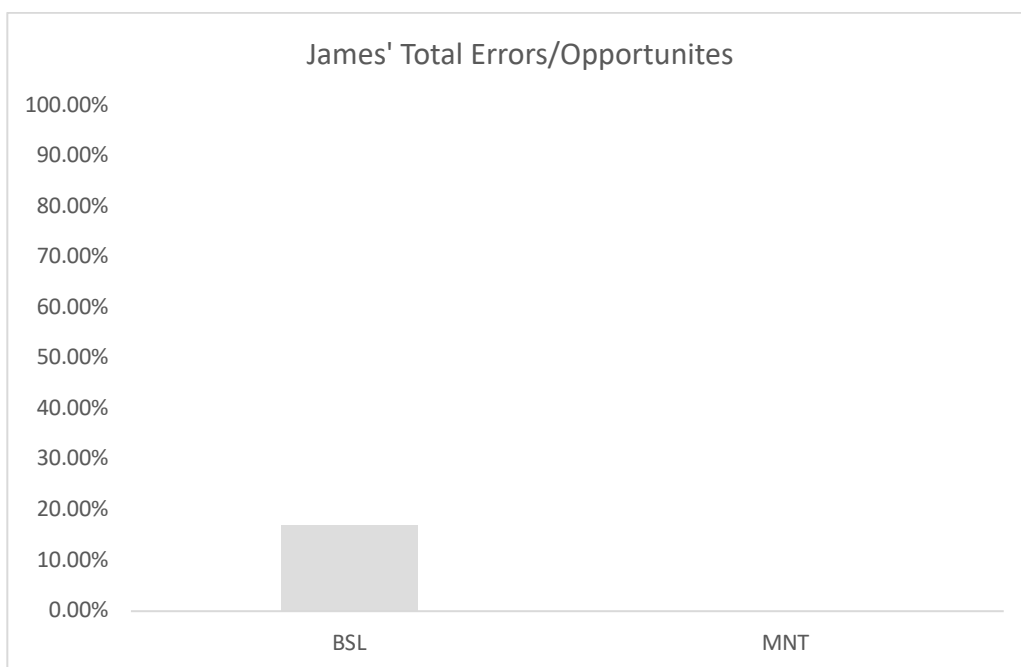
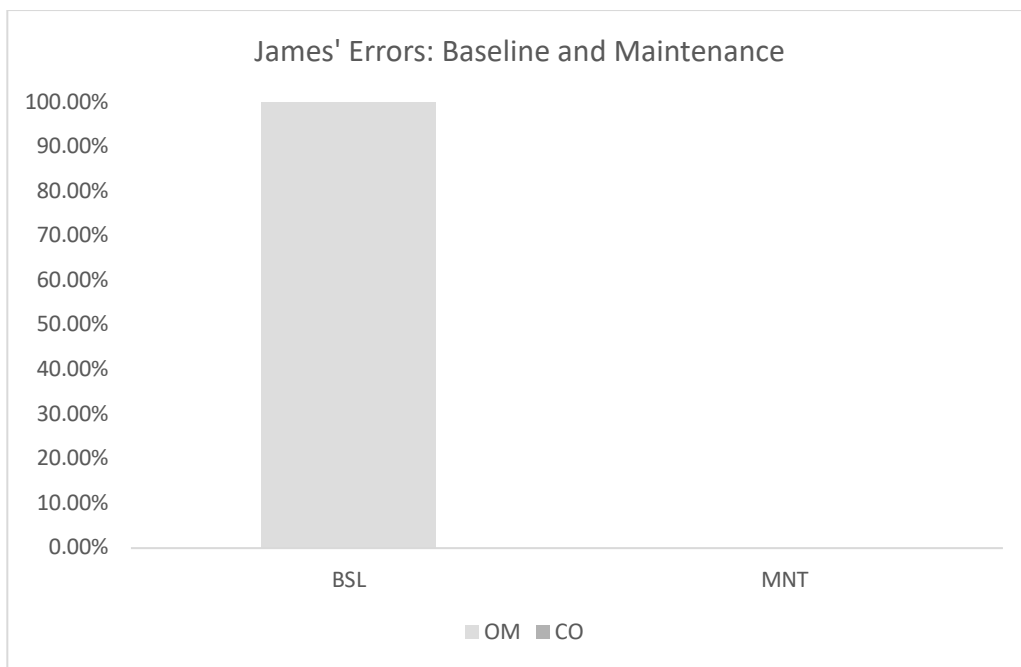


