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Increasing the Frequency of Tutors' Reinforcement of Compliance Behaviors

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Abstract

Compliance behaviors occurring prior to the delivery of an instruction, such as handing over preferred items, making eye contact, and folding hands in the ready position help prepare students for success in discrete-trial training (DTT) interventions. These behaviors are usually taught in early intervention with a continuous reinforcement schedule, but once they are mastered, they are rarely revisited or maintained. Without intermittent reinforcement of these behaviors, they are likely to decrease in frequency and may lead to the use of restrictive or intrusive methods to gain compliance during DTT sessions. The current study used a multiple-baseline across participants design to assess the effects of information and self-monitoring on the number of compliance behaviors reinforced by practicum tutors in an early intervention classroom.

Keywords: compliance, discrete-trial training, students, self-monitoring

Introduction

When teaching students with autism, the first skills they must learn are basic compliance behaviors such as eye contact, accepting removal of objects, and keeping their hands in their lap when told to do so. However, after these skills are mastered, they are not consistently reinforced by tutors and behavioral technicians. Over time, these behaviors are punished due to demands that are placed following compliance behaviors instead of reinforcement, as compliance behaviors often precede instruction. Therefore, the frequency of compliance behaviors decreases, and instead, the frequency of aggression and non-compliance behaviors in students increases.

Regarding compliance behaviors, previous research has discussed reinforcement of high-probability requests. Pitts and Dymond's (2012) study regarding increasing compliance in children with autism addresses the issue of using reinforcement for high-probability requests. The findings demonstrated that programmed reinforcement is a critical component in increasing compliance with low-probability requests and in reducing latency to compliance and task-completion time (Pitts & Dymond, 2012). However, this study focused on a fixed-interval schedule, not on naturally-occurring intermittent reinforcement. In Strand, Wahler, and Herring's study on non-specific reinforcement, results revealed that appropriate instruction in the form of rewarding compliance and subjecting opposition to extinction and punishment was more likely to occur prior to episodes of child compliance than child opposition (Pitts & Dymond, 2012). Both child responses to instruction and socially appropriate behaviors were reinforced intermittently, and that in turn produced high rates of compliance (Strand, Wahler, Herring, 2001). Thus, the intermittent reinforcement of high-probability requests is necessary to consider when focusing on compliance-related behaviors. The field uses intermittent reinforcement to help ensure that these skills are maintained over time. However, often we are seeing that despite using high-probability

responses to reinforce behaviors and increase compliance, intermittent reinforcement does not matter if tutors aren't implementing this reinforcement schedule. These skills are not being maintained because there is not data collected on behavioral technician or tutor performance.

If the contingencies surround the effectiveness of reinforcement and compliance are not present, then it is on us as tutors and teacher, it is a result of our lack of reinforcement. This issue lies in the fact that it is unreasonable to constantly take treatment integrity data on tutor behavior in the classroom setting. This is where we turn to the field of self-management and self-monitoring. When discussing behaviorism, we label the causes of behavior to be found in the environment. Skinner was the first to apply both philosophy and behaviorism to behaviors that we typically associate with control by the self. One definition of self-management is "the personal application of behavior change tactics that produces a desired change in behavior" (Cooper, Heron, and Heward, 2007). Self-control is usually present within an individual when there is not control or influence by external stimuli. Self-management can be used for all people and within varying locations. The self-management techniques may be controlled completely by the individual or may be implemented by an external change agent. What is the need for self-management when external contingencies may be put in place instead? Self-management can assist individuals in increasing daily efficiency, replace negative behaviors, and successfully complete goals. Other advantages of self-management include that self-management can influence behaviors that are not accessible to external change agents, that external change agents can often miss important instances of that behavior, that self-management can promote both generalization and maintained of the behavior that is being changed, and that small levels of self-management can control many behaviors (Cooper, Heron, and Heward, 2007).

When speaking of self-management, self-monitoring specifically has become a subject of great application. Self-monitoring "is a procedure whereby a person observes (their) behavior systematically and records the occurrence or nonoccurrence of a target behavior" (Cooper, Heron, and Heward, 2007). The success of self-monitoring is in that the person recording their behaviors is usually the one who the self-management or behavior change intervention is being implemented with; therefore, the highest level of obtrusiveness exists in the program and reactivity to the self-monitoring is highly likely. Though it is difficult to isolate self-monitoring as a standalone procedure with effective results, often, this can be combined with various procedures and this has been proven to be effective in changing behavior. Guidelines to effect self-monitoring include easy and efficient materials and recording forms, providing supplementary prompts, and to self-monitor only the most important dimension of the behavior.

In one study with students in a typical classroom that Davis et al. studied their intervention, there were high levels of non-compliance and off-task behavior. They used a self-monitoring tool with students to self-monitor on-task behaviors in the classroom, while they were provided additional reinforcement for that behavior. The results suggested that the combination of self-monitoring plus reinforcement intervention had the greatest, most meaningful effect on the target behavior. The data from this study are in alignment with other studies that self-monitoring alone does not have as large of an influence on the data as a combined treatment package (Davis et al., 2014). This study reiterated past research in explaining one theory of self-monitoring and why it works: that self-monitoring evokes covert self-evaluation statements that can be reinforcing or punishing to the user of the tool.

