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EFFECTS OF ELECTRONIC FEEDBACK ON INCREASING POSITIVE INTERACTIONS AMONG PRE-SCHOOL TEACHERS AND THEIR STUDENTS

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EFFECTS OF ELECTRONIC FEEDBACK ON INCREASING POSITIVE
INTERACTIONS AMONG PRE-SCHOOL TEACHERS AND THEIR STUDENTS

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THESIS

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A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science
in the College of Education
at the University of Kentucky

By

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Lexington, Kentucky

Director: Dr. Allan Allday, Professor of Special Education

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ABSTRACT OF THESIS

EFFECTS OF ELECTRONIC FEEDBACK ON INCREASING POSITIVE
INTERACTIONS AMONG PRE-SCHOOL TEACHERS AND THEIR STUDENTS

The purpose of this study was to examine the effects of e-mail specific performance feedback (ESPF) on increasing the quantity and quality of pre-school teacher behavior specific praise (BSP) using a multiple probe design across 4 general education pre-school classrooms which included students with and without disabilities. Researchers also wanted to examine the effects of the teacher's BSP on student's task engagement during class activities. Results indicated a functional relation between ESPF and increasing the quantity and quality of BSP statements. Results also indicated that increased quantity and quality of BSP statements increased average task engagement across all student participants.

KEYWORDS: E-mail performance feedback, teacher training, praise statements, behavior specific praise, voice inflection

Kathryn Gorton

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Section 1: Introduction

Inclusion rates for students with disabilities in the general education classroom have steadily increased over the past two decades (Cook, Cameron, & Tankersley, 2007). According to the Individuals with Disabilities Education Act (IDEA) database (U. S. Department of Education, 2016), it is estimated that 63% of students with disabilities spend 80% of their time inside the general education classroom. Increased inclusion has been met with increased academic accountability. Federal legislation, such as the No Child Left Behind Act of 2001introduced penalties for schools whose students perform poorly on mandated testing; consequently, classroom management became less of a priority due to an increased focus on academic success (Plank & Condliffe, 2013). The combination of high expectations for mandated testing along with students with challenging behavior can be straining for teacher-student relationships, which can cause negative effects in child learning and social development (Plank & Condliffe, 2013). Forlin, Loreman, Sharma, and Earle (2009) noted that teacher attitudes towards inclusion were surprisingly negative which caused concern with the quality of teacher-student relationships. Plank and Condliffe (2013) noted a direct correlation between quality of teacher-student interactions and the success of student academic and social skills.

Although federal policies have increased inclusion of students with disabilities in the general education classroom, general education teachers are still not receiving the appropriate training that equips them to manage problem behavior that may occur with this population (Allday, Hinkson-Lee, Hudson, Neilsen-Gatti, Kleinke, & Russel, 2012; Brown & McIntosh, 2012). Due to increased inclusion of students with disabilities, some researchers have suggested that problematic behavior also has increased (Parsons et. al.,

2014) Research has suggested that teachers feel ill-equipped to teach and manage students with diverse learning and behavioral needs (Forlin & Chambers, 2011; Loreman, Earl & Forlin, 2007; Parsons, Miller, & Deris 2014). Freeman, Simonsen, Briere and Macsuga-Gage (2014) took a sample of 1,940 teacher preparation programs across all 50 states in the United States and found that 45 states required a classroom management course for elementary education, but only 28 states required that instruction that included research based practices. Teachers often can feel overwhelmed with classroom management and are not aware that their behaviors towards students can be used to change student behavior (Sutherland, 2000). When simple adjustments are made to teacher responses to student behavior, it can have a direct impact on students' disruptive behavior (Allday et. al., 2012).

Teachers often prefer an intervention that can easily be implemented, and also has lower rates of intrusive feedback that can be time consuming (Yeung et. al. 2015). Behavior specific praise (BSP) is one intervention that can be easily introduced and requires minimal intrusion in the classroom. BSP can be defined as specific verbal praise statements that indicates approval of the behavior being displayed by the person receiving praise. BSP has been proven to be a successful intervention to manage problem behavior in a classroom setting (Musti-Rao & Haydon, 2011; Sutherland, Wehby, & Copeland, 2000). Copious studies have investigated the effectiveness of BSP to increase social and academic behaviors and have reported promising results (Allday et. al., 2012; Sutherland & Wehby, 2001; Rathel, Drasgow, Brown, & Marshall, 2013). Allday et. al. (2012) showed that increased rates of BSP increased on task behavior for students with emotional behavior disorders (EBD). Allday and colleagues (2012) used a professional

development training on the implementation of BSP to teachers with difficulties

managing problematic behavior in the classroom. Following the training, the teachers

increased their rates of BSP and saw an increase in student task engagement. Haydon and

Musti-Roa (2011) showed that an increase in BSP decreased disruptive behavior among

students. This study used a teacher training on the implementation of BSP along with an

interval timer to signal teachers to give BSP statements at higher rates compared to

baseline. Results showed that increased rates of BSP lead to lower rates of disruptive

behavior and a decrease in verbal reprimands from the teacher.

   With, BSP, a teacher makes a verbal statement that acknowledges a specific

academic or social behavior, (e.g., "Lucy, I like the way you raised your hand before

speaking"). A non-example would take the form of a general praise statement (e.g., "Nice

work" or "Good job"; Haydon and Musti- Roa, 2011). Not only does BSP benefit the

students, but the consistent use of BSP can improve the working conditions of the teacher

by decreasing stress levels and causing less frustration due to increased appropriate social

and academic student behavior (Rathel & Drasgow, 2007; Musti-Rao & Haydon, 2011).

   Although BSP is an effective and efficient intervention, it is still underused in the

teaching profession (Reed, 2014). Some teachers may lack proper training in how to use

BSP when teaching. Also, teachers may not be aware that student behavior can affect

their own behavior. Teachers might inadvertently reinforce disruptive behavior with

verbal reprimands which can provide attention and escape from work for the student

(Rathel & Drasgow, 2007). Students may seek adult attention, whether it is a positive or

negative interaction and sometimes negative interactions can be more reinforcing to a

student because receiving any attention from the teacher is better than receiving no

attention (Allday, 2011). This is why it is important for teachers to understand the significance of their behavior, which can be used as a reinforcing tool that benefits their teaching and students' learning.

Studies have shown that the positive to negative ratio of teacher to student interaction should be at least 3:1(Shores, Gunter & Jack 1993; Wong & Wong, 1998). For example, for every negative statement made by a teacher, at least three positive statements should be made as well. Unfortunately, this ratio is usually 1:4 (Shores, Gunter, & Jack, 1993; Van Acker, Grant, & Henry, 1996). Oftentimes, teachers believe that students do not need to receive praise for on task behavior or for following directions, because those behaviors are naturally expected of them and can negatively affect the child's intrinsic motivation (Rathel et al., 2014; Lepper, Keavney, & Drake 1996; Ryan & Deci,1996).

