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Alexandra J. Taylor
Bellarmine University, alibjane@gmail.com

Amy Lein
Bellarmine University, alein@bellarmine.edu

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Choice as an Antecedent Intervention Provided to Children with Emotional Disturbances

Abstract
Students with ED typically demonstrate social, behavioral, and academic deficiencies within the school setting. This article addresses the antecedent behavior interventions (ABI) of the provision of choice-making opportunities which are an effective practice within the PBIS framework. This study employed a single-subject multiple-baseline across-participants design to examine the effect of choice-making provided in social skills instruction on both academic (i.e., correct responses) and behavioral outcomes (i.e., task engagement, disruptions) for three elementary-aged students with ED.

Results demonstrated improved behaviors of three student participants. All participants showed an increase in task engagement and a decrease in number of disruptions from baseline to intervention conditions, and one of three student participants increased the number of correct responses on social skills assignments from baseline to intervention condition. In this study, experimental control was not established and this precluded the establishment of a functional relationship. The results are inconclusive for social skills instruction.

Keywords
choice-making opportunities, choice, deviant (or problem) behavior, emotional and behavior disorders, emotional disturbance, behavior interventions

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Choice as an Antecedent Intervention Provided to Children with Emotional Disturbances

It is estimated that 0.7% (349,000) of students have been diagnosed with emotional disturbances (ED; U.S. Department of Education, National Center for Education Statistics, 2018). Students diagnosed with ED have significant difficulties controlling their emotions and may present many undesirable behaviors including, but not limited to, hyperactivity, aggression, self-injurious behavior, and withdrawal. Further, when examining all students with disabilities, students with ED experience the least favorable outcomes (Jolivette, Stichter, Nelson, Scott, & Liaupsin, 2000). Specifically, 80 percent of students diagnosed with ED drop out of high school, experience a lower percentage of employment, have trouble maintaining a job, and are more likely to be arrested and/or incarcerated (Jolivette et al.). When presented with a social situation that is troubling or difficult, these students may not have the social and emotional strategies needed to cope. This is where the expertise and guidance of a special education teacher can play a pivotal role in these students' school successes.

A large part of educating students with ED is providing positive behavior interventions and supports (PBIS) embedded within the structured school day. Antecedent behavior interventions (ABI), including the provision of choice-making opportunities, are an effective practice within the PBIS framework. These types of interventions are proactive rather than reactive, meaning they occur before the student exhibits the undesirable behavior. To establish a solid understanding of ABIs it is important to understand the three-term contingency (also referred to as the ABC Contingency). The three-term contingency (ABC) stands for Antecedent, Behavior, and Consequence (Moxley, 1996). There is a correlation between the setting (antecedent), the behavior, and the consequence. Behavior can be elicited by the environment or setting. The consequences of the behavior can affect its future occurrence. As Moxley (1996) recounts, the relationship between the three-term contingency is iterative; as behavior acts upon the environment, the changed environment can become part of the setting for future behaviors.

The next section of the article will provide more detail on ABIs including a detailed explanation of the specific ABI, choice-making.

ANTECEDENT BEHAVIOR INTERVENTIONS (ABI)

ABIs are interventions that offer teachers a preventative approach to managing student behavior. ABIs are evidence-based practices that are used for addressing challenging behaviors (Wood, Kisinger, Brosh, Fisher, & Muharib, 2018). Instead of responding to students' challenging behavior after the behavior occurs (commonly called consequence-based intervention) or using punishment-

based interventions (e.g., time out; removal of privileges), special education teachers can attempt to stop problematic behavior before it occurs. Teachers implement an ABI by making changes to the setting and adjusting routines and procedures to both eliminate possible triggers for the problematic behavior and provide more opportunities for the student to display the replacement behavior (IRIS, 2019). This is important because it has been suggested that the use of consequence-based interventions alone are not effective for students with ED. Additionally, consequence-based approaches to addressing concerning behaviors limit the ability of students to exhibit control over their environment (Jolivette, 1999). The 1997 amendment to the Individuals with Disabilities Education Act (IDEA) requires functional behavior assessments and positive behavior intervention plans (including antecedent and consequence strategies) for students with ED. This policy update calls for special education teachers to develop and implement proactive and positive interventions and strategies.