Currently, there is not much research available on self-monitoring for behavior technicians, but there is a lot of research in using self-monitoring it to improve staff/teacher performance, which is fairly like the purpose at hand. Providing reinforcement for correct behaviors in our staff is just

as important as reinforcing correct behaviors in our clients. In the Kalis, Vannest, and Parker study from 2007, authors looked at the effectiveness of a self-monitoring tool for increasing rates of teachers' praise statements as well as the simplicity of using a tool like this in the classroom setting. The results of the study displayed that the use of the self-monitoring tool increased praise statements and resulted in high social validity for both the teacher and the students. The study described the effectiveness of the procedure, stating, "[the participant] was able to evaluate the information that she calculated herself, view the effects of the praise had on her students, and evaluate the effects praise had on academic productivity," (Kalis, Vannest, Parker, 2007, 25). The study indicated the promise behind a self-monitoring tool as a nonintrusive intervention, that is easy to implement and produces immediate feedback that can be effective in creating a change in behavior. (Kalis, Vannest, Parker, 2007).

Accurate implementation of behavioral programming is extremely important in evidence-based practices; however, research has shown that neither training nor consultation is enough regarding maintaining tutor performance. The Mouzakitis, Codding, and Tyron study looked at the use of self-monitoring with and without performance feedback to improve treatment integrity in teachers. The self-monitoring sheet included one column listing components of the plan and steps for correct implementation, while the second column left space for the teacher to check the completed steps. Like past literature, the findings of the study reiterated that behavior plan training itself was not enough to maintain treatment integrity in the teachers. However, the results suggested that self-monitoring improved treatment integrity for three out of the four participants. The addition of the performance feedback component improved performance for three teachers, however it was only maintained for two. Also, the results found that higher

treatment integrity of the teachers is associated with higher frequency of the target behaviors of the students (Mouzakitis, Codding, Tyron, 2015).

In Petscher and Bailey's 2006 study, the treatment package included tactile prompting and self-monitoring with feedback. Results displayed significant positive change and improvements for all participants as a result of the self-monitoring tool. Baseline was followed with a training session, followed with the prompting, self-monitoring, and feedback components. This study used the tactile prompts using a vibrating pager, but this was faded out with the use of the second component of the self-monitoring form. Though the intervention was successful for all participants, the data from the intervention package indicated it is likely that the tactile prompting, the antecedent prompt strategy, may have been responsible for the improvement, while suggests future research to explore its impact alone (Petsher, Bailey, 2006). This research reiterates that self-monitoring packages are often used to be paired with other components for maximum efficiency and impact.

Looking at the literature, it is evident that there has been a lot of research on the use of self-monitoring tools alongside other intervention packages, but not much on the effectiveness of the self-monitoring tool itself when used for behavior technicians or tutors. As seen from the research, self-monitoring could improve the quality of our services and the fidelity of our procedures, so it is an intervention to consider when looking at early intervention classrooms. Therefore, this study will further investigate the use of a self-monitoring tool as an intervention for changing tutor behavior.

Methods

Participants

This project utilizes a self-monitoring tool to increase undergraduate practicum tutors' behavior of reinforcing their students' compliance behaviors. The participants were undergraduate students participating in an undergraduate practicum in a preschool setting through a partnership with Kalamazoo RESA (KRESA). There were three participants total, two girls and one boy, all within the age range of 20-22 years old, 2 of whom had were second-semester practicum students, and 1 of which was a first-semester practicum student. Participants were recruited through a call for volunteers that was presented during a class lecture, where tutors were given the choice to volunteer and ask questions about the study. No additional incentives were provided for volunteers. From this call for volunteers, out of the 7 students who volunteered for the study, 3 were chosen. Inclusionary criteria for selecting the participants included having a shift at the same time as the research assistants, working with a student who had mastered the eye contact procedure or both the eye contact procedure and the my turn procedure, and working with a student who would remain in the ECSE classroom for the remainder of the semester.

Setting & Materials

The study took place at a Western Michigan University practicum site providing behavior analytic services in an Early Childhood Special Education classroom through a partnership with KRESA. In this classroom, discrete-trial training procedures are implemented to provide support to children with developmental delays, aged 3-5 years old. The room is split into individual booths where one-on-one discrete-trial lessons are provided to the children for 3 hours a day, 5 days a week. Research materials included the data sheet for the research assistant (See Appendix

A), the self-monitoring data sheets for the participants (See Appendix B), and a timer to mark 15 minutes of data collection for the research assistant. Participants also needed their day-to-day program materials and classroom-wide data sheets for procedures that were specific to the child. Both edible and tangible reinforcers for children were selected based on informal, free-operant preference assessments conducted at the beginning of each day.

Research Design

This project was conducted to increase the frequency of reinforcement of compliance behaviors of students by practicum tutors at our practicum site. This was a multiple-baseline across participants design. Only the eye contact and my turn procedures were used for this study, as these are the first two procedures that a student masters when they enter the ECSE classroom. There was no reinforcement or punishment contingency in place for the tutors, only the use of the use of the self-monitoring tool was assessed for this study, and as well as the feedback component for one of the participants. The data collected by the participants themselves was not used to calculate inter-observer agreement, as the periods of data collection between the participants and the research assistants differed. Therefore, the data collected and analyzed was only that of the research assistants.