How teachers communicate their praise and reprimands also may affect student behavior; however, there is little research to support this claim. Research has not tested the effects of voice inflection that conveys enthusiasm in praise statements. Enthusiastic praise statements might seem more genuine, which may have a greater effect on student behavior than praise statements that seem less enthusiastic. O'Reiley, Renzaglia, and Lee (1994) conducted a study providing immediate feedback to pre-service teachers. The teachers were scored on their tone of voice which had to convey enthusiasm through voice inflection along with appropriate voice volume when providing praise statements based off of the observer's discretion. This was a requirement that their participants had to perform in order for their lesson to be considered effective. The Council of Exceptional Children published a study conducted by Lampi, Fenty, & Beunae (2005),

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emphasizing the importance of using praise statements as a way of classroom management, especially with students who have disabilities. The article compiled a list of what was considered quality praise according to various sources (Gootman 2001; Hall & Hall 1998; Mercer & Mercer 1998). Different methods of providing praise were suggested such as (a) determining which students might react positively to public praise, (b) providing praise only when the student is engaging in the desired behavior, (c) praise should be behavior specific, (d) praise should vary and not sound identical across students, (e) praise should be incorporated in the lesson and should not be disruptive, and finally (f) praise should sound genuine so that it sounds like the teacher really meant it. The study emphasized that students will know whether the teacher was being truthful when giving praise which might cause distrust from the student if the praise did not sound genuine. Further research is needed to expand the importance of both the quantity and quality of BSP.

Learning how to increase the use of BSP is quite simple, but managing the effectiveness during intervention can become invasive and time consuming. Studies have tested the effects of written and oral feedback given to teachers proceeding intervention sessions (Allday et. al., 2012; Reinke, Lewis-Palmer, & Martin, 2007; Sharpe, So, Mavi, & Brown, 2002), but few studies have investigated the effects of e-mail and online feedback. One such study was Barton and Wolery (2007) in which e-mail specific performance feedback (ESPF) was provided to pre-service teachers trying to expand their expansions which consisted of expanding the student's target language by verbally repeating what the child said and adding 1 to 2 more words as a model and providing BSP during instruction. These two behaviors are used for two completely different

purposes. Expanding the student's target language is used as naturalistic way to model target language for the student. BSP is used to verbally acknowledge approval of the student's behavior. ESPF was successful in increasing the pre-service teacher's expansions, but there was not a functional relation in increasing BSP statements. Rathel et. al. (2014) used ESPF to increase the ratio of BSP statements to verbal reprimands with pre-service teachers. Data indicated functional relation between the implementation of EPSF and higher rates of BSP. There are several benefits to using e-mail as a specific performance feedback method. E-mail specific performance feedback can be sent to the teacher being observed immediately after the observation session. It also saves both the teacher and researcher time and avoids having to remove the teacher from the classroom and disrupting instruction. E-mailing can also create a dialog between researcher and the teacher to ask questions or to expand on certain ideas. Having a written record can be useful for the teacher to monitor his or her progress and can also be used for data collection purposes (Barton & Wolery, 2007). Further investigation is needed to determine whether ESPF is an effective intervention on increasing BSP. The purpose of this study was to expand the literature on e-mail specific performance feedback as a form of communication between researcher and teacher and its effect on increasing the quantity and quality of praise statements.

Section 2: Research Question

The following research questions drove the study:

1. Is there a functional relation between e-mail specific performance feedback and the increase of the quantity and quality of behavior specific praise statements of pre-school teachers?

2. Does increasing a pre-school teacher's quantity and quality of behavior specific praise statements increase task engagement for teacher-selected students identified as being off task?

Section 3: Rationale

A sufficient number of studies have examined the effects of performance feedback for teachers on increasing their BSP and reported promising results (Allday et. al., 2012, Haydon & Musti-Rao, 2011; Reinke, Lewis-Palmer, & Martin, 2007; Sharpe, So, Mavi, & Brown, 2002), but few studies have examined the effects of e-mail performance feedback as a form of performance feedback (Barton & Wolery 2007; Rathel et. al., 2014). E-mail performance feedback might be a preferred method of providing teachers with feedback because it is less intrusive and allows teachers to receive their feedback on their own time instead of having to take time away from instruction. Teachers receiving training and feedback on BSP is important because it is a relatively simple intervention to implement and can have positive effects on student task engagement (Allday et. al., 2011). Not only is increasing the quantity of BSP important, but it is important to also increase the quality of BSP. Little to no research has been conducted to examine teachers' voice inflection while giving praise, which is important because if praise does not sound enthusiastic or genuine, the praise statement might not be reinforcing (Filcheck, McNeil, & Herschell, 2001).

Section 4: Method

Participants

General education preschool teachers were selected to participate by the school's executive director. The lead researcher gave an extensive interview explaining the purpose of the study which included, explaining what BSP is by giving examples and non-examples, voice inflection when giving BSP, needing participants with relatively low rates of BSP and difficulty managing problem behavior, needing students with difficulties staying on task and testing whether ESPF can increase rates and quality of BSP. The executive director agreed that she had 4 teachers who would benefit from the study and had been want to focus on increasing BSP her teachers. Teacher selections were based on the executive director's recommendations of teachers who were observed as having (a) difficulty managing problematic behavior and (b) having low rates of praise during instruction. Information on each teacher participant can be found in Table 1. Teacher names are pseudonyms to ensure confidentiality.

Student selection consisted of each teacher nominating two students per class who were considered by the teacher to engage in low rates of task engagement. Student participants were not required to have a disability diagnosis to participate in the study, but had to be identified by the teacher as having problems with task engagement. Ms. Rose nominated two 4-year-old Caucasian male students Eric and Kyle, who were not diagnosed with a disability. Based off the lead- researcher's observations and conversation with the teacher, Eric and Kyle were both able to complete tasks

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independently, engaged with other peers, and were able to communicate at age appropriate levels. Ms. Dorothy nominated one Caucasian 4-year-old male student and one Caucasian 4-year-old female student, Stan and Wendy. Stan was diagnosed with a sensory processing disorder and often needed extra support from the teacher to complete his work, needed teacher support to engage with his peers appropriately, but had no problems communicating at age appropriate levels. Wendy was not diagnosed with a disability and was able to complete tasks independently, interacted with her peers appropriately, and was able to communicate at age appropriate levels. Ms. Sophia nominated two Caucasian 4-year-old male students, Kenny and Ike. Kenny was diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) and needed full teacher support to complete tasks independently and following directions, interacted with peers appropriately and was able to communicate at age appropriate levels. Ike was not diagnosed with a disability and was able to complete tasks independently, interacted with peers appropriately and was able to communicate at age appropriate levels. Ms. Blanche nominated two Caucasian 4-year-old male students, Timmy and Clyde, who were not diagnosed with a disability. Timmy and Clyde needed extra support from teachers to complete tasks independently, needed support from the teacher to interact with peers appropriately, and were able to communicate at age appropriate levels.

Table 1. Teacher and Classroom Characteristics

Name	Ethnicity	Experience	Certification	Classroom Size	Student: Adult Ratio
Ms. Rose	White	9 Years	B.A. in Special Education	20 Students	10:1
Ms. Dorothy	White	4 Years	B.A. in Child Development	12 Students	6:1
Ms. Sophia	White	4 Years	B.A. in Child Development	20 Students	10:1
Ms. Blanche	White	15 Years	B.A. in English M.A. in Secondary Education	12 Students	6:1

Note. All teachers were female and between 25 and 37 years of age.

Setting

This study took place in 4 classrooms in a non-profit, university-affiliated preschool that served children with and without disabilities from ages 6 weeks to 5 years old. The school had a total of 172 students with approximately 30% identified with a disability. The maximum student to adult ratio for the preschool classes was 10:1. Two pre-school classes (Ms. Dorothy and Ms. Blanche) consisted of 12 students ages 3-4 years old and the other two preschool classes (Ms. Rose and Ms. Sophia) consisted of 20 students ages 4-5 years old.

