TRAINING ELEMENTARY STUDENTS WITH DEVELOPMENTAL DISABILITIES TO RECRUIT TEACHER ATTENTION IN AN INCLUSIVE CLASSROOM: EFFECTS OF TEACHER PRAISE AND ACADEMIC PRODUCTIVITY

A Thesis

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by

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* * * * *

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ABSTRACT

Inclusion is the current trend in special education. At the setting for this study, the special education students were included into a regular education classroom. These students had difficulty completing assignments and asking for help from the general education teacher. A method to help these students is to teach them how to ask for help. Research has shown that students can be taught to recruit attention from the teacher and to increase the amount of praise they receive.

This study evaluated an instructional program designed to teach students to recruit teacher attention. Training consisted of direct instruction, role playing, modeling, error correction, and reinforcement in the special education classroom. The effects of the recruitment training was assessed by a measure of; (1) the frequency and type of recruiting responses by students in the general education classroom, (2) the rate and type of teacher attention and feedback given to the students while in the general education classroom and (3) academic productivity and accuracy on academic work while in the general education classroom.

The subjects were four elementary student ages 10 to 11 with developmental disabilities. The students were trained by their special education teacher within the special education classroom to recruit teacher praise. The students were then taught to recruit
teacher praise while in the general education classroom when working on spelling assignments provided by the special education teacher.

Students were able to cue the teacher in the general education classroom 2 to 3 times per 20-minute session. Each student averaged 2 cues per session that resulted in teacher praise at least one time. This was an improvement from baseline where students were not cueing the teacher and not receiving teacher praise. Students also were able to improve the frequency in which they completed their assignments. Three of the four students completed 40% more work in generalization phase than baseline. The accuracy on these assignments also increased. Accuracy for the assignments was at least 30% more in generalization than baseline for three of the four students.
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CHAPTER 1

INTRODUCTION

Inclusion, the social and curricular integration of students with disabilities into general education classrooms, is a dominant theme in special education today. When effectively practiced, inclusion can increase the special needs student's exposure to diverse academic content and positive peer role models. Students with disabilities have the opportunity to make friends with general education students and to be challenged academically. Teachers are concerned, however, about how to integrate the students with disabilities into the general education classroom.

Many administrators and teachers who have been willing to try the inclusion have already started integrating students, but they are unsure about what to do next. A willing general education teacher is found and children with disabilities begin to go to the general education classroom. The easy part is over. Many questions begin to become an issue for both the special and general education teachers: How do I modify the lessons to meet the needs of the student with a disability? How much time will the student need from me? What should I do if the student has a discipline problem? What is the special education teacher going to do while I have this student in my class? What is the special
education teacher going to do for me to compensate for me taking her students? The list
goes on and on.

The special education teacher can alleviate some of the concern of the general
education teacher by helping with classroom behavior modification plans. She can offer
suggestions on how to modify lessons in a way that addresses each child’s learning style.
The special education teacher may even team teach with the general education teacher to
help alleviate some of the teaching duties. In this way, the special education teacher will
be able to provide extra assistance to general education students who may be struggling.
The general education teacher can also share her teaching knowledge to help some of the
students with disabilities.

It all sounds much easier than it is. There is much controversy over the need for
inclusion of students with disabilities and general education students. Advocates of
students with behavioral disabilities are concerned that these students are identified as
needing a smaller class by the definition of their disability. Proponents for students with
learning disabilities believe pull-out programs are essential to the students success in the
general education setting. Conversely, students with mild disabilities benefit from the
socialization and academic exposure that is found within an inclusionary setting. The main
concern of parents of students with mild disabilities is to provide social skill training for
their child and to improve how their child is perceived by general education students. The
academics that the teacher of students with developmental disabilities worries about, is not
usually the parents greatest concern (Algozzine, Maheady, Sacca, O’Shea, & O’Shea,
1990; Braatan, Kauffman, Braatan, Polsgrove, & Nelson, 1988; Brown, Schwarz, Udari-

If it is found appropriate in a multi-factored evaluation for a student to be included, then there has to be some way to help make the transition a little easier for all parties involved, especially the students with disabilities. The students are removed from a world where they have received extra help with work and placed in a classroom of up to 30 students that all need teacher attention. They often sit in the classroom a little scared, or begin to act out so that they might be able to return to safe, attention-filled separate special education room. One way to make the transition easier is to teach the students with disabilities how and when to ask the teacher for help. Students who can effectively and appropriately recruit teacher attention will successfully compete for teacher attention and possibly help the teacher reinforce the student more while she is in the general education classroom.