Dependent Variable

Dependent variables included the target response of appropriate delivery of reinforcement for a compliance behavior. For all three participants, an appropriately reinforced trial was operationally defined as providing a tangible or edible reinforcer along with social praise following the student making eye contact. For the student of participant 705, who also had mastered the my turn procedure, an appropriately reinforced trial was operationally defined as giving back the tangible that the student had handed over during the my turn trial, along with

social praise. Data were collected by research assistants on the frequency of tutors appropriately reinforcing compliance behaviors.

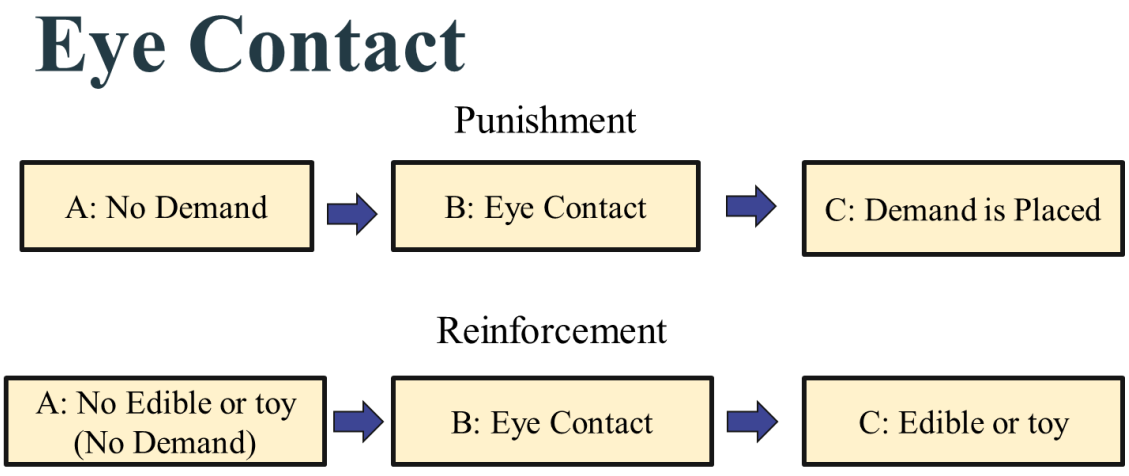
Additionally, research assistants collected data on non-complaint behaviors of tutors such as incorrect trial delivery, reinforcer flashing, and forced removal of a tangible. Though this was not that the intervention focused on, we wanted to see if the self-monitoring tool had any effect on these behaviors too. Finally, research assistants also collected data on the frequency of problem behaviors of the students. Again, these weren't behaviors that the intervention targeted, however, we were interested in seeing the self-monitoring tool's effect on these behaviors as well. All operational definitions of reinforcement of compliance behaviors, non-compliant behaviors of tutors, and problem behaviors of students were previously defined.

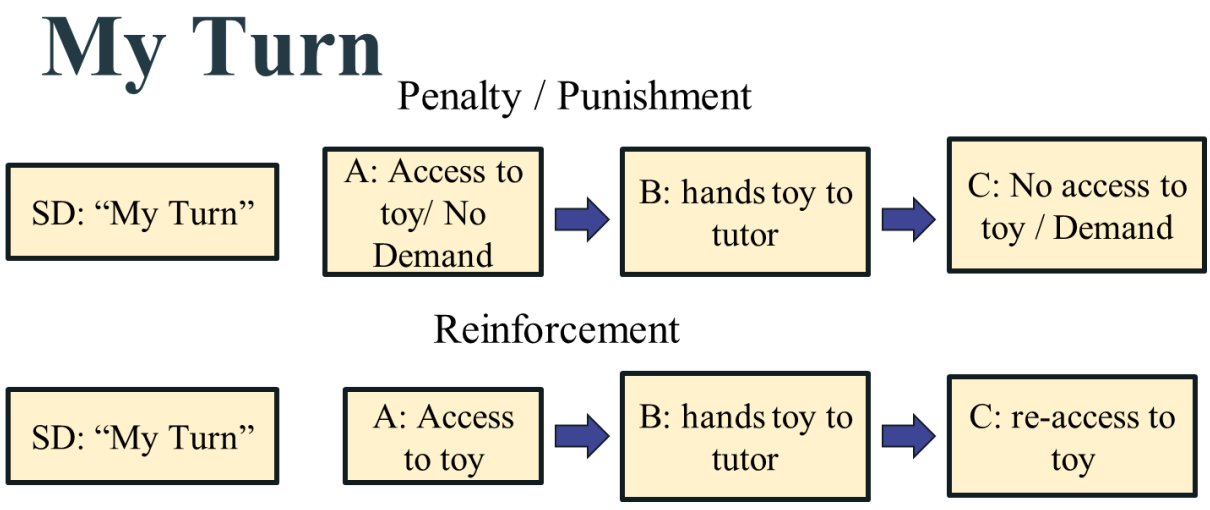
The research assistants were 2 undergraduate members of the thesis committee who had completed prior semesters of practicum and were either studying as thesis students or research assistants in the lab. Research assistants were trained by providing a list of operational definitions (Appendix C) and a discussion with the thesis mentor, and the use of 3 sessions prior to baseline to practice data collection along with the thesis student.

