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Effects of Behavioral Skills Training on Teachers Conducting the Recess-to-Classroom

Transition

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Abstract

Elementary school teachers transition their students from recess to the classroom multiple times a day. When students do not line up quickly or are disruptive in line, teachers can spend valuable instructional time trying to manage students' inappropriate behaviors. The result is a loss of instructional time that could lead to a decrease in student performance. This study examined how teachers could use behavioral skills training with their students as a way to reduce the length of the recess-to-classroom transition with second – fourth graders. After teachers were trained, they provided their students with training, which included instruction, modeling, rehearsal, and feedback. The result in each teacher's classroom was that students began to line up more quickly and use their hands and feet appropriately for the duration of the transition. Appropriate behavior and reduced transition times maintained at a 2-week follow-up.

Keywords: transitions, recess, behavioral skills training, teacher training, student training

Effects of behavioral skills training on teachers conducting

the recess-to-classroom transition

Although teachers are expected to manage their students' behavior, they often report that

classroom management is the area in which they feel the least qualified and where they receive

the least amount of training (Barrett & Davis, 1993; Ingersoll, 2002; Reinke, Stormont, Herman,

Puri, & Goel, 2011). One point during the school day in which there is a high potential for

disruptive behavior is during transitions: when students are expected to shift from one activity to

another. Whether students are lining up or rotating between centers or preparing to go home,

transitions can result in loss of instructional time as teachers try to manage students'

inappropriate behaviors. As such, helping teachers decrease transition times seems like an

appropriate target for intervention (Yarbrough & Skinner, 2004).

One transition that can be particularly difficult is when elementary students are required

to move from recess, which typically takes place out-of-doors on a playground,to the classroom

(Lewis, Powers, Kely, & Newcomer, 2002). This transition presents a unique challenge because

it (a) typically requires use of an outside signal (e.g,. a bell or whistle) to gather the students, (b)

occurs frequently (as often as three times a day in some schools), and (c) can be long in duration

due to its complexity and distance, depending on the physical design of the school (e.g., moving

students from outside, to the hall, and then to the classroom for a school with interior hallways).

The loss of instructional time each day due to inefficient transitions may lead to decreases in

student performance (Gage, Scott, Hirn, & MacSuga-Gage, 2018). Thus, strategies that allow

teachers to transition their students quickly and smoothly may help them to maximize

instructional time.

Current literature has offered some consistent guidelines about classroom transitions (e.g., Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008). First, teachers are often directed to clearly instruct the students on how the transition should look (Buck, 1999; Hemmeter, Ostrosky, Artman, & Kinder, 2008; Smythe, 2002). Another common recommendation is that the teacher allow the students to practice the behavior multiple times (Buck, 1999; Hovland, 2008; Thelen & Klifman, 2008). Finally, relevant literature details the importance of giving students specific feedback as they transition (Buck, 1999; Hovland, 2008; Rosenkoetter, 1986). The combination of these recommendations—instruction, practice, and feedback—closely resembles a behavior analytic training package named behavioral skills training (BST). BST is a behavior analytic teaching method that involves the use of instructions, modeling, rehearsal, and feedback in order to teach a skill or set of skills (Poche, Brouwer, & Swearingen, 1981). While there is some variation in the use of BST across studies, these four components are usually present in some form. Training using BST also continues until a pre-defined performance criterion is met, rather than for a pre-determined period of time (Dib & Sturmey, 2012).

The use of BST as an effective method for improving student behavior is well documented in systematic reviews (e.g., Kirkpatrick, Akers, & Rivera, 2019). Among the skills that have been taught to children via BST are pedestrian-safety skills (Yeaton & Bailey, 1978), fire-safety skills (Jones, Kazdin, & Haney, 1981), gun-safety skills (Himle, Miltenberger, Gatheridge, & Flessner, 2004), abduction-prevention skills (Johnson et al., 2005), and response-to-signal skills (Beaulieu & Hanley, 2014). In each of these studies, students' performance increased significantly *and* rapidly when BST was implemented.

Several studies have also shown that BST can also be used to train caregivers. Such research has included training special educators to conduct mand training (Nigro-Bruzzi &

Sturmey, 2010) and discrete-trial teaching (Sarokoff & Sturmey, 2004); training

paraprofessionals to use data to inform decisions (Matthews & Hagopian, 2014) and to

implement prompting strategies (Toelken & Miltenberger, 2012); training undergraduate

students to conduct functional analyses (Iwata et al., 2000); and training caregivers to implement

guided compliance (Miles & Wilder, 2009). Again, each study showed substantial

improvements in caregivers' skills when BST was the instructional approach.

The current research therefore demonstrates that BST can produce skill acquisition in

staff *and* students. Present literature further recommends using features of BST in training for

transitions (Buck, 1999; Hovland, 2008; Rosenkoetter, 1986; Thelen & Klifman, 2008), but it

has not been tested in any systematic way. Thus, research is needed in relation to how the BST

method could improve the recess-to-classroom transition. The purpose of the current study was

to use BST in order to train teachers to conduct the recess-to-classroom transition, who in turn

used BST in order to teach their students to complete the recess-to-classroom transition.

Method

Setting

The study was conducted at an urban elementary school that accommodated

approximately 600 students and was located in the western region of the U.S. Training for the

teachers took place in their individual classrooms, and role play and rehearsal with teachers

extended to the playground. Training for students initially took place on the playground, an area

that was equipped with jungle gyms, swing sets, a soccer field, and a blacktop area. Students

also moved through the hallway, though hallway length varied depending on the distance from

the recess doors to each classroom (range 6 m-10 m).