Materials

Electronic materials. For this study, an iPod Touch® using a voice monitoring software application called *Voice Analyst* (© Speech Tools 2017) was used to record the voices of the teacher participants during observation sessions. The iPod Touch® was connected to an Apple EarPod® and placed in an exercise arm band that was attached to the teacher's arm.

This study also used e-mail specific performance feedback during intervention. E-mails were sent via an Apple MacBook Air® using the Google Mail software. In addition, the computer also was used to store teacher and student data using Microsoft Excel® software. An example of an ESPF e-mail can be seen in Appendix A.

An interval timer application *Interval Timer (*©Appxy 2016) on the researcher's smartphone was used by the researcher when collecting data on student task engagement. The timer signaled the researcher by vibrating every 10s to observe the target student's task engagement.

Paper materials. The researcher created a paper data sheet to record 10s intervals of student task engagement using momentary time sampling. Data sheets included an operational definition of task engagement and 118 intervals for recording task engagement for every 10 s. The data sheet can be seen in Appendix B.

Data Collection

Behavior specific praise. The primary dependent variable was BSP. Behavior specific praise was defined as verbal accounts that show approval of the specific behavior being displayed by the student. (e.g. "Alex, I like how you raised your hand before speaking"). Data were collected on positive and negative communication behaviors, but BSP was the primary focus of the intervention. The definition, examples, and non-examples of positive and negative communication behaviors can be found in Table 2. Each observation session was audio recorded using the voice monitoring software *Voice Analyst*, which created a permanent product. The researcher later listened to the recording and used a frequency count measure was used to capture the number of positive and negative communication used during each session.

Table 2. Operational Definitions of Teacher Communication Behaviors

Type of Statement	Definition	Examples	Non-Examples
Behavior- Specific Praise	Verbal accounts that show approval of the specific behavior being displayed by the student.	"Thank you for lining up quietly." "Nice job writing in complete sentences."	"Good job." "Nice work." "Please get out your book."
General Praise	Verbal accounts that imply validation of students' behavior.	"Good job." "Nice work."	**"**Good job completing your classwork."
Behavior Specific Verbal Corrections	Verbal accounts that imply dissatisfaction of specific behavior being displayed by the student.	"Stop talking." "Jill, I am not going to ask you again. Sit down." "You need to be paying attention."	"Turn to page 24." "It's time to begin Math." "We don't have time for computer today."
General Verbal Corrections	Verbal accounts that imply dissatisfaction of students' behavior.	"Stop it" "Quit" "I am disappointed"	"It's time to go"

Voice Inflection. Voice inflection of praise and corrective statements were

measured using the voice monitoring software *Voice Analyst.* The researcher listened to

the recording and when a praise or corrective statement occurred, the researcher

conducted the following steps: (a) paused the recording, (b) zoomed in on the iPod

Touch® using forefinger and thumb to where the statement occurred, (c) isolated the

statement so no other parts of speech were visible, and (d) pressed the statistics button

that displayed maximum pitch, minimum pitch, range, average, and duration of the

statement. Examples of the software measurement can be found below in Figure 1. For

the purposes of this study the researcher only focused on the range of praise and

corrective statements range was calculated by subtracting the minimum pitch from the

maximum pitch. Range was used because it gave the researcher a quantified value of the

speaker's voice inflection and could be used as a constant measure across all participants

because they all had different pitched voices. Range was calculated by subtracting the

minimum pitch from the maximum pitch. A higher range suggested more voice inflection

within the statement. This was hypothesized to suggest a higher quality of voice which

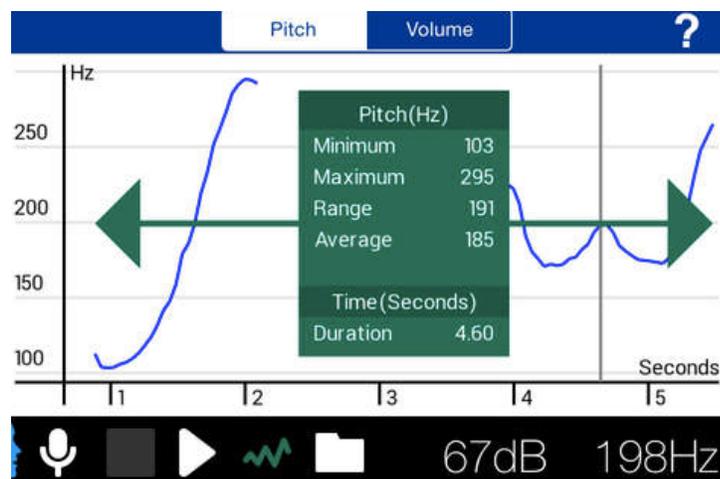was determined by the researcher's own professional judgment.

Figure 1. *Voice Analyst*

Student Task Engagement. Task engagement was operationally defined as the student (a) being oriented toward the appropriate person or item; (b) following teacher directions; (c) working on assigned work and ongoing activity. Off task behavior was defined as students who were not oriented toward the appropriate person or item, not following directions and not working on assigned work and ongoing activity. Task engagement was recorded using momentary time sampling with 10 s intervals during the observation. Actual data were recorded for 9 min and 50 s of recording due to the researcher having to turn on the voice monitoring software. At the end of the 10 seconds the researcher would look at the child to see if they were engaging in on or off task behavior. Data were collected by using alternating intervals between the two students. Each participant was observed for 5 minutes. Percentages of task engagement were determined by diving the number of intervals of on-task behavior by the total number of intervals ($n = 59$) for each student and multiplied by 100.

Experimental Design

This study used a multiple probe design across four teachers to test the effects ESPF on quantity and quality of praise statements. A multiple probe design was deemed appropriate based on the setting of the study. A multiple probe was chosen because it was much less intrusive for the teacher, but could still capture relative data while being more efficient than a multiple baseline design (Gast & Ledford, 2014). A multiple probe design across participants was also chosen because increasing BSP statements is an irreversible behavior and once teachers are aware their BSP statements are being observed, they might keep using relatively high rates of BSP even when intervention is removed. It also

identifies behavioral covariation because intervention was introduced to four participants who are functionally independent of each other, but still similar enough due to their professions and work environment which would prevent varying effects (Gast & Ledford, 2014).

Decisions to implement intervention with teachers in the next tier included the teacher giving at least 50% or more BSP statements compared to their average baseline BSP statements for 3 consecutive days. For example, if the teacher's average BSP statement was 2 during the baseline condition, they needed to provide at least 3 BSP statements during intervention for 3 consecutive days to begin intervention for the next teacher. This criterion was chosen based off of the notion of difference threshold (Grodin, 2008). This difference threshold proposes that a difference in stimulus change is not noticed until it reached a 25% change. The researcher chose a 50% increase because of the relatively low rates of behavior occurring during baseline sessions. A more robust change would be noticed if the teacher was to increase their BSP by 50% rather than 25%. For voice inflection, the teacher's range needed to be at least one-half a standard deviation more than baseline average for 3 consecutive days. A one-half standard deviation was chosen as a criterion level because it would show enough change in the teacher's inflections without having to be too straining on teacher's natural voice ability.

Procedures

General Procedures. The researcher conducted 4 classroom observations per week during the same class period at the same time each day. The researcher observed Ms. Rose's class during circle time at 9:00 a.m., Ms. Dorothy's circle time at 11:00 a.m., Ms. Sophia's small group instruction at 11:30 a.m. and Ms. Blanche's small group

instruction at 12:00 p.m. The researcher entered the room 5 minutes prior to observation, approached the teacher, put the armband holding the iPod Touch® on the teacher's right arm and had the teacher insert EarPod® with the microphone in her right ear. The microphone was used to capture a higher voice quality of the teacher and reduce background noise. The researchers then sat in a location within 4 meters where they could easily see the target students.