ABIs are commonly taught during social skills instruction. Jolivette et al. (2000) report that social skills instruction in the classroom should involve both direction instruction and teacher mediation. The direct instruction should be specific, individualized social skills that should be taught to students with ED. The teacher plays a critical role in teaching social skills instruction across all environments in the school. McGinnis and Goldstein (1984) suggested that social skills instruction should be part of both the mainstream and special needs curriculum because "…it is not enough merely to tell a student that an action is not acceptable; additional measures must be taken to teach the student what to do, as well as what not to do" (p. 3). To increase prosocial skills in children with disabilities, specifically children with ED, social skills instruction must be present in the curriculum. Choice-making is one ABI that can be taught during social skills instruction.

CHOICE-MAKING

Classroom time specifically set aside for social skills instruction provides a uniquely appropriate opportunity to practice replacement behaviors. Social skills instruction is an important part of the development of a student diagnosed with ED because these children have trouble controlling and managing their emotions. Through social skills instruction, these students can be better equipped with knowledge and skills to help control their emotions, thus fostering a positive environment within the classroom that aids in school success. One ABI that can be taught during social skills instruction is choice-making.

Choice making is simply presenting multiple acceptable options to students and allowing them to select one. Research has shown choice-making as an ABI positively impacts student academic and behavioral outcomes. A meta-analysis

conducted by Shogren, Faggella-Luby, Bae, and Wehmeyer (2004) showed positive effects on both student academic outcomes (i.e., assignment completion and accuracy) and behavior outcomes (i.e., reduction in aggressive behavior and increased adaptive behavior) when an effectively planned choice-making opportunity was presented to students. The meta-analysis reported that providing choice opportunities resulted in decreased problem behavior occurrences for 78 percent of children ages four through seven (Shogren et al., 2004). Jolivette, Wehby, Canale, and Massey (2001) reported increased task engagement, decreased off task behavior, and decreased disruptions for elementary-aged participants in the choice condition as compared to baseline. Furthermore, Jolivette et al. (2001) suggested choice-making helps students to improve school outcomes (i.e., academic and behavior) because it (a) takes into consideration the student's preference, (b) provides a predictable environment for the student, which, in turn, reduces problematic behavior, and (c) contributes to a stable teacher-student relationship. It is important that children have choices in the classroom that are based on their unique needs, values, and aspirations (Platt, 2018). When a child makes a choice that is: 1) self-driven, 2) motivated from within, and 3) lacking in coercion, they improve their goal achievement and self-regulation status, due, in part to the resultant release of dopamine and activation of the reward center in the brain (Bailey, 2015).

In the present study, the social behavior and academic performance of the research participants were examined to see if providing a choice of assignments made a difference in the dependent variables being assessed (i.e., task engagement, disruptions, and correct responses). A broader goal of this research was to expand the repertoire of methods of positive behavior support interventions for use in the special education classroom that increase intrinsic motivation.

METHOD

PARTICIPANTS AND SETTING

In total there were three student participants in this study. The intervention, choice-making, was implemented by the special education teacher during social skills instruction in a self-contained special education classroom. Prior to implementation, the special education teacher received specific training on how to implement the intervention.

Each student participant in the study was diagnosed with an emotional disability and educated in a self-contained classroom. Table 1 provides a summary of student characteristics (i.e., grade, age, gender ethnicity, disability status).

Table 1
Summary of Student Characteristics

Student Subject	Grade	Age	Gender	Ethnicity	Disability
Lincoln	4th	8 years 8 months	Male	Caucasian	ED (primary)
Joslyn	5th	10 years 11 months	Female	African-American	Cognitive Disability – Mild (primary) ED (secondary)
Ace	2nd	7 years 5 months	Male	Caucasian	ED (primary)