Participants

Participants included two groups: the teachers and the students. Three teachers participated in the study: a fourth grade teacher, Josie with 8 years teaching experience; a third grade teacher, Demi with 5 years teaching experience, and a second grade teacher, Amber with more than 30 years teaching experience. All three teachers held bachelor's degrees.. Two of the teachers had been at the school for at least five years and the third had taught at the school for three years. Teachers were recruited based on their desire to reduce transitional times and their willingness to complete the training when individually invited by the first author (hereafter, the researcher), who was also a teacher at the target school. Teachers were excluded if they had any previous exposure to BST. Teachers were provided with a $25 gift card from a local grocery store at the completion of training.

Students were in the second, third, or fourth grade and included both male and female students between 7 – 10 years of age. All spoke English as a first or second language, and each class contained 20 – 30 students.

Dependent Variables and Response Measurement

For teachers, the primary dependent variable (DV) was the extent to which they used BST in order to teach their students how to transition from recess to the classroom. This was measured by the percent of steps that teachers correctly implemented according to a task analysis. This task analysis specified the steps that teachers should follow within each BST category (instruction, modeling, rehearsal, feedback) as they taught their students how to transition. Teachers implemented the entire BST sequence, described below, during the first recess session following completion of baseline and the teacher training. In subsequent sessions, teachers implemented only the praise and corrective feedback components of the BST package. The researcher used data sheets based on the task analyses appropriate to the two different kinds

of sessions. The task analyses were in the form of a checklist (available from the corresponding author) and were marked "+" (followed the step completely), "-" (did not follow the step in some way), or "N/A" (step not applicable). The checklists were scored by dividing the number of steps scored "yes" by the total number of "yes" and "no" steps possible and multiplying by 100. Some components, like corrective feedback, were not scored in some sessions because student behavior did not necessitate the use of corrective feedback. Thus, the total number of possible steps varied somewhat from session to session based on student performance. The researcher was the primary data collector and used a clipboard, paper, and pencil to measure this behavior.

As a secondary dependent variable, we also measured the amount of time that it took for students to transition from recess to the classroom, as measured by the duration of the transition. Transitional time was defined as beginning when the teacher gave the signal to line up (e.g., blew the whistle) and ending when the final student crossed the threshold into the classroom. We used a stopwatch to facilitate timing, and the researcher followed from 1 – 2 m behind the teacher and to the side of the students in order to collect these data.

Interobserver Agreement (IOA). A second independent observer, an undergraduate research assistant, collected data on the DVs during a portion of the baseline sessions, for the primary training session with each teacher, and every third session thereafter, which resulted in IOA for 42% of sessions. Agreement for the task analyses occurred when the responses on each step was scored the same between observers (i.e., both scored "yes," both scored "no," or both scored "N/A"). Percent agreement was calculated by dividing the total number of agreements by the total steps possible and multiplying by 100. The overall IOA score for the task analyses was 99% (range 98-100%). Agreement for the duration of a transition was calculated by dividing the shorter of the two durations reported by the two observers by the longer duration (in seconds)

and multiplying by 100. The IOA score for the duration of the transitions was 98% (range 97-100%).

Treatment Integrity (TI). To assess TI of the primary researcher's behavior during BST training of teachers and subsequent experimental sessions, the undergraduate research assistant also recorded the occurrence of the critical components of the teacher training procedure. Using a checklist, she marked whether the researcher (a) provided the teacher with a written copy of the task analysis, (b) explained each step on the task analysis vocally, (c) modeled the BST procedure by showing the teacher a video of the procedure being used, (d) allowed opportunities for the teacher to rehearse each step of the skill, and (e) provided the teacher with feedback that was immediate, specific, positive and/or corrective for each step. This observation occurred during each teacher's primary training session. To generate a percentage of the researcher's accurate implementation of the BST protocol with teachers, the number of correctly implemented steps was divided by the total steps possible and multiplied by 100. The TI score in each case was 100%.

Experimental Design and Procedures

A non-concurrent multiple baseline design across teachers was used to evaluate the effects of BST on the recess transition. Baseline sessions began on Feb 29 for Josie, Mar 15 for Demi, and Mar 24 for Amber. Initial teacher training sessions took place on Mar 5 for Josie, Apr 2 for Demi, and Apr 16 for Amber. . We observed each teacher for one lunch recess per day, and, when stable responding was achieved in baseline, we then trained the teacher to use the BST sequence. Following this training, the teacher used BST in order to show her students how to transition appropriately from recess to the classroom.

Baseline. The baseline condition entailed the researcher observing the participating

teachers and their students transitioning from lunch recess to the classroom each day. Teachers

were directed not to change their line-up routine in any way, and the researcher scored (a) the

extent to which teachers already used any components of BST with their students during the

transition and (b) the duration of the transition. After stable baseline data were obtained for each

teacher, her training began.

       Teacher Training. In each case, the researcher, interobserver, and individual teacher

met for three hours on a Saturday for training. The first hour and a half was spent in instruction,

wherein the researcher described each component of BST and taught teachers the acronym

TEMPO (tell expectations, model, practice, offer feedback) as a way to condense and remember

these expectations. The researcher also described how to offer praise and corrective feedback to

both the whole class and individual students. The researcher then provided the teacher with a

task analysis that listed the steps the teacher should follow when training the students to

transition from recess to the classroom. The researcher provided the task analysis in written

format and explained it vocally.