Figure 3.13



Figure 3.14



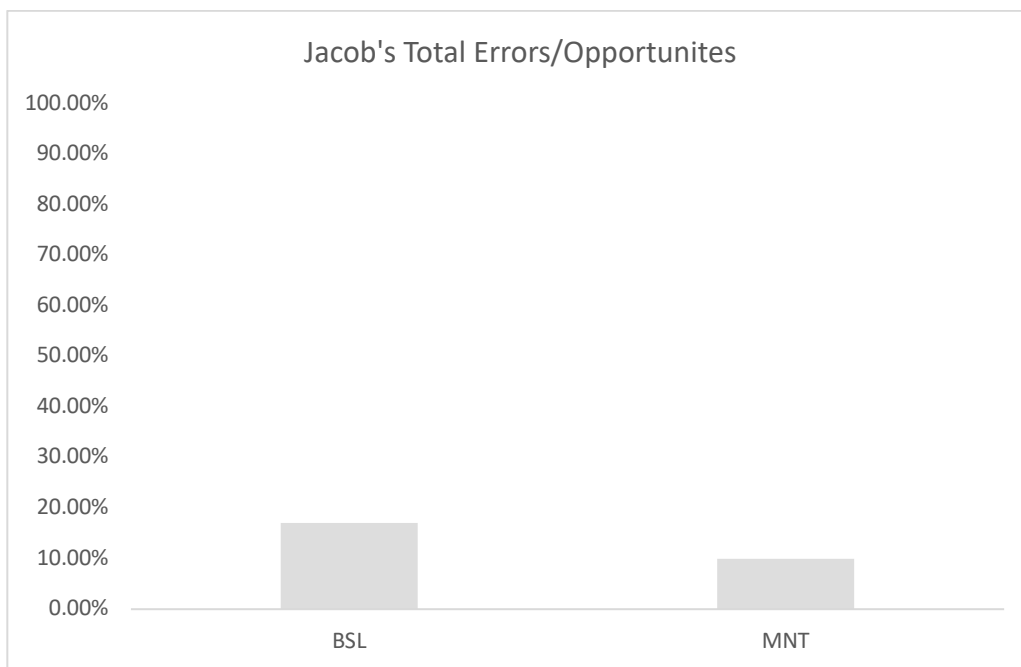
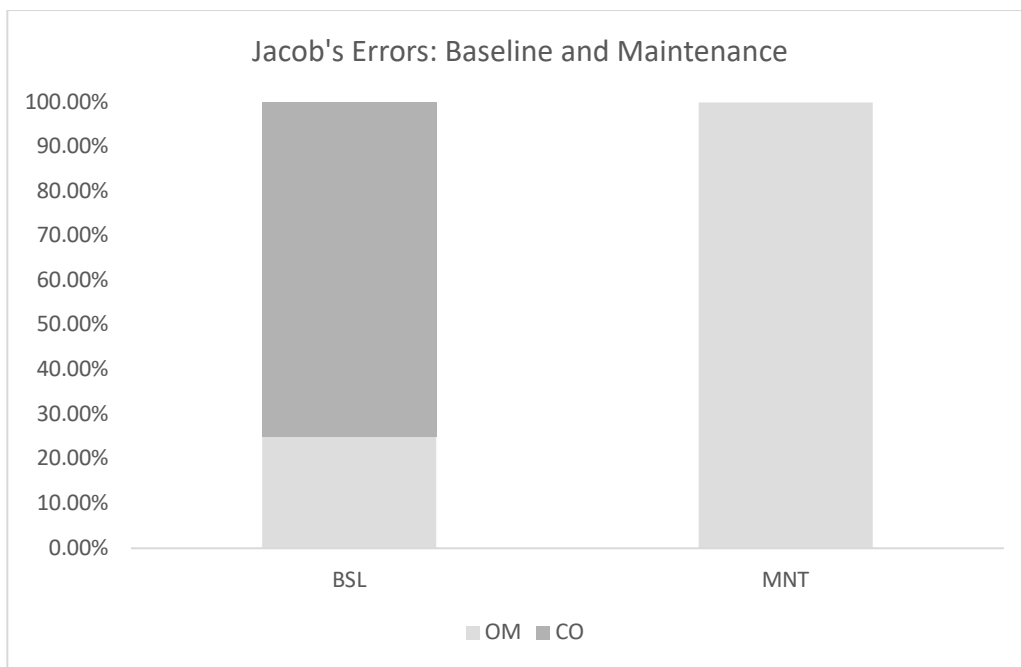