During the time the study was conducted, Lincoln attended school all day and received 60 minutes of direct special education support in the self-contained setting. Specifically, he began and ended his day with 30 minutes in the self-contained classroom. During that time, he received social skills instruction and received help with organizing himself for the day. He attended general education classes for core academic areas. The multidisciplinary team at Lincoln's school created for him a Behavioral Intervention Plan (BIP) that addressed attention to tasks and staying in assigned areas. The second participant, Joslyn was in the foster care system and during the duration of the study, her maternal parent went through the court system to gain her parental rights back. Joslyn received general education in special areas (i.e., gym, art, music, and library) but received all core academics in the self-contained setting. Joslyn's behavioral struggles addressed in her BIP are related to task attention; Joslyn regularly struggled to complete academic tasks without the help of a classroom para-professional. The final student participant, Ace, was on a reduced day of 3 hours. His BIP addressed self-regulation and non-preferred task attention. That is, when presented with a task that was non-preferred, Ace struggled to complete the task.

DESIGN

This study employed a single-subject multiple-baseline, across-participants design (Ledford & Gast, 2018) to evaluate the effects of choice-making opportunities on the behavior and academics of students with ED. Student engagement level was observed to see if an increase in engagement occurred when choice-making opportunities were provided. Additionally, the number of

disruptions during independent seat work was assessed, as was the number of correct responses on independent social skills assignments. Implementation began with gathering baseline data for all participants. When engagement baseline data of the first participant were stable for at least five sessions or showed a counter-therapeutic trend, the intervention was introduced to the first participant only while data were continuously collected on the other participants. When the first participant reached the specified criterion of at least five data points of an increasing level or trend and the baseline data were stable for the second participant (or showed a counter-therapeutic trend), the intervention was applied to the second participant while data were continuously collected on the third participant. When the second participant reached the specified criterion of at least five data points of an increasing level or trend and the baseline data were stable for the third participant (or showed a counter-therapeutic trend), the intervention was applied to the third participant.

INDEPENDENT VARIABLE

The independent variable, or the intervention, for this research study was choice-making opportunities. Choice-making opportunities "manipulate the context of arrangement by providing the individual with the opportunity to choose from an array of multiple stimulus options" (Jolivette et al., 2001, p. 131). Prior to data collection, the researcher, in collaboration with the special education teacher who implemented the intervention, designed social skills independent work that included three activities for the student to choose between (see Appendix A for a sample of activities). The work was based on the students' IEP goals, current level of academic achievement, and the *MindUP Curriculum*. Additionally, the student's unique preferences were taken into consideration. For example, Joslyn enjoyed puzzles so the researcher made sure choices were included that aligned with her likes and preferences.

Prior to data collection, the authors trained the special education teacher on how to present choice-making as an opportunity by delivering "a verbal statement or gesture from the teacher that identifies two or more response options an individual may make under specific conditions" (Jolivette et al., 2001, p. 132). The purpose of the choice condition training session was to train the special education teacher on how to deliver the choices to her students. During this training session, the researcher reviewed six steps of how to provide a choice: "1) Offer the individual two or more options, 2) Ask the individual to make a choice, 3) Provide wait time for the individual to make his or her choice, 4) Wait for the individual's response, 5) Reinforce with the option chosen (i.e., give the item to the individual), and 6) If the individual does not make a choice, prompt the individual to choose from the provided options" (Jolivette et al., 2001, p. 134). Through the use of

modeling and role playing, the special education teacher trained until 100% of the steps were implemented correctly.

DEPENDENT VARIABLES

The dependent variables assessed were: 1) task engagement, 2) disruptive behavior, and 3) problems correct. For the purpose of this study, task engagement was defined as "student engaging in or working on the independent assignment with eyes and hands on the assigned materials required to complete the assignment in accordance with the teacher's directions" (Jolivette et al., 2001, p. 136). Disruptive behavior was defined as, "student (a) distracting peers from their tasks by talking to peers about unrelated topics or asking peers for answers to the assignment; (b) elopement (leaving assigned area without permission); (c) making loud noises or verbal outbursts; (d) tantruming; and/or (e) destroying property for 3s or more consecutively" (Jolivette et al., 2001, p. 136). Correct responses were defined as the number of attempted task problems answered correctly.

DATA COLLECTION

During the first fifteen minutes of the social skills seatwork, the special education teacher implemented procedures for the choice-making intervention. During this time, the researcher observed the teacher to assess treatment fidelity (i.e., that she was following the choice and no-choice procedures). During the data collection period, treatment fidelity of 100% was reached. Each session was then video recorded to observe student behaviors at their desks during independent seat work. The time for these video recordings ranged from 5 to 10 minutes depending on how long each student participant took to complete the assignment.