       After explaining the task analysis, the researcher showed each teacher a video model of

first grade students being trained to complete the transition by the researcher using BST. This

video was taken at the same school where the teachers worked and showed the researcher

training a class of first graders to respond to the outside signal. The video was approximately 13

min long and did not include instructional text or voice-over instruction. Our initial plan was to

have each teacher view the video twice: first as an overview and then to compare it against the

task analysis. During the second viewing, teachers were asked to place a check mark on the task

analysis next to each component as it was demonstrated to facilitate the teacher paying attention

to each required step. However, while training the first teacher, we noticed that watching the

video without scoring appeared to be an unnecessary step. So, the second and third participants only watched the video once while scoring using the task analysis.

Following instruction and modeling, each teacher practiced training a small group of students (7 – 8) to line up at the actual playground setting. These students ranged in age from 7-10 and were the researcher's former first grade students. They were selected based on their previously demonstrated ability to follow directions quickly, their continued enrollment at the school of study, and their willingness to participate. These "practice" students had prior exposure to BST and were provided with pizza after each training session as a reward for their participation. With the students, teachers completed a total of five trials: three coaching and feedback trials that were not scored where the researcher provided assistance and positive/corrective feedback to the teacher and two test trials without coaching to verify that the teachers could implement BST procedures without assistance with the practice students.

On the first coaching trial, the researcher instructed the students to respond according to the teacher's instructions (i.e., no problem behavior) in order to familiarize the teacher with the BST approach and to provide her with a chance to practice praising students for meeting the expectations. Students were explicitly told that they had been selected to participate in the study because of their advanced ability to follow directions, and a vocal contingency was created that each of them would have a chance to be the "naughty student" if they were willing to do exactly as directed by the researcher and follow the scripts provided by the researcher. All of the students were eager to comply, and none of the students engaged in any off-script behavior.

During the second coaching trial, the researcher instructed 1 – 2 students to engage in the anticipated forms of problem behavior (e.g., lining up slowly, talking to each other during the transition, touching other students with their hands or feet, etc.) when the teacher gave the recess

signal (i.e., blew the whistle). This was designed to simulate a real class, wherein some students always meet a teacher's expectations and others require corrective feedback. The researcher informed the students in the presence of the teacher what type of problem behavior they would exhibit for each trial and also instructed the students to respond to the teacher's corrective feedback on her first prompt. We did not provide practice students with specific scripts to follow to engage in particular problem behaviors at particular times. Rather, we provided them with general verbal instructions about how to behave and this was sufficient to produce high enough levels of problem behavior for the teachers to correct during practice trials.

During the third coaching trial, some students again met every expectation while 1 – 2 students engaged in problem behavior. In this trial, however, one of the students was instructed not to respond to the teacher's prompt to correct the behavior so that she could practice offering individual BST to a student until he or she met the expectations. This meant that while the other students had a "real recess" (i.e., they were released to play for a few minutes), the teacher had to continue providing one student with rehearsal and feedback until the expectations (hands and feet to self, mouth quiet, come immediately when the whistle blows) were met with 100% accuracy twice consecutively. Practice students were instructed to comply with all teacher directions after receiving individual BST. In this way, each trial became incrementally more difficult and allowed the teacher to practice giving praise and corrective feedback to both individuals and the group.

In the test trials, the researcher and undergraduate research assistant scored the teacher's performance as she performed BST without coaching/prompting. Students acted as before: some meeting every expectation and 1 – 2 engaging in problem behavior as instructed by the researcher. In the first test trial, students exhibiting problem behavior were instructed to comply

with all teacher instructions to change the behavior on the first prompt. In the second test trial, students exhibiting problem behavior were instructed to comply with all teacher instructions on the first prompt except for one student, who was instructed not to comply. This gave the researcher the opportunity to score each teacher's ability to provide individual BST when expectations were not met.

At the end of each test trial, the researcher and undergraduate research assistant showed the teacher her score, and the researcher provided the teacher with praise and corrective feedback. When the scores between the researcher and undergraduate research assistant, the discrepancy was noted. The teacher was also invited to ask questions. Even with the occasional difference in scores, the researcher and undergraduate research assistant still calculated a final score greater than 90% in the test trials. These test trials were conducted until the teacher performed at 90% accuracy or greater on the task analysis for two consecutive trials, and none of the teachers required more than two trials in order to demonstrate proficiency. (Josie's average performance score was 95% [test trial 1: 93%; test trial 2: 96%]; Demi's average performance score was 99% [test trial 1: 98%; test trial 2: 100%]; and Amber's average performance score was 95% [test trial 1: 96%, test trial 2: 94%].). Teachers were informed of their scores following each test trial.

In total, the student training took approximately one hour to complete. Practice students were at the school for an hour and a half in order to give them time to have pizza together after the training concluded.

Student Training. BST of the teacher's actual students took place on the Monday following the Saturday session. This training took place in the morning before other classes came outside in order to allow students to more easily hear their teacher's instructions and to

prevent other participating classes from overhearing the training. As had occurred in the

Saturday training, the researcher scored the teacher's use of BST against the task analysis. BST

began with instruction, wherein the teacher took the students outside to the designated line-up

area and reminded them what her end-of-recess signal sounded like (e.g., a whistle). She then

stated the expectation that at this signal, students should (a) immediately come to the designated

line-up area and (b) stand in line with their mouths closed and (c) keep their hands and feet still

and to themselves.