Figure 3.15

## Chapter 4: Discussion

The objective of the current study was to attempt to utilize Hanley's (2007) PLS program to teach pro-social skills and improve the behavior of students in a public pre-school setting with less supervisor/consultant involvement. Contact was reduced from daily, to one day a week for no more than two hours. The results showed that all of the students made some gains; however, the gains varied by student and were not uniformly maintained over time. Notably, some of the students appeared to have particular PLS targets already mastered at baseline, for these students those specific PLS lessons may not have been important. That said, the number of students who already had each skill in their repertoires varied and ranged from zero to five suggesting that at least one student benefited from instruction on each skill. The principal results from this study relate to those skills that were not already in the children's repertoires at baseline.

While maturation effects might have influenced students' acquisition and maintenance behaviors, the data suggested that one or more students benefited from each PLS lesson. Table 4.1 provides a summary of how many students improved from baseline to maintenance on each skill. Although this was a case study, and experimental control was not demonstrated, at least one student improved on every skill over the course of this inquiry.

For example, half of the participants showed mastery of comforting at maintenance. This skill seemed to be one of the most difficult in the set as none of the students had shown mastery of it at baseline. It was taught last; thus, the students had a limited time to practice this skill after it was taught. Jacob and Liam were absent during the teaching week for this skill and their data look the same in baseline as they do in maintenance. These data, compared to the data of the other four participants, who

Table 4.1

*Number of students with improved behavior across PLS skills*

| Skill                  | # Students Improved |
|------------------------|---------------------|
| Responding to name     | 3                   |
| Following instructions | 4                   |
| Asking for assistance  | 5                   |
| Asking for attention   | 4                   |
| Tolerating a delay     | 3                   |
| Disappointment         | 2                   |
| Sharing                | 1                   |
| Comforting others      | 4                   |

demonstrated gains in this skill that were maintained, seem to suggest that the PLS teaching may have had an effect. Although these data seem promising, the effects of variables other than the PLS instruction cannot be known. The heterogeneous outcomes suggest that the PLS lessons might have helped all of the students in different ways, with benefits possible whenever the PLS target was unfamiliar to a particular student.

The order of skills taught in this study was determined based on prior research. In this case, it might have been more helpful to the majority of students if the skills least mastered by the entire group had been taught first, followed by those already known by the majority. For example, none of the students demonstrated 100% mastery of comforting at baseline, but it was taught last. By comparison, five of the six students appeared to have mastered sharing at baseline. In order to optimize student opportunities to practice the PLS during each school day, teaching the least known skills before the

better-known skills could be advantageous when teaching skills to the whole group in a skill-of-the-week fashion.

It is worth noting that most of the students' errors were markedly reduced during the maintenance phase, as compared to baseline. Specifically, for four out of the six students, errors of commission (e.g., problem behavior) decreased from baseline or did not occur during maintenance probes. Unfortunately, because baseline data were collected a number of weeks before acquisition data it is uncertain whether maturation, sequencing effects, or other classroom factors could have contributed to student improvement. Still, the error reduction data are encouraging and suggest that the PLS program is promising.

### **Consultant Presence**

It is unclear whether the reduced amount of expert support influenced the results. Reducing consultant involvement while still maintaining integrity to the PLS teaching components and demonstrating experimental control poses a challenge. This study sought to implement the PLS program in "real world" conditions but doing so resulted in significant threats to the internal validity of the findings. Ultimately, this inquiry is a case study in how one might use the PLS as a class-wide intervention with minimal consultant involvement and staff performance feedback. Given the differences in outcomes between the original Hanley et al. (2007) research and this study, it appears that reductions in consultant presence might have come at a cost of reductions in program effectiveness.