Each day after morning announcements when the special education teacher assigned the activity or gave choices, the researcher positioned herself in an area of the classroom that was not a disruption to the learning environment and set up a video camera at such an angle that it would capture all student participants. The student participants knew that the researcher was recording them doing their work and occasionally, the researcher had to ask participants to move so she could see them better (i.e., clear vision of their faces and hands). The video recordings ended each day when the last participant was finished with his/her work.

The researcher coded all video recordings daily using the behavior frequency chart and duration per occurrence recording sheet. For this research study, time per occurrence was used. While coding the videos daily, a timing device (i.e., timer on the video application) was used to count the number of seconds the participants were engaged. From this information, the number of occurrences—defined as the duration of engagement until there was a disruption--and the total duration were calculated. The duration per occurrence was calculated by taking the

total duration divided by the number of occurrences. To measure disruptions, frequency recording was used. While coding the videos daily, tally marks were recorded each time a student participant exhibited disruptive behavior. After coding the videos, the researcher input the data into an Excel spreadsheet to assess the data for stability and trend. These data were used to guide the researcher's decision of when to direct the teacher to begin implementing the choice making intervention for each individual participant. Additionally, the researcher uploaded the video each day to a secure computer database for the second author to access for inter-observer coding.

Supplemental data were also collected during this research study. The classroom para-professional kept a checklist with anecdotal notes addressing setting events for the student participants. Examples of setting events include but are not limited to: arriving late to school, time-out, seclusion, emergency safety physical intervention (ESPI), and/or complaining of being sick.

RESULTS

TASK ENGAGEMENT

On average, the three participants demonstrated a higher percentage of task engagement during the intervention condition (72.8%) as compared to the baseline condition (59.44%). However, there were moderate to high percentages of overlapping data points between conditions for all participants. During the intervention condition, moderate to high percentages of task engagement scores were variable for all participants with 78.95%, 58.33%, and 60% of the data falling on or within the stability envelope for Joslyn, Lincoln and Ace, respectively. Despite higher mean levels of task engagement from the baseline condition to the intervention condition, the presence of overlapping data points between conditions and moderate to high variability in the data precluded establishment of a functional relationship between choice-making and task engagement during social skills instruction. Visual representation of percentage of task engagement is presented in Figure 1.

DISRUPTION

The mean number of disruptions across participants was 5.92 during the baseline condition and 3.19 during the intervention condition. However, the overlapping data points between conditions were moderate to high, ranging from 0% to 63.16%. Variability of the data were low to moderate during the intervention condition, ranging from 8.33% to 40% falling on or within the stability envelope. The mean number of disruptions for all participants decreased from the baseline

condition to the intervention condition. However, there were low to moderate levels of variability and overlapping data points between conditions, so a functional relationship could not be established between choice-making and number of disruptions during social skills instruction. Visual representation of percentage of task engagement is presented in Figure 2.

CORRECT RESPONSES

Social skills assignments were collected by the research and coded by number of attempted responses and number of correct responses. Correct responses was defined as, number of attempted task problems answered correctly. Visual representation of the number of responses is presented in Figure 3.

During the baseline condition, the mean number of correct responses for all participants was 3.76 and 3.79 during the intervention condition. The non-overlapping data points between conditions ranged from 0% to 10.53%. Variability of the data were moderate to high during the intervention condition, ranging from 17% to 40% falling on or within the stability envelope.

In regard to correct responses, there was a slight increase in correct problems from the baseline condition to the intervention condition. However, the data had a moderate to high level of variability and there were overlapping data points between conditions. As such, a functional relationship could not be established between choice-making and correct responses during social skills instruction.

DISCUSSION

To summarize, the key findings of this research study do not fully provide evidence of the effectiveness of choice making opportunities in the domain of social skills instruction for elementary school students with ED. These results do not support the current literature on choice-making as an ABI. However, results of the present study do include mean increased task engagement (ranging from 59.44% to 72.80%) and mean decrease in disruptive behaviors (ranging from 5.92 to 3.19).