**Purpose of the Study**

This study evaluated an instructional intervention designed to teach elementary students with developmental disabilities to recruit teacher attention in the general education classroom. Specifically, the students were taught to evaluate when help was needed or show work, when to recruit the teacher, and what to say to the teacher. Students were taught to show their work two to three times per work page. They were also trained to show work or ask for help with questions like: “How am I doing?” or
“Does this look right?” Training consisted of modeling, role playing, error correction, and reinforcement in the special education classroom. The effects of recruitment training were assessed by measures of: (1) the frequency and type of recruiting responses by the students in the general education classroom, (2) the frequency and type of teacher attention and feedback received by students in the general education classroom and (3) the productivity and accuracy of the students’ academic worksheets in the general education classroom.

Review of Literature

This section briefly discusses inclusion and reviews literature in generalization and recruiting reinforcement.

Generalization of Skills Across Settings

A broad definition of generalization refers to a behavior change that occurs in untrained conditions (Cooper, Heron, & Heward, 1987). Students can be trained in a setting to emit a behavior. This behavior can generalize by occurring in another setting different than the training setting. In this study, students are taught to recruit in the special education classroom and then generalize that behavior into the general education classroom. Once students began to recruit in the generalization setting, they came into contact with a natural community of reinforcement of teacher praise and continued the recruiting behavior.

Baer and Wolf (1967) introduced the notion of natural communities of reinforcement as a necessary factor optimum for generalization of skills across settings. A natural community of reinforcement is a community where behavior modifiers are
effective and waiting for introduction to the subject. These communities serve as a behavioral trap where "only a simple response is necessary to enter the trap, yet once entered, the trap cannot be resisted in creating general behavior change" (p.321). The student only needs to have an entry response to come in contact with one of these natural communities.

Stokes and Baer (1977) also address the notion of training for generalization and meeting natural communities of reinforcement. One way that students often generalize is by training for the behavior change and hoping that the student generalizes the behavior to another setting without the behavior being specifically programmed. If the behavior is not generalized, then the next step is to systematically modify programming to include the nongeneralized conditions. After programming sequentially, the student is introduced to natural maintaining contingencies. This is where the student encounters natural communities of reinforcement in the generality setting. Occasionally this natural reinforcement lies dormant. The student is taught a behavior that taps into the natural reinforcement so that the behavior will generalize.

Tactics to facilitate generalization and the importance of natural communities of reinforcement are further outlined by Stokes and Osnes (1989). They outline 12 programming tactics that are categorized into three areas of general principles: (1) exploit current functional contingencies, (2) train diversely and (3) incorporate functional mediators. The importance of natural communities and their reinforcement are stressed in exploiting current functional contingencies. The student should be trained to contact natural consequences, recruit natural consequences, modify maladaptive consequences,
and have occurrence of generalization reinforced. Behaviors that are likely to come into contact with powerful reinforcers should be taught. Teaching students to recruit natural reinforcers will provide important consequences for the behavior and help the behavior to generalize.

Training students a behavior using positive and negative examples was found to be important for generalization by Horner, Eberhard, and Sheehan (1986) who taught generalized table bussing to students with moderate to severe disabilities. The students were taught how to bus tables and then instructed using negative examples of when not to bus a table. For instance, when people were still at the table or if the plate still had food. Students were able to appropriately bus tables in the training setting. The students were then able to generalize the skill to another cafeteria area.

Anderson-Inman and Purcell (1984) continue the discussion of generalization as a specific approach to prepare students for mainstreamed settings. This is accomplished by assessing the target environment, preparing students in the special education environment for behavioral competencies in general education, selecting and utilizing techniques to promote the transfer of acquired skills, and by monitoring student performance in the target environment. Success in the general education classroom requires social skills that are acceptable to teachers and peers, sufficient academic skills, and academic support skills such as seeking assistance, following directions and working efficiently.

Once the student is able to generalize a learned behavior, it is important to make sure that the behavior is maintained. Fowler and Baer (1981) determined if delayed reinforcement that was given late or early had any effect on generalization. Seven children
ages 4 and 5 were reinforced for appropriate classroom skills: sharing materials, activity praise, appropriate study posture, and conversation to peers. The student was reinforced immediately after the contingent setting for the target behavior and was rewarded with a sticker that could be exchanged for a small toy for the early feedback and reinforcement program. The student was reinforced at the end of the day for the target behavior in the contingent setting late feedback and reinforcement program. Generalization of the target behavior did not occur for the majority of the children in the early condition, however generalization immediately occurred for all students when the late feedback and reinforcement program was introduced.