Independent Variable

The independent variable for all the participants was the implementation of the self-monitoring tool. For participant 705, there was an additional component of feedback added for the final two sessions. The participants were trained in one training session that lasted 10 minutes on how to use the self-monitoring tool; they were provided a model and were observed during a practice trail at the training meeting. Once the training and the observation was conducted during this meeting, participants met mastery criteria and moved into the intervention phase. Following the training meeting, the self-monitoring tool was taped to the walls of the participants' booths in

the classroom, so that participants did not have to flip through multiple data sheets and procedure sheets to be able to record self-monitoring data. We used the self-monitoring tool to see that if that alone would cause a change in the behavior of the participants. As research assistants, we observed the frequency of reinforcement by participants. The contingencies that were observed in the intervention are listed below.





For this procedure, we did not collect any treatment integrity or interobserver agreement data.

Baseline

Prior to implementation of the self-monitoring tool, research assistants first recorded baseline data on tutors' reinforcement of compliance behaviors. For Participant 701, 4 days of baseline data were collected; for participant 705, 6 days of baseline data were collected; and for participant 706, 10 days of baseline data were collected. Each day, one session was conducted. Each session consisted of 15 minutes of observation and data collection, and the 15 minutes were non-continuous. During data collection, observers stood outside of the booth and behind the booth wall, in an effort to be as unobtrusive as possible. During baseline, research assistants recorded all instances of eye contact or my turn trials, both correctly reinforced responses and responses that were not reinforced. Frequency data was also collected on non-compliant behaviors of tutors, such as incorrect trail delivery, reinforcer flashing, and forced removal of tangibles all of which had been previously operationally defined for research assistants as well (Appendix C). Additionally, the frequency of each student's problem behaviors was tracked during baseline and intervention sessions, all of which had also been previously operationally defined for research assistants.

Intervention

After baseline, and prior to intervention, the participants were introduced to the self-monitoring tool at the group practicum meeting and were instructed on how to mark self-monitoring data, as well as where it would be located within the booth. Correctly reinforced responses were operationally defined for participants, and they were instructed that they must provide both tangible/edible reinforcers and social praise for a trial to be a correctly reinforced response. They were instructed to collect self-monitoring data for all 3 hours that they were on site, each day that they were on site, and that they would be provided with new data sheets each

week. Any questions they had were also addressed during this meeting. Following the question and answer portion, a model trial was shown by the research assistant to the participant, in which the research assistant demonstrated a correctly reinforced response for the eye contact and my turn behaviors. Afterwards, a mock trial was conducted with the participants in which the research assistant played the student, and the participant was given a chance to practice a correctly reinforced response. 2 mock trials were conducted for each participant per procedure. Once the participant had correctly reinforced the compliance behavior twice, then they had achieved mastery criteria and were ready to move to the intervention phase. In the following on-site session, their self-monitoring datasheet was then posted on their booth wall, so they could easily mark instances of appropriately reinforced compliance behaviors. Describe what you did in depth for each session you observed.

Participant 701

701 was a male student who had completed a semester of practicum prior to the semester of data collection. For participant 701, 4 days of baseline data were collected. The problem behavior that was tracked for participant 701's student was screaming. We operationally defined screaming to be any instance of the student emitting a sound at a greater volume than their normal vocalizations. Each instance of screaming was distinguished by a space of three seconds in between, and the frequency of individual instances was calculated.

Participant 705

705 was a female student who was completing their first semester of practicum during the semester of data collection. For Participant 705, 6 days of baseline data were collected. The problem behavior that was tracked for participant 705's student was the frequency of refusals or stating "no." We operationally defined refusals as any instance in which the student used a

louder than speaking-volume to state “no” after a demand is placed or a preference assessment is conducted. 705’s student was the only one who had also mastered the my turn procedure, and therefore the frequency of reinforcement of compliance for my turn was also recorded for them. Due to the kid’s refusals, there was protocol in place to minimize this problem behavior, in which the student would hand the tutor a red “break” icon and would immediately receive access to the ramp or the hallway.

Participant 706

706 was a female student who had completed a semester of practicum prior to the semester of data collection. For participant 7-6, 10 days of baseline data were collected. The problem behavior that was tracked for participant 706’s student was head banging. We operationally defined head banging as any instances in which the student hit their head against the padded booth wall. The student of participant 706 had a demand fading procedure in place during this semester, in which their session was split into alternating 15 minutes intervals of work and 5-minute intervals of play. Each minute of work was a trial of one of her previously mastered programs. This was in an effort to decrease self-injurious behaviors, such as head banging.

Results

This study aimed to assess the effects of a self-monitoring tool on the number of reinforced compliance behaviors by practicum students in an early intervention classroom using a multiple-baseline across participants design. The intervention was necessary because it was observed that there is a decrease in practicum students' reinforcement of compliance behaviors once their child mastered certain procedures and programs. When contingencies surrounding the tutors' behavior of reinforcing compliance were analyzed were analyzed, the lack or decrease of this behavior displayed a potential consequence being an increase in aggression reinforcers and problem behaviors as a result of the compliance being punished rather than reinforced. This intervention was put in place to increase the reinforcement of compliance behaviors and to ensure that this maintained past mastery of the procedure.