The researcher speculates that the potential positive outcomes associated with choice-making interventions were not seen in this research study for several reasons. First, social skills are an area of particular struggle for students with ED. With major deficiencies in this area, instruction in social skills may need to be explicit (Jolivette et al., 2000). Being provided with choices during social skills instruction could be too overstimulating. Secondly, setting events played a role in the behavior of these students. When the students were experiencing events that set up their behavior for that day, it was seen that choice-making had no effect. For example, during the intervention condition Joslyn experienced outlier data points

for sessions 15 and 16 that coincided with a setting event. Researcher notes reflected she was in the middle of a court hearing for her foster family and on sessions 15 and 16 her family was in court.

Despite inconclusive results, the findings from this study do extend the literature in the field. It is important for researchers to know that choice-making as an ABI in social skills instruction was not found to be as effective as in mathematics and English language arts. Although a functional relationship could not be established between choice-making opportunities and the dependent variables in the study (i.e., task engagement, disruptions, correct responses) it is important to note that there was a mean increase in task engagement from the baseline to intervention condition across participants, a mean decrease in disruptive behavior across participants, and an increase in problems correctly answered for two of three participants. Experimental control was not achieved in this study; however, these results indicate that choice-making may have a positive outcome on social behaviors in the classroom. Further studies are needed to determine if a functional relationship can be established.

The limitations of this study should be considered when interpreting the results and when attempting to further the research in the area of choice-making opportunities as an ABI.

In this research study, the long baseline condition for Joslyn constituted a maturation threat. Joslyn was the only participant that was present for all of the research sessions. She was the first participant to receive the intervention thus she remained in the intervention condition for the longest period of time. During this time, a history event played a big role in behavior change as well. She was in the middle of a court hearing to have her placed in a different foster home. This played a significant role in explaining the decreasing data points in her task engagement and number of disruptions during the intervention condition. Another limitation to this research study had to do with the choices that were provided to the student participants. It is possible that the students could have responded better to choice-making if the choices of activities were different. The researcher asked the special education teacher about the student participants' preferences in assignments and chose puzzles (i.e., word searches and crossword puzzles), cutting and pasting activities, and hands-on file folder activities. However, an interest survey or preference assessment was not given directly to the students. This could have affected the study and is therefore a limitation. Additionally, there is a noted scarcity in evidence-based social skills curriculum. The researcher had to design many activities or purchase designed materials. These activities were not evidence-based. This is a limitation to the study.

In summary, although results indicated a mean increase in task engagement along with a mean decrease in disruptive behaviors for three students with ED participating in social skills instruction with choices of assignments provided,

failure to establish experimental control precluded establishment of a functional relationship. The study suggests that while choice-making opportunities have been linked to increasing behavior and academic outcomes in mathematics and English language arts, choice-making opportunities are not yet shown to be effective in social skills instruction. Future studies should investigate different social skills curriculum could be effective with choice-making as an intervention.