It is uncertain how many evocative situations were presented in this study but, on average, at least 11 were provided per student each day. The original Hanley PLS study (2007) averaged 13 programed evocative opportunities per skill. The reduced consultant presence does not seem to have influenced the number of opportunities that students had

to practice the PLS skills each day, due to the fact that all skills were practiced in this study across at least a five-day week.

Just as the students require opportunities to practice with immediate feedback, PLS teachers need an effective feedback loop in order to improve their implementation of evocative situations for students. Although we know how much time was allotted for staff training in the original Hanley et al. inquiry (2007), it is uncertain how much direct on-site feedback was given to the teacher and paraprofessionals during that study. The dose of the program in relation to just how much staff feedback, modeling, and rehearsal was provided may have contributed to the outcomes of this study.

As noted, the integrity with which the teacher provided PLS instruction seemed to stay constant when the researcher was present, but it is not known if there was procedural drift during other times or days of the week when observation and consultation was not available. In addition, the paraprofessionals' performance was not formally evaluated; yet, when the lead teacher was out sick the integrity with the program fell to 50%. In the original study (Hanley et al., 2007), two of the authors met with the teachers weekly for 30-45 minutes to review goals and procedures; in addition, classroom supervisors provided continuous and often immediate daily feedback on teaching and data collection procedures. In comparison, the consultant in this study was present in the classroom once a week for at least an hour but no more than two, using that time to score the teacher with the procedural integrity checklist, discuss how things were going with that week's PLS target lesson, and generally observe the classroom to provide direct feedback to the teacher, but was not present during any other time.

For example, during the week when asking for assistance was taught, the consultant was in the room from 2:00-3:00 pm on Thursday afternoon. She observed

circle time and scored the teacher using the procedural integrity checklist. She then met with the teacher for approximately 30 minutes while the paraprofessionals had the students engaged at centers. Following the meeting, she observed the classroom during snack and pointed out to the teacher that the yogurt tubes a paraprofessional handed to the students could have remained unopened in order to create an opportunity for students to demonstrate the skill of asking for help.

When the consultant was not there, it was up to the teacher to ensure the evocative situations were being programmed and data collection was happening as expected. The procedures implemented in this study were designed to represent an amount of teacher support that may be feasible in a public school. Specifically, the consultant was a school psychology intern who worked in the building 2 days per week as part of her assigned duties. Providing up to 2 hours per week of consultation for the PLS program was the most that was possible in relation to other responsibilities. The current results indicated that, when students had low levels of a skill in baseline, they typically made gains during the teaching phase and most skills taught were maintained. These results are encouraging given the drastic reduction in consultant or supervisor presence. However, the "real world" implementation impeded experimental control.

### **Limitations and Future Research**

There are many limitations to the current study; however, these challenges offer ideas for additional research. As mentioned, baseline data were collected at the start of the study for all skills, so those skills which were taught later in the year had potentially outdated baseline data and were more susceptible to maturation effects. The most extreme example of this includes the last skill taught which was comforting others; this skill was taught a full eight weeks following the initial baseline. To remedy this lack of

up to date baseline data, research observations could be continued on all skills that were not currently being taught so that there would be multiple baselines across skills. Collecting such data would satisfy requirements for more rigorous research but unfortunately would also be very difficult for some classrooms to achieve.

Depending on the prior skills of the observers, additional preparation for staff might be needed in order to make data collection of multiple skills feasible. Besides reducing consultant involvement, one of the goals was to implement the program with existing school staff. In order to address this goal, data collection requirements were minimized as much as possible. Even though all students in the classroom had individualized education programs (IEPs), the data collection expectations for the specific behaviors of interest in this study were greater than what was typical for the staff. It is worth noting that the staff were also required to collect data on IEP goals, attendance, and toileting among other responsibilities. It was hypothesized that asking the teacher and assistants to collect data on all the PLS behaviors every day for every student would be challenging and take too much time away from instruction. As implemented, the teacher and staff collected data on the PLS skill of the week in order to make the data collection feasible alongside other duties. Based on the results obtained in this study, it might be necessary to provide more in-depth training in observation and data collection procedures for those responsible for implementing the PLS program. Without more data, including IOA for student behavior and paraprofessional behavior, the internal validity and reliability of the program cannot be assured, thus, the results are tentative.