This study is significant to the participants because it allows them to be familiarized with reinforcement of correct responses in procedures and previously mastered compliance behaviors. In addition to the self-management skills, participants were able to gain tracking experience of their own behaviors in addition to their students' behaviors. This will increase their reinforcement of compliance behaviors in the future, ultimately increasing appropriate responses of their student. The self-monitoring tool could potentially prompt these students to make covert rule statements and the statement of these rules may transfer to working with other kids or in other settings as well.

The results displayed that though there was an increase in the frequency of reinforcement of my turn for Participant 705 as a result of self-monitoring procedure, the results remain inconclusive as this was not reflected within and across all tutors. Two of the three participants did not demonstrate a meaningful increase in the frequency of reinforcement.

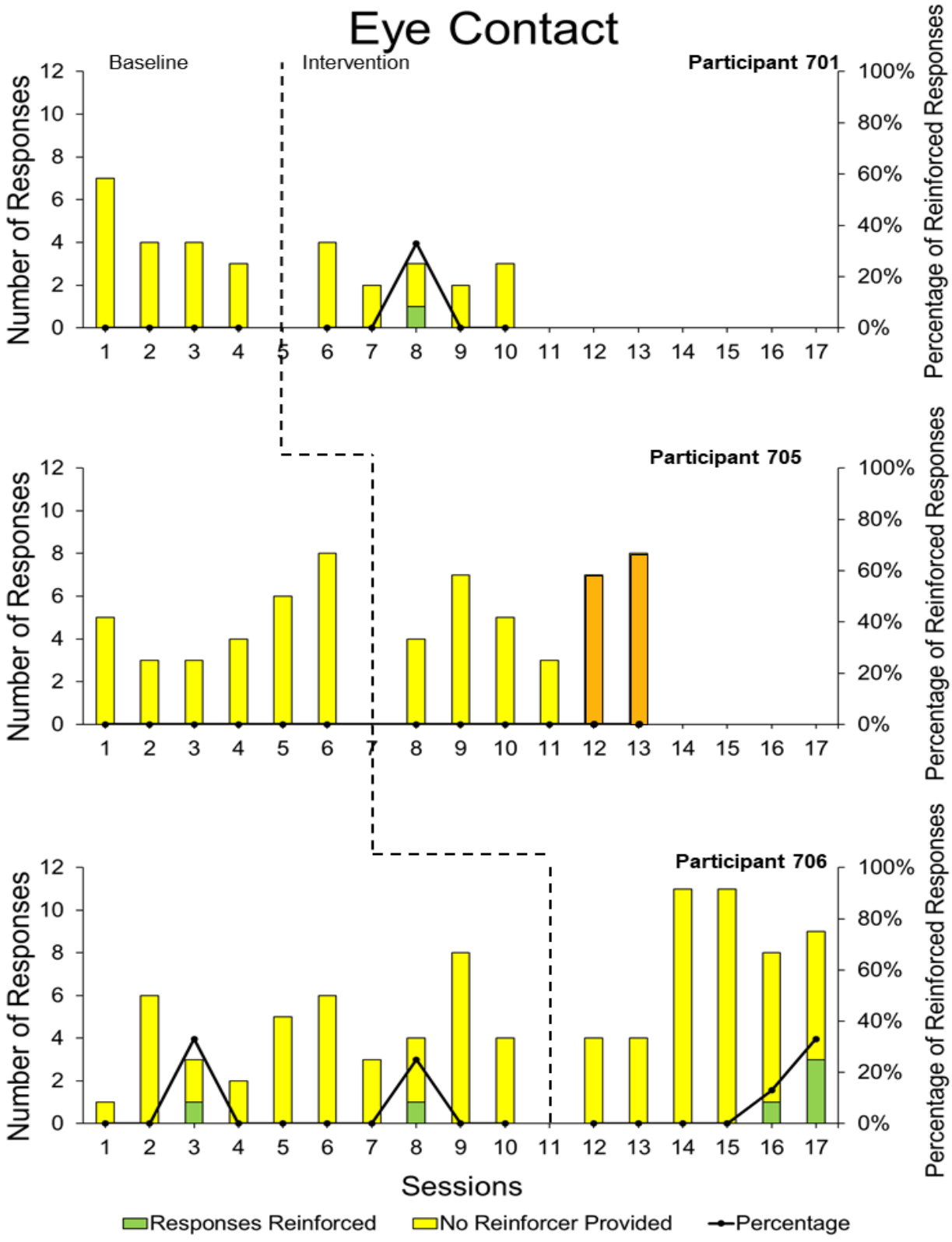


Figure 1: The multiple baseline graph for the eye contact procedure for all three participants.

In terms of the multiple baseline design, 701 began intervention first, followed by 705, and lastly by 706. Problem behaviors were tracked to see if there was a correlation between the frequency of reinforcement of compliance.