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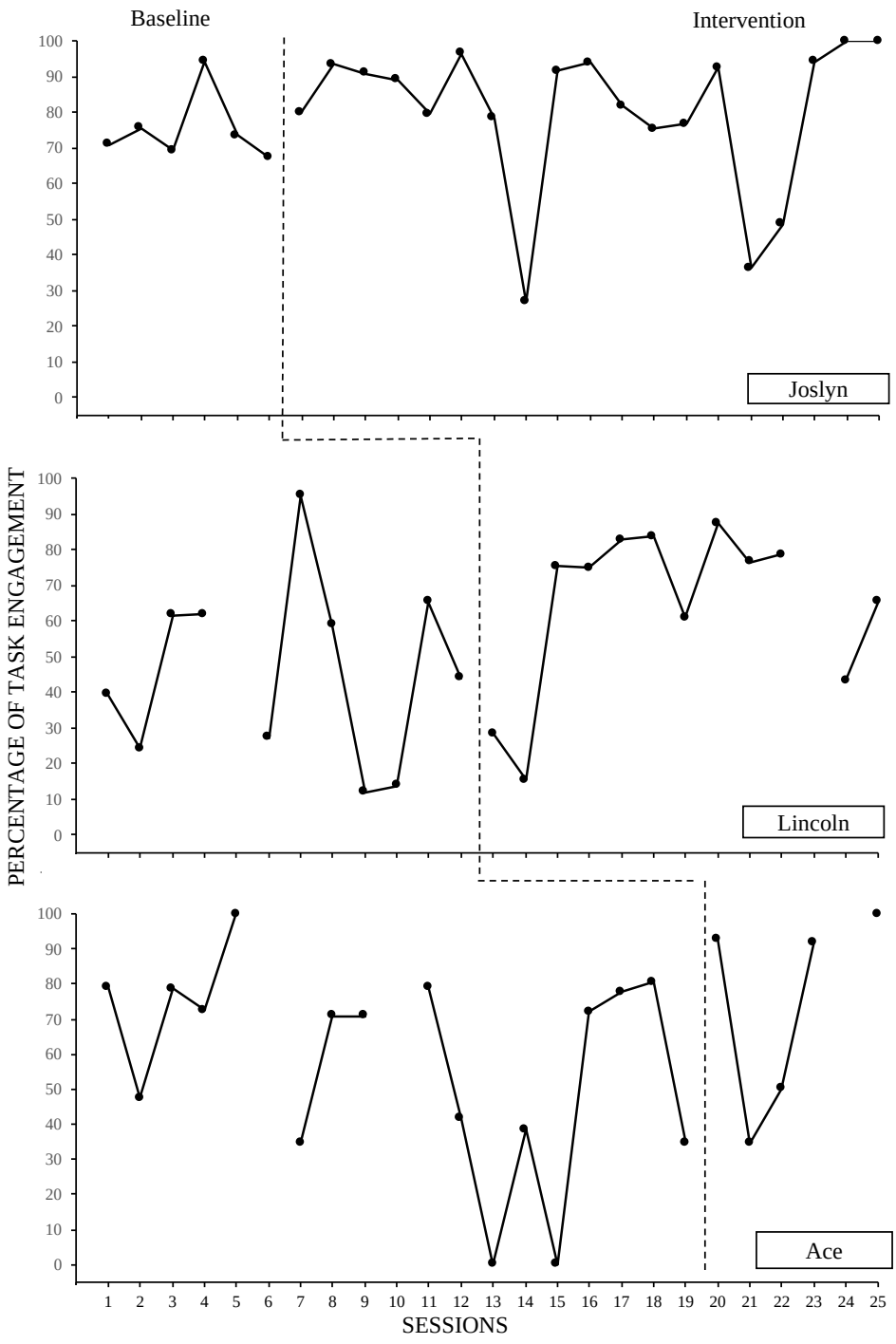