As mentioned earlier the data collected were from probes, and there was no information about how many total evocative situations were actually presented to each student per skill. Due to the fact that the consultant was only there for one to two hours

once a week, and otherwise did not enter the classroom, counting the total evocative situations was not feasible. Also, the consultant's time in the classroom was expected, in that it occurred on the same day and at the same time every week, and this is also when the procedural integrity and IOA data were collected. This predictable schedule was implemented in order to work with the existing schedule in the classroom, and to ensure time for the researcher to speak to the lead teacher. It is unknown if this predictability could have influenced teacher or paraprofessional behavior, but research suggests that observation can have a direct effect on the behavior of those observed (Alvero & Austin, 2004). Although school schedules are typically static, it may be important for future implementation research to make the observations and consult time more random. This could reduce expectancy and observation effects on the outcomes.

It is uncertain what components of the PLS program, if any, were responsible for student learning or the lack thereof. Specifically, it could be that just providing stickers to students caught exhibiting the desired skills resulted in PLS gains apart from any behavioral skills training or contriving of evocative situations. Future research that includes a component analysis would be an addition to the current literature. The difficulty in identifying functional variables in this implementation study suggests that additional research focusing on implementation components is needed.

Future examinations should endeavor to make data collection more feasible so that adequate information can offset the threats to internal validity observed here. For example, studies that include documenting the effects of teaching one PLS skill at a time might be a way to investigate outcomes in public-school settings. Such studies could involve collecting baseline observations in one week, followed by teaching a specific PLS skill the next. In order to have adequate baseline data for each successive skill,



observations of the next skill would need to happen during the same week as each intervention, or there would need to be a baseline week in between each PLS skill introduction. The limitation of this schedule is that it could require twice the amount of school weeks. Along those same lines, another option may be to make Monday the day when baseline data are collected during the week for each successive skill and teach only four out of five days of the week. This may limit teaching opportunities to some extent but would provide a timelier pre-PLS program level of student skill.

Another option for future research that incorporates gathering data on all PLS skills simultaneously is to train the teachers to use more in-depth observation and recording methods. For example, in a similar study with six participants, with the goal of teaching eight PLS skills, it would be ideal to record at least five evocative situations per skill every day for each student. This would mean collecting at least 240 data points per day classroom-wide for a total of 1,200 across each week. This seems like a lot of data, but according to the baseline data, potentially not all students would need to work on all of the PLS skills. If the PLS lessons were organized so that only those skills that a majority of the classroom did not yet have in their repertoires were taught, the amount of data needed would be reduced. Importantly, incorporating PLS targets into the students' IEPs by using PLS baseline data as present levels for communication acquisition goals may make it possible to capture required data during instruction.

Despite the limitations from the current results, this study does add to the research in providing an example of the challenges and outcomes from an implementation of the PLS program in "real world" conditions. Specifically, a public-school preschool teacher and paraprofessionals implemented the PLS program with weekly (instead of daily) ongoing consultation. The teacher who participated in this study shared at the end of the

school year that she preferred the PLS instruction to other socio-emotional learning curricula that had been proposed in her school district because of its ease of implementation and utility in everyday classroom situations. Future research should examine how to efficiently and effectively train and support public school teachers in schools with limited monetary resources or time to allot to training, consultation and data collection. A question that remains to be answered in the research pertains to how many consultation, training, and instructional opportunities are necessary in order to yield PLS gains and corresponding reductions in problem behavior.

Overall, this study's results suggest that a modified version of the PLS program that included much less consultant time may have contributed to meaningful improvements in the students' pro-social skills in the classroom. Functional communication can be considered an antidote to problem behavior. The behavioral skills training included in the PLS program may be able to inoculate preschoolers against certain interfering classroom behavior that stems from a lack of being able to communicate their needs or tolerate not getting what they want. The PLS program holds promise in this respect and future research in this area is a worthwhile endeavor.

## Chapter 5: Summary

The objective of this investigation was to determine whether gains in pro-social skills and reductions in challenging behavior would occur when using the PLS program under conditions of reduced consultant involvement. In the original PLS research (Hanley et al., 2007) supervisor contact occurred throughout each school day. In this inquiry, contact occurred on a weekly basis for no more than two hours. Six students participated in this study and results varied based on the individual, with students acquiring some skills but not others. Typically, when skills were at low levels in baseline (below 80%), gains in PLS were observed during teaching phases. Also, students exhibited more errors and interfering behavior in baseline than they did during maintenance.