For Participant 701, they began intervention after 4 days of baseline data were collected and the training session was conducted. The problem behavior that was tracked for their student was screaming. When looking at the data of Participant 701, during the 4 days of baseline, there is no reinforcement provided for any compliance behaviors. However, during the 5 days of intervention, reinforcement was only provided during one of the sessions, and only one compliance behavior was reinforced. Evidently, the frequency of reinforcement of the compliance behaviors did not increase enough to be considered meaningful or effective. In terms of problem behavior, the student mostly did not exhibit any problem behavior through baseline or intervention. So, no change was displayed in that variable either. When considering the data, one aspect that may have affected the results is the response rates of the student herself. The student of Participant 701 was a student who neither responded to prompts or discriminative stimuli, nor interacted with other students, nor responded negatively with problem behaviors. They simply did not respond very much at all. Therefore, the opportunities that Participant 701 had to reinforcement eye contact were very minimal in comparison to if they had worked with a different student. This lack of opportunities also created an increase the presence of non-complaint behaviors within the tutor and a high frequency of reinforcer flashing was noticed in throughout the intervention for Participant 701. Due to the lack of change in reinforcement of the compliance behavior, it can be determined that the intervention was not successful for this participant.

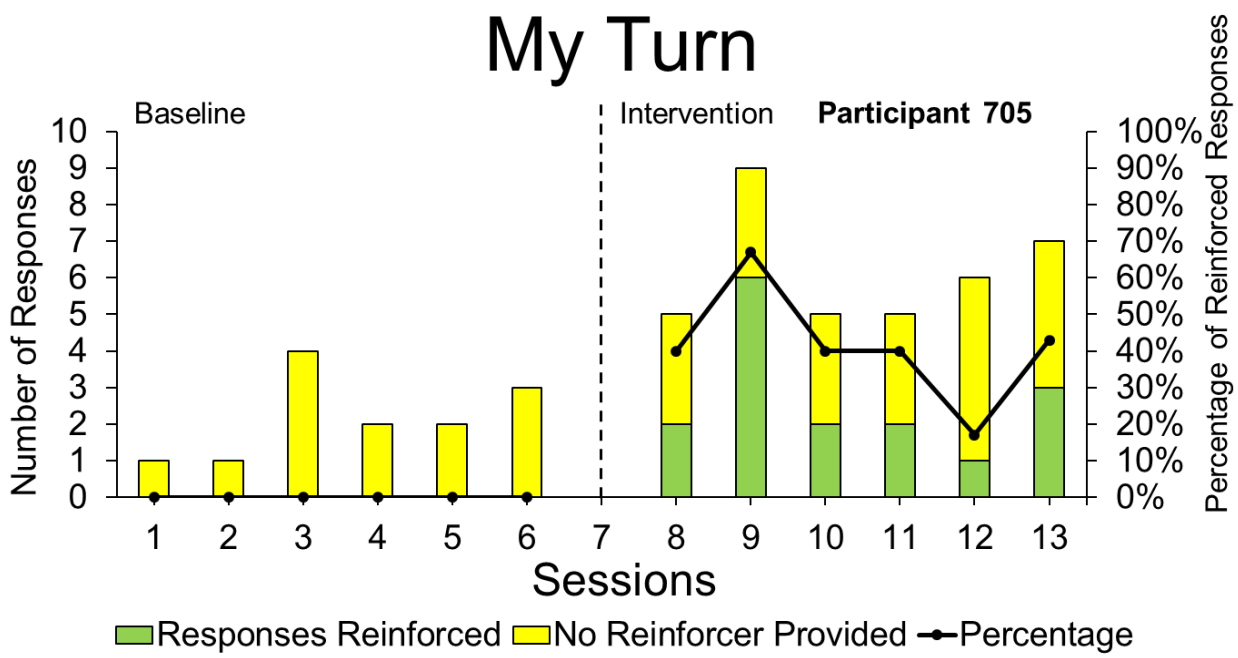


Figure 2: The individual my turn graph for Participant 705.

For Participant 705, they began intervention after 6 days of baseline data were collected and the training session was conducted. The problem behavior that was tracked for their student was refusals or stating "no." Their student was also the only one of the three who had mastered both eye contact and my turn. The data from my turn procedure displayed no reinforcement provided during the 6 days of baseline. However, during each of the 6 sessions of intervention, reinforcement was provided from anywhere between 20-60% percent of the trails, which displayed both a significant and meaningful increase in the frequency of reinforcement.

At the same time, when looking at the eye contact procedure data for Participant 705, during baseline, no reinforcement was provided, and again during intervention no intervention was provided for the first 4 sessions. Seeing the stark contrast in the data between procedures, we decided to add an additional component of performance feedback for Participant 705, which is

the data represented by the orange bars during the final two sessions. This feedback consisted of a meeting with the participant in which their data were discussed, the procedure was discussed, and a rule-statement was made for them. This simply stated that they were excelling in my turn program, and that we would like to see the same change in the eye contact program, and to focus on that program as well. Following the feedback session, the data observed still did not create a presence or increase of reinforcement in the eye contact procedure. Some considerations were made when analyzing this contrasting data. One may be that because the participant was so focused on my turn data, they were not as prompted and keen to identify and reinforce instances of appropriate eye contact. The success of my turn procedure can also be attributed to the high skill level of the student and the increased availability of opportunities for reinforcement.