Figure 1. *Percentage of Task Engagement*

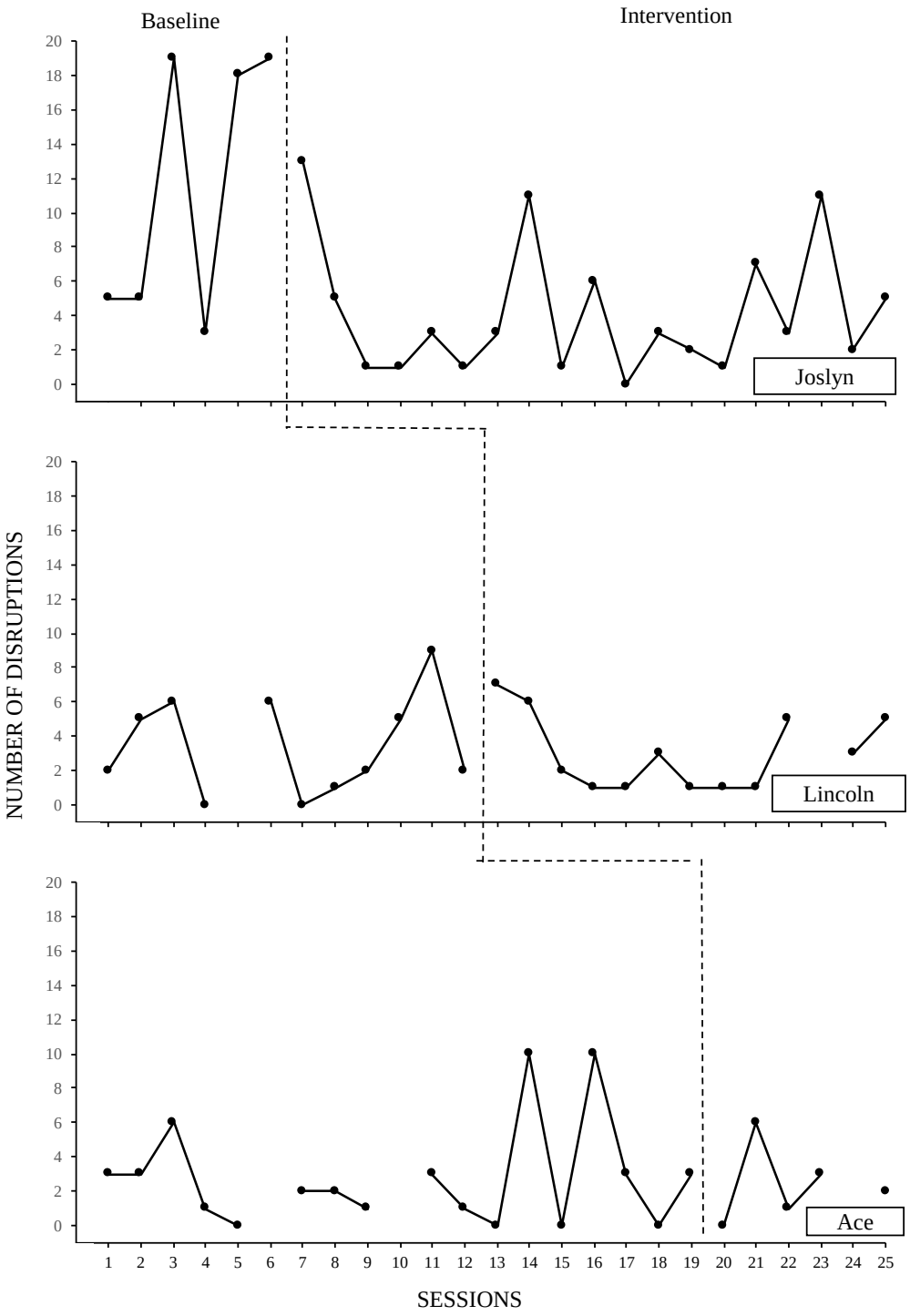


Figure 2. *Number of Participant Disruptions*

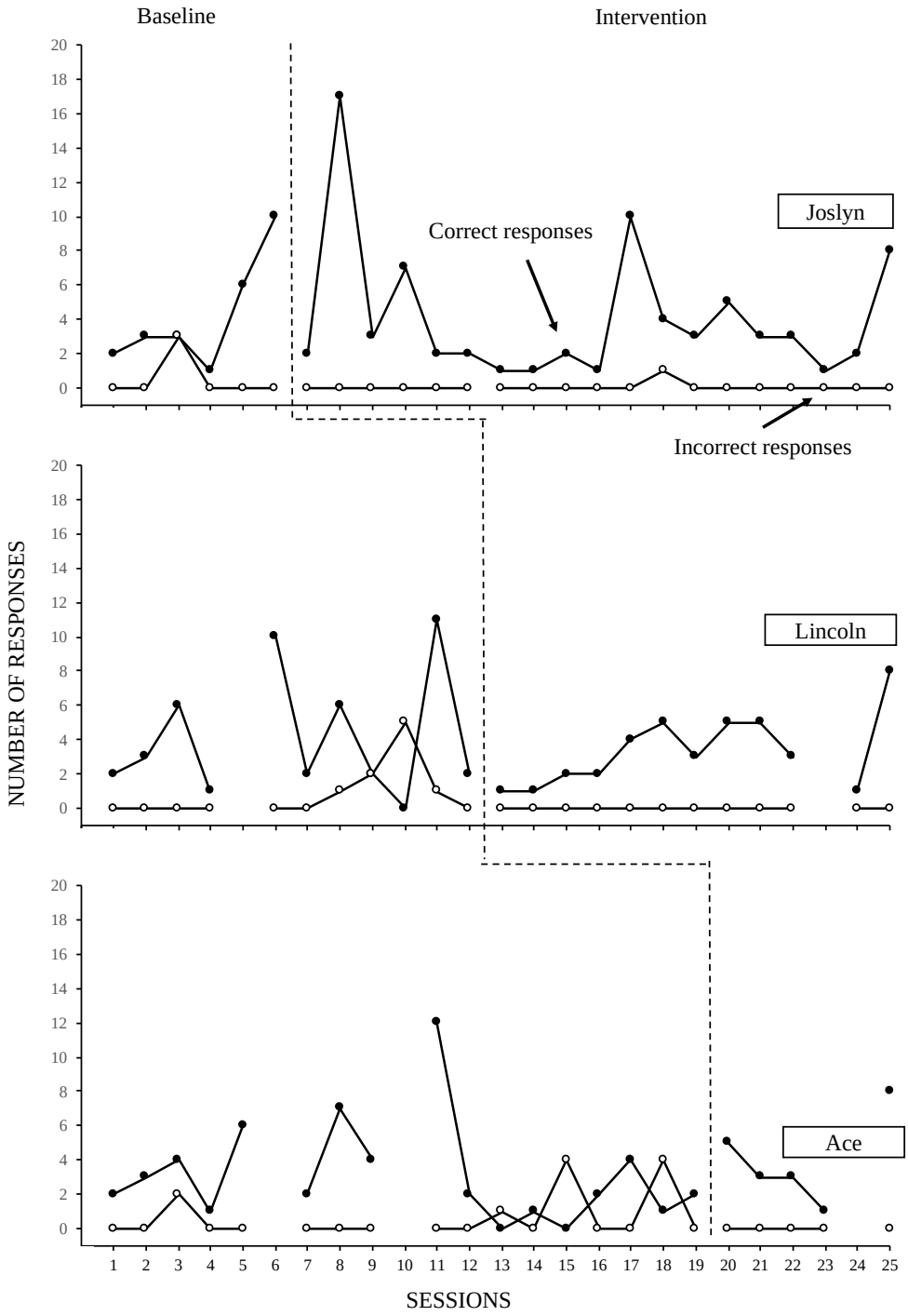


Figure 3. *Number of Participant Responses*

Journal Prompt # 3

Instructions: Complete the following questions.

1. Write a poem about the amygdala, the hippocampus, and the prefrontal cortex. To get started, think about these questions: Why is each part important? How do the parts work together? When does each part go into action?

_____

_____

_____

_____

Instructions: Respond to the writing prompt.