With reductions in consultant/supervisor involvement came challenges with experimental control, and so it is uncertain whether changes in student behavior were a result of PLS teaching or other factors such as the sequencing of skills taught or student maturation across time. The rationale for the current study was based on the reality that consultants and trained assistants may not be a common element available to the average preschool setting. The teacher who participated in this study felt that the PLS program was beneficial and mentioned that she preferred it to other socio-emotional learning curricula her school district had supported in the past. This study attempted to make the PLS program feasible to public school teachers in facilities with less resources and serves as a pilot study for future researchers to examine this question and pursue additional research promoting student social skills.

## References

- Alvero, A. M., & Austin, J. (2004). The effects of conducting behavior observations on the behavior of the observer. *Journal of Applied Behavior Analysis, 37*, 457-468.
- Beaulieu, L. & Hanley, G.P. (2014). Effects of a classwide teacher-implemented program to promote preschooler compliance. *Journal of Applied Behavior Analysis, 47*, 594-599. doi: 10.1002/jaba.138.
- Beaulieu, L., Hanley G. P., & Roberson A.A. (2011). Effects of responding to a name and group call on preschoolers' compliance. *Journal of Applied Behavior Analysis, 45*, 685-707. doi: 10.1901/jaba.2012.45-685.
- Brown-Chidsey, R. & Bickford, R. (2015). *Practical handbook of multi-tiered systems of support: Building academic and behavioral success in schools*. New York, NY: Guilford Press.
- Campbell, D. T., & Stanley, J. C. (1963). *Experimental and Quasi-experimental Designs for Research on Teaching*. Handbook of Research on Teaching. Chicago: Rand McNally & Company.
- Fahmie T. A., Luczynski K. C. (2018). Preschool life skills: recent advancements and future directions. *Journal of Applied Behavior Analysis, 51*, 183- 188. doi: 10.1002/jaba.434.
- Hanley G. P., Fahmie T. A., & Heal N. A. (2014). Evaluation of the preschool life skills program in Head Start classrooms: a systematic replication. *Journal of Applied Behavior Analysis, 47*, 443- 448. doi: 10.1002/jaba.132.
- Hanley G. P., Heal N. A., Tiger J. H., & Ingvarsson, E. T. (2007). Evaluation of a class wide teaching program for developing preschool life skills. *Journal of Applied Behavior Analysis, 40*, 277-300. Retrieved from PubMed Central PMCID: PMC1885412.
- Himle, M.B. Miltenberger, R.G., Flessner, C. & Gatheridge, B. (2004). Teaching safety skills to children to prevent gun play. *Journal of Applied Behavior Analysis, 40*, 137-156.
- Kraus A. J., Hanley G. P., Cesana L. L., Eisenberg D., & Jarvie A. C. (2012). An evaluation of strengthening precursors to increase preschooler compliance. *Journal of Applied Behavior Analysis, 45*, 131-136. doi: 10.1901/jaba.2012.45-131.
- Luczynski K. C., & Hanley G. P. (2013). Prevention of problem behavior by teaching functional communication and self-control skills to preschoolers. *Journal of Applied Behavior Analysis, 46*, 355-368. doi: 10.1002/jaba.44.

- Stephenson K. M., & Hanley G. P. (2010). Preschoolers' compliance with simple instructions: a descriptive and experimental evaluation. *Journal of Applied Behavior Analysis*, 43, 229-247. doi: 10.1901/jaba.2010.43-229.
- Toner, I. J., & Smith, R. A. (1977). Age and overt verbalization in delay-maintenance behavior in children. *Journal of Experimental Child Psychology*, 24, 123-128.
- Wilder D. A., Allison J., Nicholson K., Abellon O.E., & Saulnier R. (2010). Further evaluation of antecedent interventions on compliance: the effects of rationales to increase compliance among preschoolers. *Journal of Applied Behavior Analysis*, 43, 601-613. doi: 10.1901/jaba.2010.43-601.
- Wilder D. A., Zonneveld K., Harris C., Marcus A., & Reagan R. (2007). Further analysis of antecedent interventions on preschoolers' compliance. *Journal of Applied Behavior Analysis*, 40, 535-539. Retrieved from PubMed Central PMCID: PMC1986698.