Though the tutor did exhibit some non-compliance behaviors of forced removals, it was not often enough to create an impact on their enforcement behaviors. When looking at the problem behaviors of the student of Participant 705, their frequency of refusals displayed a slight decrease over the course of the intervention. Though this may be attributed to the introduction and implementation of the "break" card system, Participant 705 actually provided anecdotal feedback that "as [they] had been reinforcing my turn trials, [they] actually noticed an increase in compliance of their student." The data are merely correlational, the impact on the tutor was one of the desired goals of the study overall.

For Participant 706, they began intervention after 10 days of baseline data were collected, and the training session was conducted. The problem behavior that was tracked for their student was instances of head banging. When observing the 10 days of baseline data for Participant 706, there were two days that reinforcement was provided for one instance of compliance. This presence of reinforcement of compliance behavior, in contrast to the lack in other participants,

may be attributed to the fact that Participant 706 was a practice student for the second semester, having more experience working with a variety of clients. When looking at the change during intervention, the first 4 days we do not see any reinforcement. However, during the last two days of intervention, there was a significant increase to 20% of opportunities reinforced. Though this is a significant increase in the data, it cannot be considered a meaningful change in the behavior because not enough days increased reinforcement data were collected for this to be considered a meaningful change.

Overall, Participant 706 did not display very many non-compliant behaviors, but consistently missed many opportunities to reinforce the eye contact. When considering what may have affected that data, we look to the problem behavior data. The student of Participant 706, throughout baseline and intervention, had anywhere from 5 to 20 instances of headbanging throughout every session. And though no change was evident in the frequency of this problem behavior, the severity of the self-injurious behavior was one that required a greater level of prioritizing for this participant. For this problem behavior, the tutor needed to make sure that the student was guarded by the padded walls, and that they were continuing to place demands. In addition, this student was placed in a very specific demand fading intervention that required them to complete a task for each minute for 15 minutes of work, followed by 5 minutes of play to decrease the problem behavior. And though the demand fading was an intervention for the student, this required the participant to be implementing new procedures every minute of the sessions, once again shifting their priorities in the booth to focus on the student's procedures, then the self-monitoring tool. Thus, these considerations can be made when assessing their variable data.

As such, the results of the study displayed that though there was a significant increase in the frequency of reinforcement of my turn for Participant 705 as a result of self-monitoring procedure, the results remain inconclusive as this was not reflected within and across all tutors. This is evident through the lack of meaningful change in the eye contact for all three procedures. Therefore, the results remain inconclusive and further research and experimentation needs to be conducted to derive any conclusions.

Discussion

From the results that were obtained, the data remain inconclusive as the increase in frequency of reinforcement was not consistent within and across participants. As such, the hypothesis of the study that the use of a self-monitoring data sheet would increase the frequency of reinforcement from practicum tutors was not supported. These results were attained because with two out of the three participants, there was not a meaningful increase in frequency of reinforcement during the intervention condition. However, due to the time restrictions and the numerous limitations that arose, we cannot determine a that the change or lack thereof of change was due simply as a result of the self-monitoring tool.

Data collection resources were limited due to practicum site restraints. Initially, we wanted the master's students to take data for three separate five-minute intervals on the participant that they monitored. However, the job responsibilities of master's student supervisors on shift conflicted with data collection needs of the study and they were unable to fulfill this need. This restricted the amount of data collection we could attain as we were restricted just 2 research assistants, collecting data for a non-continuous fifteen-minute period during the session for each of the participants. This not only restricted the time for data collection, but also subsequently decreased the number of participants we could have potentially worked with from seven to the three that we chose, as their shift schedules had to align with that of the research assistants. Because of the schedule of the undergraduate students, shifts were not consistent day-to-day across the week. As a result, we could only collect data for three times a week, as opposed to the initial goal of five times a week, and because it was a non-continuous fifteen-minute interval, it was not truly a random sample of the students' or the tutors' performance. Regarding time constrains, data collection also occurred during the months of October through December

which included a fall break and Thanksgiving break, that already limited the number of days for data collection. In addition, due to the increase in illness during the fall and winter months, both students and tutors were frequently absent and when one or the other was not present, data could not be collected.

Potential confounding variables may include the observer bias that may have affected the results of the study. As the participants could see the research assistants collecting data, their performance may have increased during those fifteen-minute intervals of data collection. However, participants were instructed to collect data for the full two-hour shift, and it was observed by research assistants that even when they were not present, that tallies were being marked on the self-monitoring tool. It may not have been to the same degree as when they were collecting data, but it was still occurring. Other potential confounding variables may have been inconsistent data collection across research assistants. Though prior training was given, operational definitions and treatment integrity was provided, the situational differences across participants may have reflected in distractions and thus inconsistent data collection across research assistants.

Another consideration that may have affected that data was the level of attention that the tutors needed to pay to the individual needs and behavior protocol of the students. For example, the student of Participant 705 had a “break” card procedure in place that allowed him to tap the “break” icon and immediately be taken to the hallway or the ramp area for a break. However, in terms of data collection, this broke up not only the fifteen-minute interval, but also the opportunities of the tutor to reinforce the eye contact or my turn behavior. In contrast, for participant 706, due to the intense demand fading procedure they were involved in and the high intensities and frequencies of problem behaviors exhibited by their student, had to give priority

to attending to this behavior in comparison to the compliance behaviors. This was especially true due to the presence of self-injurious behaviors. As such, the individual programs and needs of the students, especially since they varied so greatly across students may have impacted the data as the participant's focus was split between multiple objectives.