Following this instruction, the teacher chose a student model to demonstrate these

behaviors. The student was instructed to pretend to play on a nearby piece of recess equipment

until the signal was given 5 – 10 s later. As the student responded to the signal, the teacher

vocally described and praised the demonstrated behavior: "Notice how Eliza heard the whistle

and started running to line up. Now she is standing in line with her mouth closed and her hands

and feet to herself. That was perfect!"

The teacher served as the next model and showed the students what *not* to do when the

signal was given. The teacher then went to the same equipment that the student model used and

played for 5 – 10 s before telling the students, "Pretend I hear the whistle!" At this point she

blew the whistle but continued to play for 5 – 10 s before moving slowly to the designated line-

up area. She then asked students to identify what she did wrong (came slowly when the signal

was given), and she reminded them that the expectation was to move as quickly as possible when

they heard her signal.

The teacher then directed the students to watch as she showed them what else they should

not do. The teacher returned to the previous equipment, played for 5 – 10 s, and gave the signal.

This time, she moved quickly to the designated line-up area but made several noises (e.g.,

laughing, shouting) and moved her hands and feet inappropriately once there (e.g., jumping, touching others). She then asked the students to identify what she did wrong (made noises and used her hands and feet disruptively), and she reminded them that the expectation was to stand in line with mouths closed and hands and feet still. The modeling portion of the training concluded with the teacher selecting and praising another student who demonstrated meeting these expectations.

After modeling came the practice and feedback portions of the training. The teacher told the students that they were going to practice lining up, and she directed the students to "pretend to play" before giving the recess signal 5 – 10 s later. As students moved to line up, the teacher provided individual and group praise to students who met the expectations (e.g., "Jonah, nice job standing quietly. Kaitlin has hands/feet to self"). She also offered individual and group corrective feedback, centered around the three primary expectations, to students who did not meet the expectations (e.g., "Jessie, I need your hands and feet to yourself".).

Rehearsal and feedback continued for two more rounds, and students who met the line-up expectations by the last round were given an actual recess. Any student who did not respond appropriately remained with the teacher in order to receive individualized feedback and practice.

At the conclusion of the recess, the teacher gave the recess signal and offered praise and corrective feedback to the students as they lined up. Before taking them into the school, she instructed students that their mouths should remain closed and that they should continue to keep their hands and feet to themselves in the hallway. When the last student crossed the threshold into the classroom, the transition was concluded.

The teacher only implemented this entire BST sequence during the first training session with the students. Thereafter, she maintained students' appropriate behavior through the use of

praise and corrective feedback, as it would not be feasible or necessary to explain, model, and

practice line-up behavior at each recess (the full BST training sequence had a duration of

approximately 10 min). When praising, each teacher was directed to provide at least three praise

statements to individual students and three praise statements to the group for appropriate

behavior and data were collected on each of these responses.

When correcting, teachers were directed to provide students with brief and specific verbal

instructions of which specific behaviors needed to be changed. If students did not respond to

brief verbal corrections, teachers asked students to return to the outside doors and practice

meeting expectations of walking quietly down the hall. If students did not respond to this request

to demonstrate the desired behavior, teachers were instructed to complete the entire BST

sequence again during a time when the other students were engaged in a preferred activity (most

likely the next recess). This did not prove necessary with any of the students, however. In fact,

only two students in Demi's class failed to respond to the brief verbal corrections (once each on

two separate days) and were required to return to the outside doors and demonstrate the

appropriate transition behaviors that had been taught.

After the teacher's initial training, the researcher used a separate data sheet in order to

score the teacher's use of the praise and correction components of BST, not only as students

lined up outside, but also as they moved through the hallway to the classroom. As teacher

participants had immediate teaching responsibilities at the end of each recess transition, this data

sheet was shown to the teacher at the conclusion of each day, and the teacher was given praise

and corrective feedback for her performance.

Maintenance. A single maintenance probe was conducted for two of the three teachers in

the two weeks following intervention. The researcher scored the extent to which the teacher

correctly used feedback as a way to elicit appropriate student responding as well as the duration

of the students' transition. Additional maintenance data were not obtained due to the end of the

academic year and the ensuing loss of access to both teacher and student participants.

Results

In baseline, teachers used very few components of BST in order to have their students

line up from recess (range 0-33%). Of the three teachers, only the third ever specifically directed

the students to stand quietly in line and to move quietly through the halls. Anecdotally, the other

two teachers largely ignored disruptive behavior except to occasionally say "shh" to the group.

The majority of students in each class were also, anecdotally, observed to be disruptive outside

and in the hallway as they completed the transition.

Some students in each class also responded slowly to the recess signal, and none of the

teachers attempted to change the behavior. Rather, they simply waited while all the students

came to the line. There were some students in each class, however, who lined up at the signal,

moved quietly in line, and kept their hands and feet to themselves during the transition. Only the

third teacher, however, provided any praise to the students for appropriate responding (one praise

statement in nine days of baseline); the other two teachers provided no praise in baseline for

students' appropriate responding. Thus, students as a whole did not consistently line up quickly,

move quietly in line, or use hands and feet appropriately. All of these behaviors led to the

outcome that for each class, the transition from recess to the classroom was lengthy, requiring as

much as four times the amount of time shown possible in treatment (approximately 5 min for

Josie and Demi and 3 min for Amber).

The data for the percentage of BST components implemented are presented in Figure 1.

The first teacher, Josie, implemented an average of 7% of BST steps in baseline (range 0-9%).