### Appendix A: Procedural integrity checklist

| Step | Task  | Observed? |
|------|---|-----------|
| 1    | Explained the skill   | Y N       |
| 2    | Modeled the skill   | Y N       |
| 3    | Role-played the skill   | Y N       |
| 4    | Provided appropriate feedback while student rehearsed the skill           | Y N       |
| 5    | Evocative situation provided  | Y N       |
| 6    | Appropriate feedback provided based on correct responding, or             | Y N       |
|      | Appropriate feedback provided based on error of omission, or              |           |
|      | Appropriate feedback and 'sit away' provided based on error of commission |           |
|      | TOTAL   | /6        |

### Appendix B: PLS student response data collection form

|                   |            |            |            |            |            |            |            |            |            |            |
|-------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Student _____     |            |            |            |            |            |            |            |            |            |            |
| <b>COMPLIANCE</b> |            |            |            |            |            |            |            |            |            |            |
| PLS               | 1          | 2          | 3          | 4          | 5          |            |            |            |            |            |
| Name              | +          | +          | +          | +          | +          |            |            |            |            |            |
|                   | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O |
| Instruction       | +          | +          | +          | +          | +          |            |            |            |            |            |
|                   | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O |
| <b>REQUESTING</b> |            |            |            |            |            |            |            |            |            |            |
| Assistance        | +          | +          | +          | +          | +          |            |            |            |            |            |
|                   | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O |
| Attention         | +          | +          | +          | +          | +          |            |            |            |            |            |
|                   | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O |
| <b>TOLERANCE</b>  |            |            |            |            |            |            |            |            |            |            |
| Delay             | +          | +          | +          | +          | +          |            |            |            |            |            |
|                   | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O |
| Disappointment    | +          | +          | +          | +          | +          |            |            |            |            |            |
|                   | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O |
| <b>FRIENDSHIP</b> |            |            |            |            |            |            |            |            |            |            |
| Sharing           | +          | +          | +          | +          | +          |            |            |            |            |            |
|                   | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O |
| Comforting        | +          | +          | +          | +          | +          |            |            |            |            |            |
|                   | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O | --C    --O |

Key= (+): correct, (--C): error of commission, (--O): error of omission

\*Circle correct (+) or type of error

## Appendix C: Sample PLS Lessons

Modified from Hanley et al. (2007) appendix pages 298-300, adapted text in italics.

### Unit 1: Compliance

1a. Responding appropriately to name: Within 2 s, the child stops competing behavior, orients towards speaker, and says “yes.”

Adult calls child by first name. During meals, while child is waiting for food or drink. During free play, while child is engaging a preferred activity. While child is transitioning between activities or locations in classroom. “When I call your name, stop what you are doing, look at me and say ‘Yes.’”

1b. Complying with simple instructions: Within 3 s of the initial prompt, child initiates completion of the instruction and completes the instruction in a timely manner.

Adult provides a single-step instruction. During meals, instruct child to take some of food, pass the food to [name], pour a half a glass of [liquid], wipe your mouth, throw away your napkin, scrape your plate, dump your [liquid], stack your cup or plate, or push in your chair. During free play, instruct child to pick a letter, show me [or give me] the [object], put the [item] on the [surface], pick a [item], sit in the chair, or walk to [specify area]. During a transition, instruct child to walk to the bathroom, use soap, dry your hands, grab your coat, put on your coat [hat or mittens], or walk to the library. “When I give you an instruction, do it right away.”

### Unit 2: Requesting

2a. Requesting assistance: Child requests assistance by saying “help me, please” within 45 s of instruction delivery (using appropriate tone and voice volume).

Adult provides a difficult task. During free play or centers, instruct child to put on or fasten the clothes, put [items] on high shelf, open the lotion [or lip balm] container, tie her shoes, open the plastic container, punch holes in the paper, rip the tape from the dispenser, or staple the pages together. During a transition, instruct child to open container [container is closed tightly], put on your coat [coat is inside out or hung high], zip up your coat, put on your gloves, or tie your shoes. “When something is too hard to do, find a teacher and say, “help me please.”