Observational periods lasted 10 minutes because the voice monitoring software could only record up to 10 minutes of data. Although a longer observation period would be preferred, a 10-minute session measuring task engagement had been conducted in previous research (Spence, 2003). Teacher data were collected on the teacher's communication behaviors using the voice monitoring software. Student data were collected by the researcher using momentary time sampling with 10s intervals. After the researcher attached the iPod Touch® to the teacher's arm, they had 10 s to start their interval timer, position themselves where they could easily see both target students and began recording the student's task engagement on premade data sheets.

Following the 10-minute observation, the investigator removed the iPod Touch® from the teacher's arm, thanked the teacher, and exited the classroom without giving any verbal feedback regarding teacher performance. Upon leaving the school, the researcher listened to the recording and recorded the frequency count, range of voice of behavior specific and general praise, behavior specific and general corrective statements on an Excel spreadsheet.

Probe Procedures. Probe procedures were conducted succeeding the general procedures but did not provide ESPF to the teacher. The researcher attached the arm band

with the iPod to the teacher's right arm and had the teacher placed the EarPod® in their

right ear. The teacher was unaware of how the software worked. The researcher then

turned on the software and positioned themselves where they could see both target

students and were no further than 4 meters from them. The researcher then began

collecting data on student task engagement with momentary time sampling with

alternating intervals within 10 s as in the general procedures. Once the 10-min

observation period was over, the researcher removed the armband and EarPod® from the

teacher, thanked them and left without giving any feedback to the teacher. The researcher

then listened to the recording and recorded the frequency and range of behavior specific

and general praise, behavior specific and general corrective statements on an Excel

spreadsheet. The researcher did not send ESPF to the teachers.

Intervention Procedures

      Teacher training. Teacher trainings were conducted following the probe

condition. The lead researcher met with the teachers separately for approximately 30

minutes. The purpose of this meeting was to train teachers to increase quantity and

quality of BSP. The researcher presented a prepared power point that included literature

that supported the benefits of BSP, explained how little research has measured voice

inflection of praise and why it may be important, examples of how to increase voice

inflection when providing praise statements, and played audio recordings of high and low

voice inflection. Operationally defined dependent variables were given to the teacher and

were discussed. The researcher also presented the software *Voice Analyst* by showing

them the iPod with the application on and explained how it was used to measure voice

inflection. Lastly, the researcher reviewed the performance feedback e-mails with the

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teachers. It was explained what the e-mails would look like, and allowed teachers to ask questions about the e-mail feedback.

E-mail specific performance feedback. ESPF intervention conditions were conducted following the teacher training. General procedures were followed during observation sessions. After each observation following teacher training, the researcher e-mailed the teacher before 4:30 p.m. providing feedback based on her data collection report. Each ESPF included: (a) a greeting, (b) praise for correct applications of BSP, (c) explanation of frequency count of BSP statements and range of statements in hertz, (c) corrective feedback, (d) closing statement that offered any advice or additional feedback via e-mail or in person, (e) a statement asking the teacher to respond that they received the e-mail highlighted in red and (f) salutation. Corrective feedback was given to the teacher based on BSP statements. If their frequency or range fell below the previous session, the researcher would suggest that they focus on increasing it during the next session. Observational sessions looked identical to baseline procedures. The decision to move to the next tier of the study was made when once the teacher's met the criterion level of increasing praise statements by 50% compared to the probe condition average and increased their voice inflection by one-half of a standard deviation for three consecutive sessions.

Maintenance. Maintenance of teacher BSP statements and student task engagement was evaluated with weekly probes identical to probe sessions succeeding intervention. However, teachers no longer received e-mail feedback after maintenance observation sessions.

Reliability and Procedural Fidelity

Point-by-point agreement based off of a time stamp at the starting point of the statement within .5 s was used to determine IOA for frequency of teacher BSP statements. Observers compared the time the BSP statement occurred calculated percentage of agreement by dividing the number of agreements by the number of agreements plus disagreements. The researcher and a faculty member listened to the recordings separately. IOA for Ms. Rose's probe sessions were calculated for 100% of sessions with 100% agreement. Her intervention sessions were calculated for 75% of sessions with 100% agreement. Ms. Dorothy's probe sessions were calculated for 40% of sessions with 100% agreement. Her intervention and maintenance sessions were calculated for 20% of sessions with 95% agreement (range 80% to 100%). Ms. Sophia's probe sessions were calculated for 22% of sessions with 100% agreement. Her intervention and maintenance sessions were calculated for 22% of sessions with 80% agreement (range 80%). Ms. Blanche's probe sessions were calculated for 22% of sessions with 100% agreement. Her probe and maintenance sessions were calculated for 20% of sessions with 100% agreement.

Point by point agreement was used on teacher voice inflection. Agreements were based off of the time stamp of the statement, the duration within a .5 second time frame and within 10 htz (5 htz for the minimum pitch and 5 htz for the maximum pitch). Percentage scores were calculated by dividing agreements by agreements plus disagreements and then multiplying by 100. The researcher and faculty member determined that the statement could be considered accurate as long as the range was

within 10 htz of each other. There were times that background noise would interfere with the accurate range measurement and researchers would have to manually measure the range themselves by determining the highest and lowest pitch. Vogel, Maruff, Snyder, and Mundt (2009) found that the standard deviation for the female voice during normal conversation was 20 htz. For any disagreements, the researcher and faculty member discussed them and came to a consensus for each. Ms. Rose's point-by-point IOA for probe sessions were calculated for 100% of sessions with 100% agreement. Her intervention sessions were calculated for 75% of sessions with 100% agreement. Ms. Dorothy's IOA for probe sessions were calculated for 20% of sessions with 100% agreement. Her intervention and maintenance sessions were calculated for 20% of sessions with 89% agreement (range 80%to 97%) Ms. Sophia's IOA for probe sessions were calculated for 22% of sessions with 100% agreement. Her intervention and maintenance sessions were calculated for 22% of sessions with 92% agreement. Ms. Blanche's IOA for probe sessions were calculated for 22% of sessions with 100% agreement. IOA was not able to be collected for Ms. Blanche's intervention sessions due to a time conflict with the faculty staff member who collected IOA.

Point-by-point method was used to determine IOA for student task engagement per session. Percentage scores were calculated by dividing agreements by agreements plus disagreements and then multiplying by 100. A graduate student was trained prior to observations and conduced co-observations in the classroom with the primary researcher. The researcher explained the operational definition of task engagement, gave examples and non-examples, explained the procedures of momentary time sampling with alternating intervals, showed the co-observer how to use the interval timer application on

the co-observer's smart phone, and had the co-observer practice the procedures before actual observations. For student task engagement, Ms. Rose's class had IOA for 20% of the probe sessions with 88% agreement (range 88%). Ms. Rose's class IOA during intervention was collected for 33% of sessions with 73% agreement (range 65% to 80%). One session reached 65% agreement due to a misinterpretation error of task engagement with the lead researcher and the co-observer. Following the session, the lead researcher retrained the observer by giving them more detailed examples and non-examples of task engagement. No further IOA was able to be collected because Ms. Rose left the study after that observation. Ms. Dorothy's class had IOA during probe sessions for 20% of the sessions, with 80% agreement (range 80%). Her class's IOA for intervention and maintenance sessions was collected for 20% of sessions with 85% agreement (82%-88%). Ms. Sophia's class had IOA during probe sessions for 22% of the sessions with an 83% agreement (range 78%- 83%). One session reached 78% due to a timing error between therapists. Their interval timers were not synced during the observation which led to a lower IOA. The lead therapist fixed the syncing issue for further sessions by manually starting the timers herself instead of having the co-observers start their own timer. Ms. Sophia class's IOA during intervention and maintenance sessions were collected for 33% of sessions with 85% agreement (range 81- 88%). Ms. Blanche's class had IOA collected during probe sessions for 22% of sessions with 87% agreement (range 80-93%). During intervention and maintenance sessions, IOA was collected for 20% of sessions with 96% agreement (range 96%).