Her score immediately increased following the BST training to 98% correct when she performed

BST with her actual students. During this training, all fourth graders complied with Josie's

instructions the first time, except for two students who continued to be disruptive in line (e.g.,

whispering, giggling). Upon completion of the whole-class training, Josie released all students

to recess except for these two, who had to practice the line-up behaviors until they met the

expectations twice consecutively. During these additional trials, both students followed her

directions the first time and were released to recess after two trials. After this initial student

training, Josie implemented the feedback steps with 100% accuracy. A maintenance probe two

weeks later showed that Josie still performed the feedback steps of the task analysis at 100%

accuracy.

Data for the second teacher, Demi, are presented in the second panel of Figure 1. Demi

implemented an average of 9% of BST steps in baseline (range 0-18%), and her performance

also immediately increased to 98% of BST steps following training when she performed BST

with her actual students. During this training, all third graders complied with Demi's

instructions the first time, and no students had to complete individual trials before being released

to recess.

After the initial full-sequence training, Demi implemented the feedback steps with 94%

accuracy (range 80-100%). In the two sessions that account for the variable data (80% and

83%), Demi gave two students corrective feedback about their disruptive behavior but did not

require further practicing when the students did not comply with her instructions. During a

feedback session following the second disruptive instance, the researcher reminded Demi to

respond to disruptive behavior swiftly (<5 s) and to require students' further practice if

necessary. After this feedback, Demi required individual practice of two students, and both

students responded to Demi's instructions to practice the behavior as expected. After this,

Demi's scores improved to 100% accuracy on the task analysis, and a maintenance probe two

weeks later showed that Demi again performed the feedback steps of the task analysis at 100%.

The third panel of Figure 1 shows data for the third teacher, Amber. In baseline, she

implemented an average of 20% of BST steps (range 8-33%). Following training, her accuracy

immediately improved to 98% when she performed BST with her actual class. During this

student training, all of Amber's second grade students complied with her instructions the first

time, and individual practice was not required.

After the initial full-sequence training, Amber implemented the feedback steps with 96%

accuracy (range 83-100%). Because Amber's second graders always met her expectations or

responded to her corrective feedback on the first prompt, none of the students ever required any

individual practice during treatment. Amber declined having a maintenance probe conducted,

however, because it was nearing the end of the school year, and she did not want to require

"perfection" of her students in their final weeks of class.

Figure 2 shows data for the duration of each recess-to-classroom transition. The first

panel shows that it took Josie's fourth grade students an average of 5:08 min to transition from

recess to the classroom (range 4:22-5:36 min). After training, it took Josie's students an average

of 1:47 min to transition from recess to the classroom (range 1:23-1:55 min). In total, this meant

that Josie gained an average of 3:21 min/day during the lunch recess transition, or 16:45

min/week. A maintenance probe taken two weeks after treatment showed that Josie

implemented the BST steps with 100% accuracy and that her students still completed the

transition quickly (1:31 min).

The second panel of Figure 2 presents data for the second teacher, Demi. These data

show that in baseline, the third graders took an average of 5:02 min to transition from recess to

the classroom (range 4:03-6:39 min).   After training, it took Demi's students an average of 2:34

min to transition from recess to the classroom (range 2:12-3:01 min). A maintenance probe

taken two weeks after treatment showed that Demi's students still completed the transition

quickly (2:13 min). Overall, this meant that Demi gained an average of 2:28 min/day during the

lunch recess transition, or 12:20 min/week.

The third panel of Figure 2 shows data for the third teacher, Amber. In baseline, it took

her students an average of 3:16 min to complete the transition (range 2:25-4:11 min). After

training, it took Amber's second grade students an average of 2:15 min to complete the transition

(range 1:56-2:41 min). Overall, this meant that Amber gained an average of 1:01 min/day during

the lunch recess transition, or 5:05 min/week. Although the amount of time this teacher gained

was less than the gains of the other two teachers, it still represents a 31% increase over baseline

levels.

<p style="text-align:center">Discussion</p>

The present study contributes to the current literature on BST by empirically showing

that BST can be used to reduce transitional times for 2nd – 4th grade general education students.

Results showed that after training, teachers effectively used BST in order to teach their students

to transition quickly and quietly from recess to the classroom. Specifically, teachers provided

explicit instruction, modeled the appropriate and inappropriate behavior, and implemented

rehearsal sessions that were coupled with specific praise and corrective feedback. Teachers were

also able to use praise and corrective feedback at the expected level (at or above 90%

proficiency) in order to maintain student responding after the initial training. Finally, in both

classes where a maintenance probe was taken, teachers continued to perform the feedback

sequence with 100% accuracy.

It is significant that each teacher performed at these high levels of proficiency after only a single training session. Although teachers were told to plan on a 3-hour session, each teacher was actually only there for 2.5 hours because they were given the choice to leave during the last half hour when the students were eating pizza (which each chose to do). This time could have been even further reduced by requiring only two assisted trials before commencing the scored trials, as each teacher had reached proficiency within two assisted trials. Even so, each teacher also reached proficiency within the minimum number of assisted trials (three), and short, daily feedback sessions (5 min) sufficiently targeted any lapse in teacher performance. These results indicate that BST was therefore an efficient method of improving teacher behavior.

Teachers, in turn, were able to change their students' behavior. After only a single, brief (15 min) training session, the majority of students in each class began to line up quickly, keep their hands and feet to themselves, and move quietly for the duration of each transition. Only two teachers (Josie and Demi) ever had to require individual practice of any students, and both maintenance probes showed that students continued to complete the transition quickly (Figure 2) and quietly. The overall result of this improvement was that the duration of the transitions from recess to the classroom decreased, allowing teachers to spend more time on instruction.

