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# *THE EFFECTS OF A B-CALM HEADSET ON THE ATTENDING BEHAVIORS OF TWO PRESCHOOLERS WITH DEVELOPMENTAL DELAYS*

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*KATIE STEVENSON AND JOY TAYLOR  
THE UNIVERSITY OF NORTHERN IOWA*

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## **Purpose of study:**

The purpose of this study is to examine the effects of a B-Calm Headset on the independent play behaviors of two preschool children with developmental delays.

## **Methods:**

### **Participants:**

Two children participated in the research; Child A and Child B.

**Child A:** Child A was a four year old Caucasian, male. He had a younger brother and his parents are married. His independent play skills were present but not as advanced as other children his age. Child A's attention to and engagement with play materials was not consistent and varied with the amount of noise and stimulation in the environment. He was often distracted by background noise and movement in the classroom. Child A possessed some appropriate social interaction skills such as sharing, noticing others and verbal responses, but these did not occur on a regular or consistent basis that is expected for four year old children.

**Child B:** Child B was also a four year old, Caucasian, male. He lived in an urban setting with his mother, father, and a step-sister. He had a diagnosis of Autism Spectrum Disorder and required a very structured and consistent schedule to be able to successful in routine

preschool activities. Child B relied heavily on a PECS picture schedule to have smooth transitions during the school day, and prefer to play in a 1:1 setting at a small table with minimal distractions. Child B also possessed some appropriate play skills, but required a considerable amount of teacher prompting and support to participate in unstructured activities with peers. He also displayed some difficulty staying focused or engaged in independent play at the beginning of the study.

### **Setting:**

This study took place in an early childhood special education preschool classroom. The classroom consisted of one lead teacher, two associates, seven children in the morning, and eight children in the afternoon. The teacher ran a highly structured room with a set, consistent routine. She and the associates provided high levels of support for each child as needed. The room was roughly 24 feet by 20 feet and was broken up into nine center areas. The intervention was implemented at one of the meal/activity tables located in the middle of the room and was surrounded by various centers. During daily data collection in the classroom, the noise level ranged from mildly to fairly loud and was consistently so throughout baseline and intervention.

Two types of play activities were used during the data collection sessions; literacy and fine-motor. Literacy included, but was not limited to, sequencing cards, magnetic letters, and alphabet puzzles. Fine-motor activities included, but were

not limited to, pegs with pegboard, bristle blocks and Lincoln logs.

### **Experimental Measures:**

Data was collected using a partial interval time sampling method because it offered a relatively simple way to take the data, interpret observations, and to quickly assess the intervention's effectiveness. Each participant was observed for five consecutive minutes, twice daily with data being collected at ten second intervals. Other children were present in the same activity and vicinity during all experimental sessions.

Data was collected on several types of child and teacher behaviors. Child behaviors included appropriate behavior, off task behavior and inappropriate behavior. Teacher behaviors included prompts, approval and general comments.

### **Experimental design:**

An alternating treatment design was used for this study so that the effects of the variable could be examined.

### **Phases:**

**Baseline:** Baseline data was collected for six school days prior to the start of the intervention. During baseline, data was taken twice daily, for five consecutive minutes, at ten second intervals. The teacher remained in close proximity, but did not support children's play or interaction.

**Alternating Condition:** This phase began after baseline, once performance varied less than twenty-percent, and ran for eight days. During the intervention, data was taken twice daily, for five consecutive minutes at ten second intervals. The alternating conditions consisted of baseline and intervention, which involved a B-Calm device. The teacher continued to stay in close proximity and directed 2-3 general comments that related to children's involvement in the play activity.

**Intervention Only Condition:** This phase ran for five school days and data continued to be taken twice daily, for five consecutive minutes at ten second intervals. All sessions involved the child's use of B-Calm device and teacher involvement was identical to the previous alternating condition.

### **Results:**

#### **Graphs and Narrative:**

The results of this study are summarized for each session during Baseline, Alternating Condition, and Intervention Only Condition. A continuous chart showing the results from each phase may be found on this handout. Child A showed a higher level of on-task behavior in Fine Motor activities during the Baseline condition (means of 72% and 48% for fine motor and literacy, respectively). Use of the B-Calm device led to increases in Child A's on task behavior in literacy during Intervention phase and these results were sustained during the final condition. Child B demonstrated higher levels of on-task behavior with the B-Calm head throughout the alternating condition.

#### **Conclusions:**

The results indicated that the B-calm device did appear to improve the ability for the participants to engage in independent play. However, the findings did not appear to be consistent or profound over time.

#### **Implications:**

Overall, this preliminary study showed that the B-calm audio device leads to higher rates of on-task behavior than those found in baseline. The researchers were surprised by the unanticipated variation in results from phase to phase; this highlights the need for more research with this device. A child with more challenges than just attention and independent play skills could be a potential participant in a future study with the B-calm device. Perhaps the effects that different and new background noises have on a child could also be examined. This study was the first to draw attention to the potential this intervention may have for children in an educational study. The practicality and functionality of the B-calm add to its appeal and hopefully future research and findings will do the same.

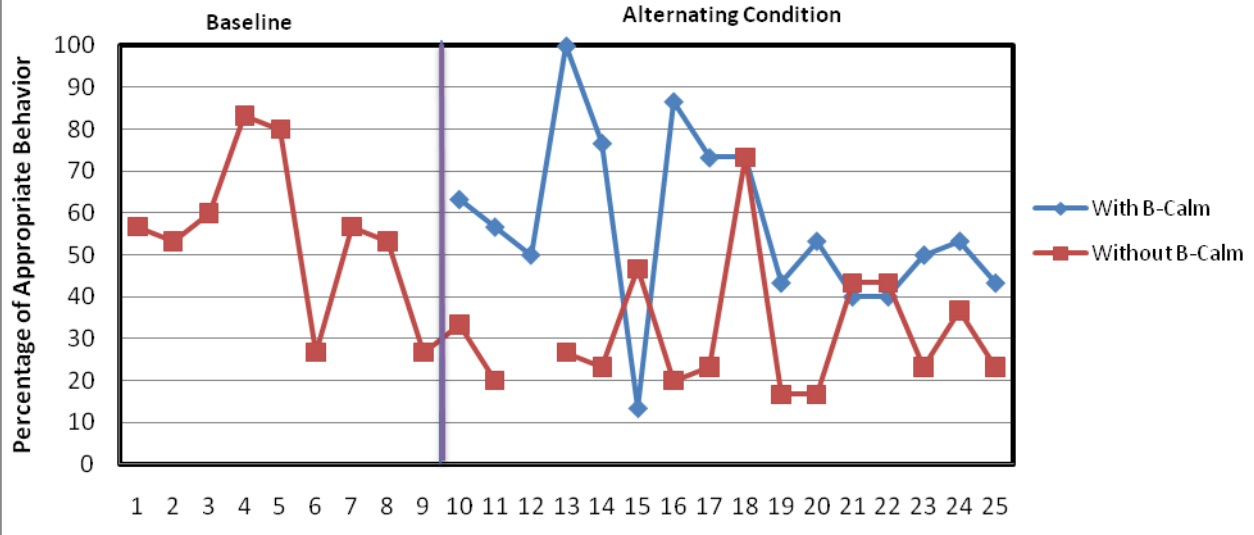
For more information concerning this study, please contact:

Katie Stevenson [kstevenson@aea267.k12.ia.us](mailto:kstevenson@aea267.k12.ia.us)

or

Joy Taylor [joy.taylor@dmps.k12.ia.us](mailto:joy.taylor@dmps.k12.ia.us)

### Child B Data



### Child A Data