Procedural fidelity was measured during the teacher training for 3 of the 4 teachers. Procedural reliability data were collected on the researcher's behavior during

training sessions with the teacher participants. A task analysis (see Appendix C) was written on the procedures of the training and the observer recorded observed behaviors then divided them by the number of planned behaviors and multiplying by 100. Procedural fidelity was 100% for 3 teacher training sessions. Procedural fidelity of e-mail feedback was collected by the researcher forwarding the e-mails with pseudonyms to a faculty member to ensure that the e-mails contained the information listed in the intervention procedures. Procedural fidelity was not collected on the researcher's procedures for attaching the armband to the teacher's arm and on turning on the voice monitoring software.

Section 5: Results

Effectiveness of E-mail Performance Feedback

Data illustrated in Figure 2 present teacher frequency of BSP statements with open circles, while average hertz per BSP statement is represented by grey bar graphs. Data illustrated in Figure 3 represents student task engagement. Table 3 represents students' average task engagement data.

Dyad 1

Ms. Rose. During the probe condition Ms. Rose had a total of 4 BSP statements (range 0 to 3) across 5 probe sessions which averaged .8 BSP statements per session. The average range of the probe condition BSP statements across 5 days was 102 htz (range 0 htz to 320 htz). The probe condition data show a therapeutic trend, but because of time limitations for the participant to continue in the study due to her pregnancy, the researcher decided to proceed with intervention in order to collect sufficient intervention data. There was an immediate increase in Ms. Rose's BSP statements following teacher training. However, there was variability in her BSP statements in the following sessions. There was an overall increase in the total statements during intervention to 26 BSP statements (range 0 to 7), which averaged 4.3 statements per session during intervention. Ms. Rose's average range for BSP statements across 5 sessions during intervention was 223 hertz (range 0 htz to 387 htz). There was slight increase in her range of BSP, nor was there an overall increase but her range did become more stable. Ms. Rose's intervention data were decelerating, but she was no longer to participate due her pregnancy. The final session recorded, was not typical compared to previous sessions. A new student was

introduced to the class and the majority of the observational period was spent introducing the student to his classmates and the rules of the classroom. There were no academic activities during the final session, which may have lessened the opportunity to provide BSP statements. Percentage of non-overlapping data points (PND) was 66%. Maintenance data were not collected due to maternity leave extending beyond data collection.

Kyle. Data illustrated as open squares in Figure 3 represent Kyle's percentages of task engagement. The majority of Kyle's task engagement during the probe condition reached below 72% which can be considered relatively low task engagement. Kyle engaged in high rates of task engagement during session 2 due to the fact that he was also asked to do his class job which was being the weather helper during circle time. He was given high rates of teacher attention because he was interacting with Ms. Rose during circle time. The remainder of the sessions, he was not asked to participate in any class jobs during circle time which also showed a decrease in his task engagement. Refer to Table 3 for Kyle's overall task engagement percentages. Following intervention, Kyle's average task engagement increased by 18%.

Eric. Data illustrated as closed circles in Figure 3 represent Eric's percentages of task engagement. Eric displayed 80% or above of task engagement for the first 3 sessions in the probe condition. During the second probe session, Eric's task engagement reached 98% because Ms. Rose asked him to complete his class job of setting the tables for breakfast and he engaged in that task for the entire session. The remainder of the sessions, Eric was not asked to do his class job during the circle time, and his task engagement decreased but was still relatively high. Despite session 2, Eric's task

engagement during the probe condition showed a decelerating trend. Refer to Table 3 for Eric's overall percentages. Following intervention, Eric's task engagement showed a sudden level change during session 6 and showed an accelerating therapeutic trend. Refer to Table 3 for Eric's overall percentages. Eric's average task engagement increased by 6%. Eric was absent during session 7.

Dyad 2

  Ms. Dorothy. In the probe condition, Ms. Dorothy had a total of 3 BSP statements (range 0 to 2) across 5 probe sessions which averaged .6 BSP statements per session. The average range of the 3 BSP statements was 132 htz (range 0 htz to 396 htz). There was an immediate increase in Ms. Dorothy's BSP statements following teacher training. Her BSP statements remained stable and showed a steady accelerating therapeutic trend. There was an overall increase in the total statements. Ms. Dorothy made 36 BSP statements (range 2 to 8) per session during intervention, which averaged 4.12 statements per session. Ms. Dorothy's average range for BSP statements during intervention was 393 htz (range 30 htz to 570 htz). Her range of BSP statements steadily increased during intervention and surpassed her average range in the probe condition. During Ms. Dorothy's first maintenance probe she had a total of 3 BSP statements with an average range of 299 htz (range 42 htz to 494 htz). Her second maintenance probe had a total of 6 BSP statements with an average range of 260 htz (135 htz to 365 htz). Ms. Dorothy's PND was 90% including her maintenance probes.

  Stan. Data illustrated as open squares in Figure 3 represent Stan's percentages of task engagement. Stan displayed 77% or below of task engagement and remained relatively low and stable for his 4 probe sessions. His data showed a slight therapeutic

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accelerating trend. Following intervention, his average task engagement increased and remained stable above his probe sessions. Refer to Table 3 for Stan's overall percentages. His average task engagement increased by 17%. Stan was absent for sessions 9, 12, 13, 14, 22 and the first maintenance probe.

   Wendy. Data illustrated as closed circles in Figure 3 represents Wendy's percentage of task engagement. Wendy displayed 73% or below of task engagement for her 5 probe sessions. Her data were variable and showed a slight accelerating therapeutic trend. Following intervention, her data became more stable with the exception of session 16 when Wendy's task engagement dropped to 63%, but then increased and remained stable during the final four sessions. and showed an accelerating therapeutic trend. Refer to Table 3 for Wendy's overall percentages. Her average task engagement increased by 20%. Wendy was absent for session 11.

Dyad 3

   Ms. Sophia. During the probe condition, Ms. Sophia had a total of 16 BSP statements (range 0 to 7) across 9 probe sessions which averaged 1.7 BSP statements per session. The average range of her BSP statements was 186 htz (range 0 htz to 320 htz). There was an immediate increase in Ms. Sophia's BSP statements following intervention. Ms. Sophia made 55 BSP statements (range 2 to 13) during her 8 intervention sessions, which averaged 6.8 statements per session. Her frequency of BSP statements increased during intervention with the exception of session 24 where she only had 2 BSP statements but then during the following 2 sessions they increased and remained stable while moving in an accelerating therapeutic trend. Ms. Sophia's average range for BSP statements during intervention was 331 htz (range 100 htz to 544 htz). Ms. Sophia's PND

was 25%. Ms. Sophia had a low PND due to her outlying data point during session 1. Maintenance probes were not yet collected for Ms. Sophia.