One potential limitation of the current study is that, in between the final baseline session and the implementation of the BST intervention with the student participants, without consulting with the researchers, two of the three teachers made a change in the students' bathroom schedule and did not allow them to use the restroom after recess (as they had done in baseline). Instead, students were asked to take this break on their own time before heading outside. Even though this change only affected a few students in each class, this could have contributed to the decrease

in transitional time that was shown in Josie's and Demi's classes. Anecdotally, we noticed

during baseline that even when students exited the bathroom, several other students were still in

the hall visiting and standing around. Thus, the change in the bathroom schedule did not seem to

inflate the duration of the transitions during baseline. Nevertheless, the secondary data on

transition time duration data for these two classrooms should be interpreted with caution because

of this potential confound.

Another limitation of the current study is the absence of a social validity measure. As the

study required that teachers complete a 3-hour training on a Saturday, it would have been helpful

to know the extent to which teachers felt this requirement was worth the benefit of reduced

transition times. It may also have been helpful to collect social validity data from the students, as

it seemed they enjoyed the training (e.g., laughing when the teacher modeled inappropriate

behavior; smiling when they were praised for appropriate behavior) and the actual transitions

(e.g., running to line up; responding to correction swiftly). Also valuable would have been a

rating of students' appreciation about the faster transitions.

The fact that the BST intervention was delivered as a package could also be considered a

limitation. It is possible to individual parts of the package (e.g., verbal instructions alone) could

have produced similar results. Future researchers may wish to investigate the individual effects

of the components of the BST package.

Finally, beyond recording the duration of each transition, it may have been useful to track

students' disruptive behavior, as this was the component that determined whether each teacher

engaged another sequence of BST. These data were not collected in the current study, however,

because the large class sizes (20 – 30 students) made it highly unlikely that individual

disruptions could be consistently captured and accurately scored, especially while the researcher

was scoring the teacher's behavior. While videotaping transitions may have allowed for a more fine-grained analysis of student behavior, we chose not to videotape sessions because concerns of reactivity and due to the presence of other students from the school in the playground area.

Future research in this area could investigate the extent to which BST is an effective method for teaching students to complete other transitions. Although the recess-to-classroom transition is arguably one of the longest transitions in the school day, classroom and within-school transitions also have the potential to evoke off-task behavior and reduce instructional time. It may also be useful to investigate the number of exemplars required before teachers begin to generalize the use of BST to other relevant areas (e.g., how to line up for lunch, how to act at an assembly). Although each teacher received a relatively intense exemplar in the present study, only one of the teachers (Josie) noted that BST could be used to target other problems her students were having in the classroom (e.g., how to turn in papers). The other two teachers did not appear to draw this conclusion; thus, research to investigate teachers' generalization skills may be valuable.

In summary, BST was shown to be an effective method for training both general education teachers and students in an elementary school setting to complete a lengthy transition during the school day. Although teachers required an extended exemplar before they reached proficiency, all of them were able to reduce the length of their students' transition from recess to the classroom. This, in turn, allowed them to spend more time on instruction, which could improve their students' academic performance.

References

Barrett**,** E. R., & Davis, S. (1993). Perceptions of beginning teachers' needs in classroom

management. *Teacher Education and Practice, 11*, 22–27. Retrieved from

http://search.ebscohost.com.dist.lib.usu.edu/login.aspx?direct=true&db=eric&AN=EJ509

256&site=ehost-live

Beaulieu, L., & Hanley, G. P. (2014). Effects of a classwide teacher-implemented program to

promote preschooler compliance. *Journal of Applied Behavior Analysis, 47*(3). 594-599.

https://doi.org/10.1002/jaba.138

Buck, G. L. (1999). Smoothing the rough edges of classroom transitions. *Intervention in School

and Clinic, 34*(4), 224-227. doi: 10.1177/105345129903400406

Dib N., Sturmey P. (2012) Behavioral Skills Training and Skill Learning. In: Seel N.M. (eds)

Encyclopedia of the Sciences of Learning. Springer, Boston, MA

Gage, N. A., Scott, T., Hirn, R., & MacSuga-Gage, A. S. (2018). The relationship between

teachers' implementation of classroom management practices and student behavior in

elementary school. Behavioral Disorders, 43, 302-315. doi: 10.1177/0198742917714809

Himle, M. B., Miltenberger, R. G., Gatheridge, B. J., & Flessner, C. A. (2004). An evaluation of

two procedures for training skills to prevent gun play in children. *Pediatrics, 113*(1), 70-

77. doi:10.1542/peds.113.1.70

Hovland, M. (2008). GRR to conquer classroom management. New Teacher Advocate, 4-5.

Retrieved from

http://search.ebscohost.com.dist.lib.usu.edu/login.aspx?direct=true&db=eue&AN=34517

540&site=ehost-live

Ingersoll, R. M. (2002, August 15). High turnover plagues schools. *USA Today*, p. 13A.

    Retrieved from https://login.dist.lib.usu.edu/login?url=https://search-proquest-

    com.dist.lib.usu.edu/docview/408902750?accountid=14761

Iwata, B. A., Wallace, M. D., Kahng, S., Lindberg, J. S., Roscoe, E. M., Conners, J. Worsdell, A.

    S. (2000). Skill acquisition in the implementation of functional analysis methodology.

    Journal of Applied Behavior Analysis, 33(2), 181-194.