2b. Requesting attention: Child says “excuse me” to gain adult’s attention, waits for a response, and then requests access to the area or material in the form of “May I .”

Child recruits attention by saying “excuse me” (using appropriate tone and voice volume). Adult attention is diverted. During free play, centers, meals, or transitions, a second educator will prompt the target child to obtain a teacher’s attention when that teacher is talking with another adult, talking with another child, talking on the phone,



writing something, helping another child with a task, facing away from the child while working at a high counter, or engaged in setting up the next activity. “When you want something from a teacher or a friend and they are doing something else, say ‘excuse me’ to get them to look at you.”

An area is blocked by an adult or a preferred material is unavailable. During free choice and transitions, stand in front of doorways, cubbies, paper towel holder, bathroom trash, between tables, or hold any relevant material necessary. During centers, hold necessary or preferred materials (e.g., an art supply). During meals, delay passing the foods or drink. “When someone is in your way or has something that you want, say ‘excuse me’ to get their attention, and then say, ‘May I —’ to get what you want.”

### **Unit 3: Tolerance**

3a. Tolerating delay: Child says “okay” and waits patiently for 30 s for the adult-mediated event.

Adult tells child to wait for something and delays providing requested item or event for about 30 s. “When an adult tells you to wait, say, ‘okay,’ and use your waiting words.” (“When I wait quietly, I get what I want.”)

3b. *Tolerating disappointment: Child says, “I can make another choice” and chooses from alternatives offered by an adult.*

*Items are within children’s view but unavailable during free play, Child asks for a desired item, Adult says, “sorry \_\_\_ is not a choice right now, you could say ‘I can make another choice’ and pick something else so you can keep playing.”*

### **Unit 4: Friendship**

4a. Offering or sharing: Within 10 s of a newcomer’s arrival, target child offers some of the toys or materials within reach.

Another child is without toys or activity materials. During free play or centers, a teacher will arrange for the helper child, who will not have any materials, to approach the target child who is playing with multiple materials. “When you see someone, who does not have any toys, share some toys with them.”

4b. Comforting others in distress: Within 10 s of an event, target child approaches the victim and asks, “Are you okay?”

Another person shows signs of pain or distress. During meals, free play, or centers, a teacher will bump his or her own body into any surface, trip (but not fall) over surfaces or items, drop items on oneself, pinch a body part with an item, describe an event that was mildly unpleasant (e.g., “My cat stayed out all night in the cold last night”), or report on mild physical ailments (e.g., “My legs hurt a bit from running yesterday”). “When someone looks hurt or upset, ask the question, ‘Are you okay?’”

### **Biography of the Author**

Kelly Pelletier's educational background includes a Bachelor of Science degree in psychology with a minor in health studies from the University of Southern Maine (1998), as well as a master's degree in Applied Behavior Analysis from Northeastern University in Boston (2008), she has been practicing as a board-certified behavior analyst since 2008 and has extensive experience working with student's who exhibit severe behavioral challenges including aggression and self-injury. She's worked with students on the autism spectrum since 1998 in private, day treatment, and public-school settings. She also has multiple years of experience working with students who have emotional disorders and helped to create a day treatment center within a public school, ensuring students had a safe space to learn with opportunities for inclusion. She has conducted research in the area of procedural integrity with behavior plan implementation (Pelletier, McNamara, Braga-Kenyon, & Ahearn, 2010), reducing seclusion with a functionally alternative break, and teaching social skills to preschoolers with developmental delays to decrease interfering behavior. She believes academic programs that are a good fit go hand in hand with pro-social behavior in schools and is a strong proponent of progress monitoring to evaluate student gains in both academic and social behavior.

Kelly was born in Daigle Maine, the eldest of four children to Pam and Dan Pelletier of Fort Kent Maine. She grew up in Belgrade Lakes Maine and attended Messalonskee high school where she played basketball and ran track and cross-country. In her spare time, she likes to read, cook, and play outside. She especially enjoys hiking, Nordic skiing, and fat biking in the woods! Kelly and her spouse March own a home in Portland Maine and currently live in Palmer Alaska with their dog Annie. She is a

candidate for the Doctoral degree in School Psychology from the University of Southern Maine in August 2018.