     Kenny. Data illustrated as open squares in Figure 3 represents Kenny's percentage of task engagement. Kenny displayed 85% or below of task engagement for his 9 probe sessions Kenny's task engagement during the probe condition was very variable but showed a decelerating trend. Following intervention, Kenny's task engagement increased and remained stable. Refer to Table 3 for Kenny's overall percentages. Kenny's task engagement average task engagement increased by 16%. Kenny was absent during session 24.

     Ike. Data illustrated as closed circles in Figure 3 represents Kenny's percentage of task engagement. Ike displayed 93% or below of task engagement for his 9 probe sessions. Ike's task engagement during the probe condition was variable and showed an accelerating trend. Following intervention, Ike's task engagement increased slightly and remained stable. Refer to Table 3 for Ike's overall percentages. Ike's task engagement during the probe condition was variable and was relatively high. Following intervention, Ike's average task engagement increased by 13%. Ike was absent for session 18.

Dyad 4

     Ms. Blanche. During the probe condition, Ms. Blanche had a total of 44 BSP statements (range 1 to 8) across 10 probe sessions which averaged 4.4 BSP statements per session. The average range of the 44 BSP statements was 274 htz (range 73 htz to 513 htz). There was an immediate increase in Ms. Blanche's BSP statements following intervention. She had a total of 55 BSP statements (range 7 to 20) across 4 sessions which averaged to 13.75 BSP statements per session. Her range of BSP statements increased

during intervention. The average range in htz of the 55 statements was 300 htz (range 74 htz to 543 htz). Ms. Blanche's PND was 75%. Maintenance probes were not yet collected for Ms. Blanche.

Timmy. Data illustrated as open squares in Figure 3 represents Timmy's percentage of task engagement. Timmy displayed 100% or below of task engagement for his 9 probe sessions. Timmy had 100% task engagement during session 20 because Ms. Blanche let him have a free play session. He was not given any task demands and he did not have to participate in the ongoing activity. Timmy's task engagement during the probe condition was highly variable and showed an accelerating trend. Following intervention, Timmy's task engagement became more stable and his average task engagement increased by 19%. Refer to table 3 for Timmy's overall percentages. Timmy was absent during session 5.

Clyde. Data illustrated as closed circles in Figure 3 represents Clyde's percentage of task engagement. Clyde displayed 86% or below of task engagement for his 8 probe sessions. Clyde's task engagement during the probe condition was variable but steadily declined. Following intervention, Clyde's average task engagement increased by 25% but decreased again during maintenance. Refer to Table 3 for Clyde's overall percentages Clyde was absent for sessions 1 and 21 and 25.
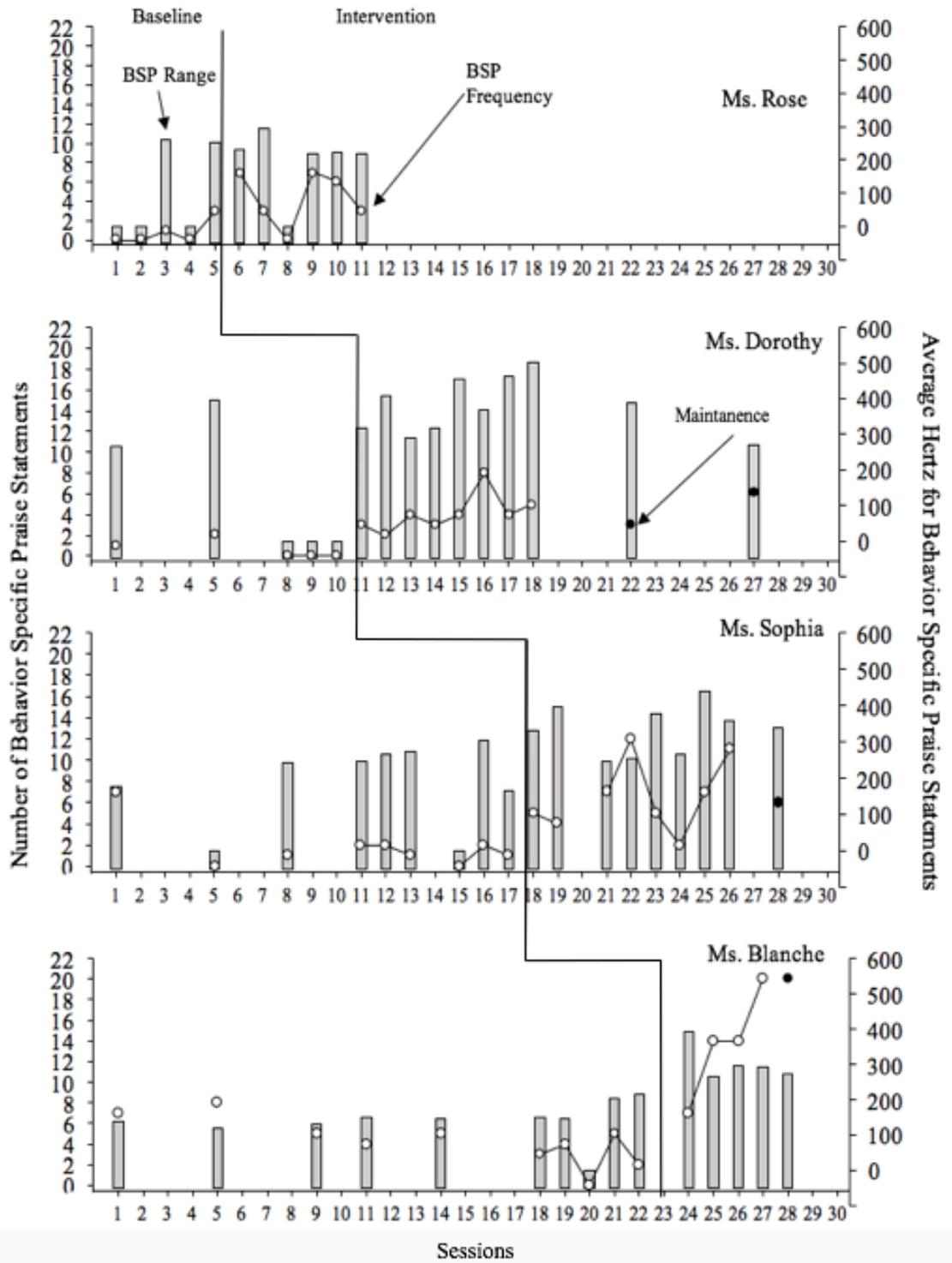
Figure 2: Graph results of frequency of BSP and average hertz of BSP across all teachers.

Figure 3: Graph results of percentage of student task engagement.

Table 3. Student Task Engagement Percentages

Student	Baseline Mean (range)	Intervention Mean (range)	Maintenance (range)
Kyle	59 (43-87)	77 (65-96)	--
Eric	76 (60-100)	82 (71-96)	--
Stan	72 (66-77)	89 (84-94)	96
Wendy	64 (48-71)	84 (67-96)	97 (96-98)
Kenny	70 (45-85)	86 (81-100)	93
Ike	80 (66-89)	93 (79-100)	100
Timmy	76 (35-100)	95 (91-100)	91
Clyde	67 (42-86)	92 (91-93)	69

Section 6: Discussion

The purpose of this study was to expand the literature on ESPF as a form of communication between researcher and teacher and its effect on increasing the quantity and quality of praise statements. A previous study, Rathel et. al. (2014) had positive results on the effects of e-mail performance feedback on increasing BSP statements with pre-service teachers. This study expanded the literature on ESPF with teachers with at least 4 years of teaching experience. This study also expanded the literature on ESPF by not only focusing on frequency of BSP statements, but also on how BSP were delivered based on the teacher's voice inflection.