Kirkpatrick, M., Akers, J., & Rivera, G. (2019). Use of behavioral skills training with teachers: A

    systematic review. Journal of Behavioral Education, 28, 344-361. doi: 10.1007/s10864-

    019-09322-z

Lewis, T. J., Powers, L. J., Kely, M. J., & Newcomer, L. L. (2002). Reducing problem behaviors

    on the playground: An investigation of the application of schoolwide positive behavior

    supports. *Psychology in the Schools, 39*(2), 181-190. https://doi.org/10.1002/pits.10029

Matthews, K., & Hagopian, L. (2014). A comparison of two data analysis training methods for

    paraprofessionals in an educational setting. *Journal of Organizational Behavioral*

   *Management, 34*(2), 165-178. doi:10. 1080/01608061.2014.912974

Nigro-Bruzzi, D., & Sturmey, P. (2010). The effects of behavioral skills training on mand

    training by staff and unprompted vocal mands by children. *Journal of Applied Behavior*

    Analysis, 43(4), 757-761. https://doi.org/10.1901/jaba.2010.43-757

Poche, C., Brouwer, R., & Swearingen, M. (1981). Teaching self-protection to young children.

    Journal of Applied Behavior Analysis, 14, 169-176. https://doi.org/10.1901/jaba.1981.14-

    169

Reinke, W. M., Stormont, M., Herman, K. C., Puri, R., & Goel, N. (2011). Supporting children's

mental health in schools: Teacher perceptions of needs, roles, and barriers. *School

Psychology Quarterly, 26*, 1–13. doi:10.1037/a0022714

Rosenkoetter, S. (1986). Teaching mainstreamed children to manage daily transitions. *Teaching

Exceptional Children, 19*(1), 20-23. https://doi-

org.dist.lib.usu.edu/10.1177/004005998601900104

Sarokoff, R. A., & Sturmey, P. (2004). The effects of behavioral skills training on staff

implementation of discrete-trial teaching. *Journal of Applied Behavior Analysis, 37*(4),

535-538. https://doi.org/10.1901/jaba.2004.37-535

Simonsen, B., Fairbanks, S., Briesch, A., Myers, D., & Sugai, G. (2008). Evidence-based

practices in classroom management: Considerations for research to practice. *Education

and Treatment of Children, 31*(3), 351–380. doi:10.1353/etc.0.0007.

Thelen**,** P. & Klifman, T. (2011). Using daily transition strategies to support all children. *Young

Children, 66* (4), 92-98. Retrieved from

http://search.ebscohost.com.dist.lib.usu.edu/login.aspx?direct=true&db=eue&AN=50848

1254&site=ehost-live

Yarbrough, J. L., & Skinner, C. H. (2004). Decreasing transition times in a second grade

classroom. *Journal of Applied School Psychology, 20*(2), 85-107.

doi:10.1300/J370v20n02 06

Yeaton, W. H., & Bailey, J. S. (1978). Teaching pedestrian safety skills to young children: An

analysis and one-year follow up. *Journal of Applied Behavior Analysis, 11*(3), 315-329.