Write about or draw a favorite memory that's stored in your hippocampus. Why do you think your prefrontal cortex saved that memory?

_____

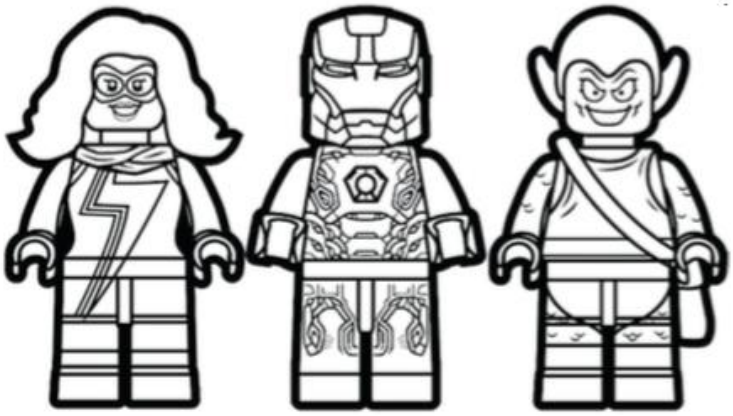
_____

_____

Journal Prompt # 4

Instructions: Complete the following questions.

1. Imagine the amygdala, hippocampus, and prefrontal cortex as superheroes. Give each a name to explain its role and color the superheroes.



Amygdala	Hippocampus	Prefrontal cortex

Appendix A. *Unit 1: Getting Focused, Lesson 1: How Our Brain Works (MindUp Curriculum) Activity Choices 1-3*