The results of this study showed a functional relation between the use of ESPF and increasing the quantity and quality of teacher's BSP statements for three of the four participants. This study showed three demonstrations of effect at three different points in time. The first participant had variable data but overall increased her rate of BSP statements. However, she left the study before establishing a stable therapeutic trend. She did increase voice inflection and remained over at least one-half of a standard deviation for 5 sessions. The second participant's frequency of BSP statements had an immediate level change following intervention and maintained a steady accelerating trend for the remaining sessions including her maintenance probes. Her voice range measured in htz increased steadily and stayed above her average probes by at least one-half of a standard deviation for 8 sessions. The third participant's frequency in BSP statements also had an immediate increase following intervention and showed a steady accelerating trend with the exception of session 24 where her frequency of BSP statements returned to probe condition levels, but then showed an increasing therapeutic trend the following 2

sessions. Her voice inflection range remained above one-half of a standard deviation compared to her probe data for 8 sessions. The fourth participant had an immediate level change and an accelerating therapeutic trend following intervention. Following intervention, her voice inflection range increased above half of her standard deviation compared to her probe condition averages for 3 sessions. One explanation for these results is that the teacher participants were attentive during the training sessions by asking questions and set goals for themselves. Another explanation could be that the teachers claimed that they read their e-mail feedback everyday which gave them goals to aim for and informed them about how often they were giving praise and what their voice inflection was. These results are similar to what Rathel et. al., (2014) found when giving ESPF to pre-service teachers. They showed a functional relation upon implementation of the teacher training and ESPF and an increase of BSP.

Every students' average task engagement increased after the intervention was implemented on their teachers. Increases ranged from 6% (Eric) to 25% (Clyde). The student identified with ADHD (Kenny) showed an increase of 16%. Though these are marginal increases in task engagement and the students' data were variable, there was an increase between probe and intervention averages. It is possible that an increase of BSP statements increased the target student's task engagement for a variety of reasons. One reason could be that the students saw the teacher giving praise to on task students and so they modified their behavior in order to receive praise. Another reason could be that they were receiving higher rates of praise for their on-task behavior and therefore continued to stay on task because they received teacher approval of their actions. These results are similar to those found in Allday et. al. (2012) when teachers increased their BSP, student

task engagement also increased. Rathel et. al., (2014) also saw an increase in student task engagement following increased of rates BSP.

Limitations

There were several limitations present in this study. The first limitation was the time constraint with Ms. Rose. There was not enough sufficient data collected from her to establish a clear therapeutic trend. Due to her due date of her pregnancy, she was no longer able to participate, which prevented from establishing a clear effect of the intervention for her. The second limitation was the voice monitoring software, which would record some background noise which would register on the recording software. The third limitation was that no pre-baseline assessments were conducted to determine if the student participants had low rates of task engagement. Many of the students had relatively high rates of task engagement during the probe condition, which might have been related to the fact that the teachers' perception of their task engagement was low even though in reality it did not appear to be so in this study. The fourth limitation of this study was that procedural fidelity was only collected for 75% of the teacher trainings. Ms. Rose's teacher training did not have procedural fidelity due to a time conflict and sudden change in the teacher's schedule that altered the ability of a co-observer to collect procedural fidelity. However, procedural fidelity was collected for the remaining teacher trainings with 100% accuracy. Also, no procedural fidelity was collected on the lead researcher's application of procedures of putting the armband on the teacher and turning the software on. Ms. Rose's teacher training did not have procedural fidelity due to a time conflict and sudden change in the teacher's schedule that altered the ability of a co-observer to collect procedural fidelity. However, procedural fidelity was collected for the

remaining teacher trainings with 100% accuracy. The fifth limitation was collecting IOA on student task engagement during unstructured transitions for Ms. Rose's class. There were times when the researcher and another observer were confused about what was considered on task behavior which caused a low rate of IOA. There was not time to rectify the low rates of IOA with Ms. Rose due to her leaving the study. The sixth limitation was that no IOA was collected for Ms. Blanche's voice recordings during the intervention condition. IOA was not able to be collected due to a time conflict with the faculty member who was collecting IOA data for the voice recordings.

Practical Limitations

One practical limitation is that the operational definition made some statements difficult to interpret. There were instances when the teacher would make a statement that sounded like behavior specific praise but could be considered too vague to be behavior specific (e.g., "Good listening ears").

Future Research

There are several components of this study that should be investigated further in future studies. First, researchers should test if the training had long-term effects on teacher and student behavior. It is possible that teachers may return to baseline levels after no longer receiving performance feedback and knowing that they are no longer being observed. Future studies should also investigate if measuring the teacher's voice inflection when giving BSP in hertz is an accurate and meaningful way to do so as well as testing if increased enthusiasm increases task engagement. Another consideration is to incorporate a social validity element such as teacher surveys or interviews, and self-reflection sessions so that researchers have a better idea of the teacher's perception on

how meaningful the intervention was to them. Future studies should incorporate a read receipt component to the ESPF to ensure that the teachers opened the e-mail. There is no way to enforce the teacher to read the e-mail, but knowing that the received it and opened it would strengthen the internal validity of ESPF. Another consideration for future studies is to implement the independent variable with paraprofessionals or teacher aids. During the classroom observations, the researcher noticed that very little praise was given from the paraprofessionals and it might be possible that they have not received training on BSP. Future studies should also consider examining the effects of BSP with older students and should also use longer observation sessions. Longer sessions may provide a more accurate depiction of how often BSP statements are given by the teacher and give better estimates of student task engagement.

Conclusions

This study concludes that ESPF can be a practical intervention to use with training teachers to increase their use of BSP and to improve their voice inflection while giving praise. Not only does it give the teacher specific feedback, but it can open a dialog between the researcher and the participant that is non-intrusive, simple, and creates a permanent product that the teacher can later reflect. This study also showed that BSP can be used as a possible intervention to increase student task engagement across various settings. However, student task engagement data were variable, but when comparing the overall averages of task engagement, this study saw an increase of task engagement when the teachers' frequency and quality of BSP increased. This study expanded BSP research by not only examining higher rates of BSP but also measured the quality of how BSP statements were given.

Appendix A: Example E-mail Specific Performance Feedback

Hi Ms. Sophia,

Fantastic job today! Here is the data I collected:

Frequency
General Praise (GP): 6
Behavior Specific Praise (BSP): 12
General Corrections (GC): 3
Behavior Specific Corrections (BSC): 5

 Your behavior specific praise statements increased by 5 compared to last session. Today was the highest count you have had so far. Great job! Your general praise statements were the same compared to last session. Your behavior specific corrections increased by 1 compared to yesterday. You did a really nice job finding opportunities to give Kenny praise when he was on task. Way to go!

Here is the range for today's observation
GP statements had an average range 328 of htz
BSP statements had an average range of 254 htz
BSC statements had an average range of 190 htz

Your range in GP increased significantly compared to the previous session. They sounded really enthusiastic. Your range in BSP statements increased slightly compared to the last session.

Kenny had 84% task engagement today and Ike had 98% task engagement today.