The intention requires little effort, so potential benefits or possible application to other skills beyond reinforcement of compliance are worth assessing. Future directions may look at ways to make it less effortful for tutors to reinforce compliance behaviors. The measurement of tutor efficiency as well as the measurement of rule statements in practice could also be a future variable to consider assessing as both are very relevant to the field of behavior analysis, especially in an applied setting. In addition, we could look at beginning the intervention at the start of the semester as opposed in the middle of the semester once all programs and training had been completed so that the use of the self-monitoring tool is not a secondary consideration for tutors, but rather one that used as a part of training itself and is second nature to them in a booth.

Future directions could also explore the introduction of other components such as individual performance based verbal feedback component, a graphic feedback component, a video feedback component, or even an incentive component. Past research shows that combined processes increase frequencies of the desired behavior more than the tool itself, so this may have a greater impact. A goal setting component can also be considered. For the purposes of this study, intermittent reinforcement was not necessarily defined as a certain average percentage. However, for future studies, intermittent reinforcement could be defined with average percentage goals for each participant. And finally, future study could be constructed where compliance behaviors as those that are tailored to the needs of each individual student. For example, the compliance behaviors for a student who has struggled in sitting at the booth and has just

mastered “sit down,” this could be a compliance behavior for which the frequency of reinforcement is measured. This way, the self-monitoring tool can be applicable to each individual student and there does not need to be inclusionary criterion for any specific student.

Further research is warranted based on the experiences of this study and these results. However, the would have to take into consideration the practice site restrictions prior to data collection. However, due to the results of this study, a closer look can be taken at the correctional effect of increase of attending and the decrease of problem behaviors for students and the use of the self-monitoring program for the tutors. The potential benefits of this procedure and variations is meaningful to our science and is worth considering in not only our practicum site, but all others as well.

APPENDIX A: DATA SHEETS

Figure 1: Data Sheet

Participant Observation Data Sheet: Increasing the Reinforcement of Compliance-Related Behaviors					
Tutor Code: _____					
Date:	**Kid:**	**Observation** ___:___ - ___:___; ___:___ - ___:___ ; ___:___ - ___:___		**Totals:**	
Compliance		Response Reinforced	No Reinforcer Provided	**R+**	**No R+**
Eye Contact					
My Turn					
Non-Compliance		**Frequency Tallies:**		**Totals:**	
Inc. Trial Delivery					
Rein. Flashing					
Forced Removal					
Problem Behaviors					

Figure 2: Self – Monitoring Data Sheet

Date:_____ Behaviors to Record	**Mark Tally for Each Compliance Behavior Reinforced with Tangible or Editable Reinforcer**	**Totals:**
Eye Contact		
My Turn		

APPENDIX B: OPERATIONAL DEFINITIONS

Behaviors of Participants

- **Unreinforced eye contact**: Any instance of the participant orientation towards a child face, and in response the child orients to the participant's face as well for at least 1 second, that is not immediately followed with a presentation of a tangible or edible reinforcer. Instead, a different demand is placed on the child.
- **Unreinforced my-turn**: Any instance of the participant providing a child with the SD of "my turn," after which the child immediately hands a toy that is in their possession to the participant, or the tutor uses prompting to help the child complete the response. If following this the participant does not immediately provide the child with re-access to the toy, or does not immediately provide the child with an edible, and instead places a different demand on the child, this is an unreinforced response.
- **Reinforced eye contact**: Any instance of the a participant orientation towards a child face, and in response the child orients to the participant's face for at least 1 second, that is immediately followed with presenting a tangible or edible reinforcer.
- **Reinforced my-turn**: Any instance of the participant providing a child with the SD of "my turn," after which the child immediately hands a toy that is in their possession to the participant, or the tutor uses prompting to help the child complete the response. Following this, the participant immediately provides the child with re-access to the toy, or immediately provides the child with an edible.

Non-Compliant Behaviors of Participants

- **Incorrect trail delivery**: providing tangible, edible, or social reinforcement for a trail in which the student did not correctly comply to the demand that was placed. For example, eye contact was not made, or they did not hand the object over after a "my turn" SD was placed, however reinforcement was still provided.
- **Reinforcer flashing**: after demand is played, bringing the edible or tangible reinforce in front of the student's eyes and removing it, to entice or prompt a response, rather than getting the response under the control of the SD only.
- **Forced removal of tangibles**: placing a "my turn" SD, but not waiting for the student to comply, and instead, forcibly removing the tangible from the students' hands.

Problem Behaviors of Students

- **Screaming**: any instance of the student emitting a sound at a greater volume than their normal vocalizations. Each instance of screaming was distinguished by a space of three seconds in between, and the frequency of individual instances was calculated
- **Refusals**: any instance in which the student used a louder than speaking-volume to state "no" after a demand is placed or a preference assessment is conducted

Head Banging: any instances in which the student hit their head against the padded booth wall

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