https://doi.org/10.1901/jaba.1978.11-315
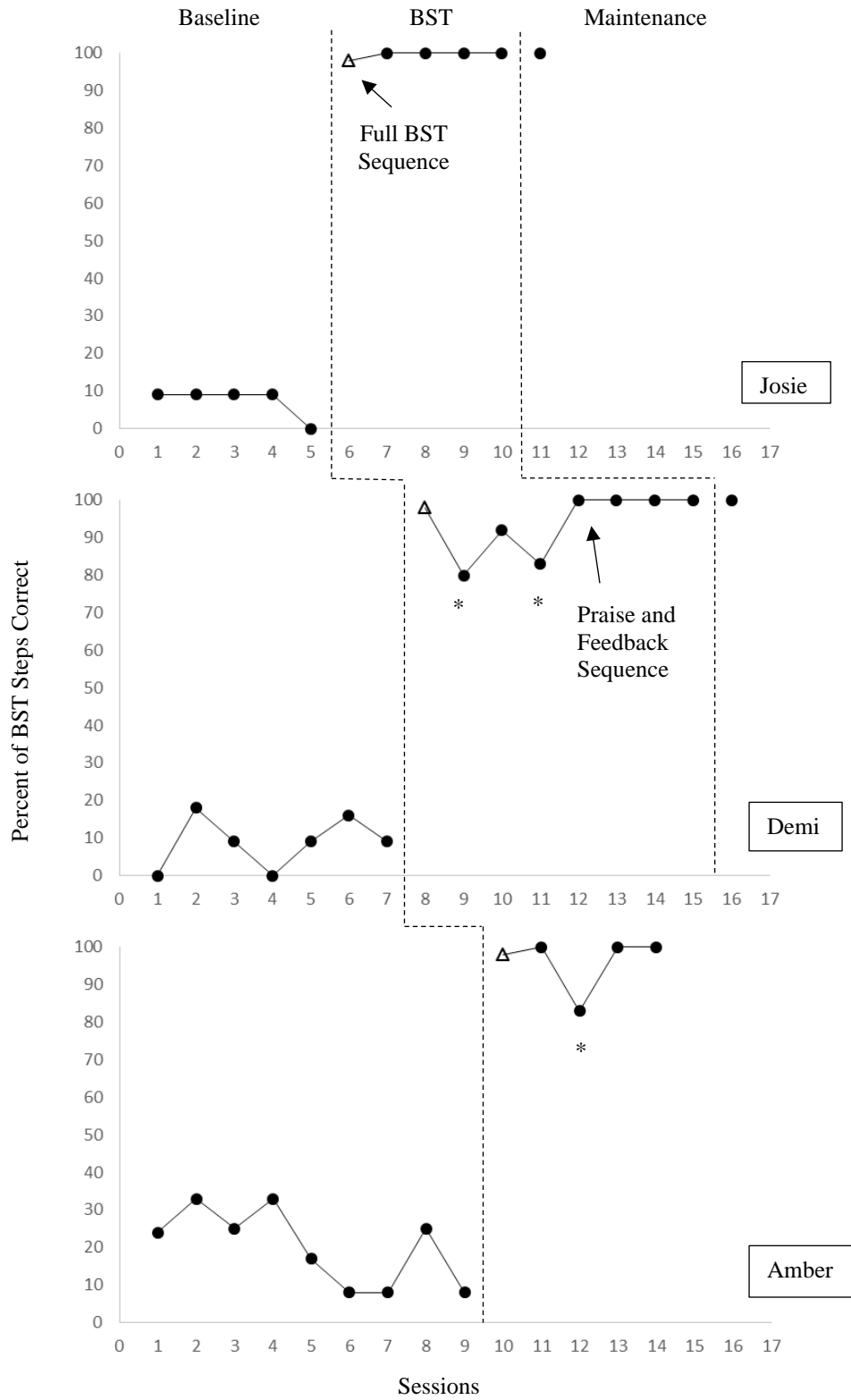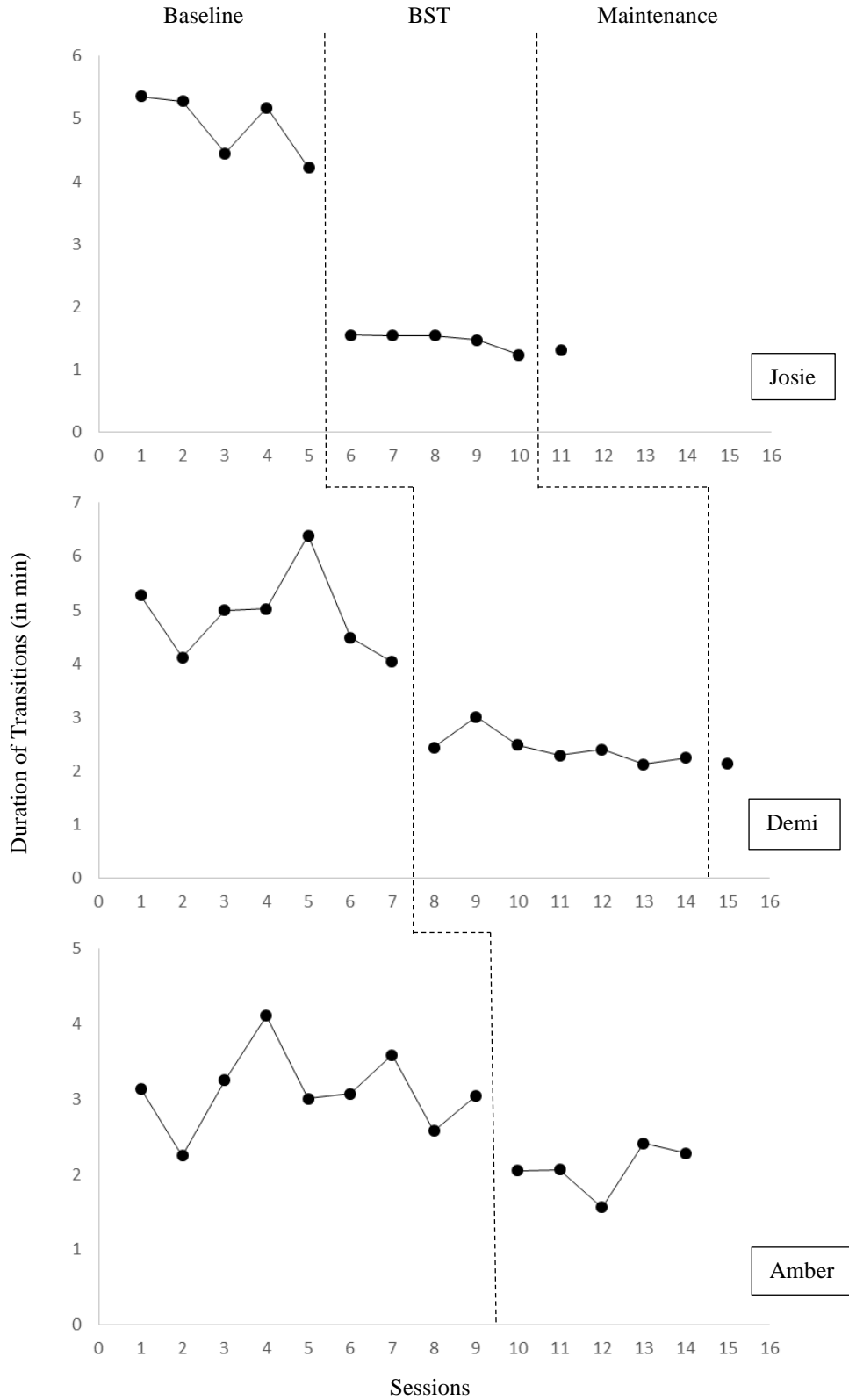
Figure Caption

Figure 1. Teacher percent of BST steps implemented during the recess transition. Triangles represent the session following BST training where teachers conducted the complete BST sequence with their students. Circles represent sessions where only the praise and feedback sequence was implemented. * Denotes sessions below the 90% accuracy criterion where researchers provided corrective feedback to teachers.

Figure 2. Student duration of transitions from the playground to the classroom.