For next time, let's continue to focus on increasing the range and enthusiasm in your voice when giving behavior specific praise statements. See you tomorrow!

If you have any questions, feel free to email me.

Please respond to this email so I know you received it.

Thanks,

Kate

Appendix B: Student Task Engagement Data Sheet

Task engagement: student is orientated toward the appropriate person or item, following teacher directions, working on assigned work or ongoing activity.

Data Collector _____ Circle: Primary Reliability Date_____
S1_____ S2_____ Classroom_____

S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2

(+) = Occurred (On task)
(-) = Did not occur (Off task)   S1 _____% Occurred   S2_____% Occurred

Appendix C: Teacher Training Procedural Fidelity Data Sheet

Procedural Fidelity

Date_____   Data Collector_____

	Thanked Teacher for being willing to be a part of the study and for coming to the training
	Gave a brief overview of what the training will consist of
	Presented definitions of praise statements and verbal corrections
	Presented evidence based practice and review studies that support it
	Presented what affect and voice inflection of praise is
	Played voice recording examples
	Presented Baseline data
	Presented why we used the voice software
	Asked if they have any questions
	Presented e-mail performance feedback
	Set goals
	Allowed to ask any further questions
	Thanked them for their time

(+) Occurred
(-) Did not occur   _____% Occurred

References

Allday, R. A. (2011). Responsive management: Practical strategies for avoiding overreaction to minor misbehavior. *Intervention in School and Clinic, 46*(5), 292-298.

Allday, R. A., Hinkson-Lee, K., Hudson, T., Neilsen-Gatti, S., Kleinke, A., & Russel, C. S. (2012). Training general educators to increase behavior-specific praise: Effects on students with EBD. *Behavioral Disorders, 37*(2), 87-98.

Barton, E. E., & Wolery, M. (2007). Evaluation of e-mail feedback on the verbal behaviors of pre-service teachers. *Journal of Early Intervention, 30*(1), 55-72.

Cook, B. G., Cameron, D. L., & Tankersley, M. (2007). Inclusive teachers' attitudinal ratings of their students with disabilities. *The Journal of Special Education, 40*(4), 230-238.

Filcheck, H. A., McNeil, C. B., & Herschell, A. D. (2001). Types of verbal feedback that affect compliance and general behavior in disruptive and typical children. *Child study journal*, *31*(4), 225-249.

Forlin, C., & Chambers, D. (2011). Teacher preparation for inclusive education: increasing knowledge but raising concerns. *Asia-Pacific Journal of Teacher Education, 39*(1), 17-32.

Forlin, C., Loreman, T., Sharma, U., & Earle, C. (2011). Demographic differences in changing pre-service teachers' attitudes, sentiments and concerns about inclusive education. *International Journal of Inclusive Education, 13*(2), 195-209.

Freeman, J., Simonsen, B., Briere, D., & MacSuga-Gage, A. (2014). Pre-Service Teacher

    Training in Classroom Management. *Teacher Education and Special*

    Education, 37(2), 106-120

Gast, D.L. & Ledford, J.R. (Eds.). (2014). Single case research methodology:

    Applications in special education and behavioral sciences. New York: Routledge.

Grondin, S. (2008). Methods for studying psychological time. In S. Grondin

    (Ed.), *Psychology of time* (pp. 51-74). Bingley, United Kingdom: Emerald Group

    Publishing.

Hawkins, S. M., & Heflin, L. J. (2011). Increasing secondary teachers' behavior-specific

    praise using a video self-modeling and visual performance feedback

    intervention. *Journal of Positive Behavior Interventions, 13*(2), 97-108.

Haydon, Todd, & Musti-Rao, S. (2011). Effective use of behavior-specific praise: A

    middle school case study. *Beyond Behavior, 20*(2), 31-39.

Lepper, M., Keavney, M., & Drake, M. (1996). Intrinsic motivation and extrinsic

    rewards: a commentary on Cameron and Pierce's meta-analysis. *Review of*

    Educational Research, 66(1), 5-32.

Musti-Rao, S., & Haydon, T. (2011). Strategies to increase behavior-specific teacher

    praise in an inclusive environment. *Intervention in School and Clinic, 47*(2), 91-

    97.

O'Reilly, M., Renzaglia, A., & Lee, S. (1994). An analysis of acquisition, generalization

    and maintenance of systematic instruction competencies by preservice teachers

using behavioral supervision techniques. *Education and Training in Mental Retardation and Developmental Disabilities,* 29(1), 22-33.

Parsons, L., Miller, Heather, & Deris, Aaron. (2014). The Effects of special education training on educator efficacy in classroom management and inclusive strategy use for students with autism in inclusion classes, ProQuest Dissertations and Theses.

Plank, S. B., & Condliffe, B. F. (2013). Pressures of the Season: An examination of classroom quality and high-stakes accountability. *American Educational Research Journal, 50*(5), 1152-1182.

Rathel, J. M., Drasgow, E., Brown, W. H., & Marshall, K. J. (2014). Increasing induction-level teachers' positive-to-negative communication ratio and use of behavior-specific praise through e-mailed performance feedback and its effect on students' task engagement. *Journal of Positive Behavior Interventions, 16*(4), 219-233.

Rathel, J. M., Drasgow, E., & Christle, C. C. (2008). Effects of supervisor performance feedback on increasing preservice teachers' positive communication behaviors with students with emotional and behavioral disorders. *Journal of Emotional and Behavioral Disorders, 16*(2), 67-77.

Reinke, W., Lewis-Palmer, T., & Martin, E. (2007). The effect of visual performance feedback on teacher use of behavior-specific praise. *Behavior Modification, 31*(3), 247-263.

Ryan, R. M., & Deci, E. L. (1996). When paradigms clash: comments on Cameron and

    pierce's claim that rewards do not undermine intrinsic motivation. *Review of*

    Educational Research, *66*(1), 33-38.

Sharpe, T., So, H., Mavi, H., & Brown, S. (2002). Comparative effects of sequential

    behavior feedback and goal setting across peer teaching and field based practice

    teaching. *Journal of Teaching Physical Education, 21*, 337-360.

Spence, S. H. (2003). Social skills training with children and young people: theory,

    evidence and practice. *Child and Adolescent Mental Health, 8*(2), 84-96.

Sutherland, K. (2000). Promoting positive interactions between teachers and students

    with emotional/behavioral disorders. *Preventing School Failure, 44*(3), 110-115.

Sutherland, K. S., Wehby, J. H., & Copeland, S. R. (2000). Effect of varying rates of

    behavior- specific praise on the on-task behavior of students with EBD. *Journal*

    of Emotional and Behavioral Disorders, *8*, 2-8.

U. S. Department of Education. (2016). *2015-2016 IDEIA Part B child count and*

    settings. Retrieved from

    https://www2.ed.gov/about/offices/list/osers/osep/index.html

Van Acker, R., Grant, S. H., & Henry, D. (1996). Teacher and student behavior as a

    function of risk for aggression. *Education and Treatment of Children*, *19*, 316-

    334.

Vogel, A. P., Maruff, P., Snyder, P.J., & Mundt, J.C. (2009). Standardization of pitch

    range setting in voice acoustic analysis. *Behavioral Research Methods, 41*, 318-

    324.

Yeung, A. S., Craven, R. G., Mooney, M., Tracey, D., Barker, K., Power, A., & Lewis, T. J. (2015). Positive behavior interventions: The issue of sustainability of positive effects. *Educational Psychology Review, 28*(1), 145-170.

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