Another approach to generalizing and maintaining a behavior was investigated by Rhode, Morgan, and Young (1983) who taught students to generalize self monitoring of their behavior into the general education classroom. The subjects were six behaviorally handicapped students had not been successful in a general education classroom due to disruptive behavior and refusal to work. The students were reinforced for appropriate behavior in the special education classroom and then were taught to self monitor their behavior. When acceptable levels of behavior were maintained, the students were taught a shorter form of self evaluation to use in the general education setting. The students were able to generalize the self monitoring and appropriate behavior into the general education classroom. For four of the students, self monitoring was faded out and the appropriate behavior was maintained.

Another study showed that generalization could be strengthened and maintained according to a random supervision schedule. Dunlap and Johnson (1985) investigated the
effects of predictable and unpredictable supervision on students on task responding in a preschool classroom for autistic children. Students were observed by a therapist at the same time each day for the predictable supervision. The therapist observed on a random schedule for the unpredictable supervision. The students exhibited higher levels of on task behavior during the unpredictable phase. Unpredictable supervision could be used to strengthen responding in generalization settings.

Maintenance of appropriate responding in a generality setting was also investigated by Dunlap, Koegel, Johnson, and O’Neill (1987). Three autistic students in a community setting were taught to maintain appropriate behavior using a variable reinforcement schedule of supervision. The students were not only able to maintain the behavior in the treatment environment, but were also able to maintain appropriate behavior in the community setting with infrequent and delayed contingencies.

In this study, students were trained to recruit in the special education classroom that could tap into the natural community of reinforcement available in the general education classroom (Baer & Wolf, 1967; Stokes & Baer, 1977; Stokes & Osnes, 1989). The students were taught to cue the teacher for praise which would serve as the behavioral trap. The students were trained using negative and positive examples of appropriate and inappropriate times to cue (Horner, Eberhard, & Sheehan, 1986). They were trained to identify places on work papers that served as a type of self-assessment that prompted the student to cue the teacher for praise (Rhode, Morgan, & Young, 1983). The cueing behavior represented appropriate cues that had been emitted in the generality setting by other students. Anderson-Inman & Purcell (1984) stress the need for academic
support skills such as seeking assistance and working efficiently.

Once the students were taught the skill of recruiting and were able to generalize the skill into the general education classroom, it was important for the students to maintain the behavior. Students were given feedback at the end of the day which was found to strengthen generalization in a study by Fowler and Baer (1981). The students were then reinforced on an unpredictable intermittent schedule during generalization to ensure that the skill would be maintained (Dunlap & Johnson, 1985; Dunlap, Keogel, Johnson, & O’Neill, 1987).

**Recruiting Teacher Attention**

Recruiting teacher attention is one method of training students to increase the amount of attention they receive. For special needs students to be successful in a general education classroom, it is important that the student be able to elicit teacher help. Teacher attention is important for the student to succeed academically.

Hughes (1973) discovered that teacher praise was instrumental in increasing academic achievement. The study was conducted within 13 classrooms of seventh grade students. The students were monitored during a 40 minute science class and then given a post test on the lesson. Pupil responding and teacher reactions were observed for effects on student post test scores. Student responding was found to have little effect on student achievement. However, teacher praise reactions did increase achievement on post tests.

Training students to recruit teacher or staff praise has been investigated in several studies within research literature. Seymour and Stokes (1976) taught four adolescent girls that were institutionalized in a maximum security facility for offenders to increase work
and cues that evoked staff praise during vocational training sessions. These four girls were selected to participate in the study because they were not responding to a staff-directed token program. The girls could earn tokens for appropriate behaviors in various settings and lost tokens for inappropriate behaviors. The tokens could be used to purchase special activities and privileges like outings from the institution or buying store articles. The study took place during weekdays from 8:45 a.m. to 4:30 p.m. where the girls were in any of four training areas: classroom, office, workshop, or kitchen. The girls were rated on five behaviors: work, interrupted work, nonwork, attention, and cues. Staff was rated on three behaviors: no response, attention, and praise. A therapist met with the girls each morning for 15 minutes and encouraged them to discuss progress in the vocational area, but no instructions or systematic reinforcement was given. The girls were taught to self-record their work production by writing the first letter of their name on the back of a 20 by 12.5 cm card. The girls would write their initial next to work behaviors listed on the card if they worked during a certain interval of time. Tokens were given to the girls immediately after self-recording initially and then later at the end of the day. The girls were given one token for each two marks on the card. The therapist introduced the idea of evoking praise by telling the girls that staff did not seem to be responding to the improvement in their work that occurred with the self-recording. At the end of the interval of work time that the therapist delivered tokens for work behavior, the therapist also gave a token for each cue by the girl. Cues were statements that invited staff to comment favorably on the girl’s general behavior or work. For example, “Am I working well?” or “Look how well I’ve done.” There was an increase of work behavior and cues
for three of four of the girls with self-recording. The cues also evoked higher rates of staff praise. The girl’s behavior and staff behavior was maintained during short follow-up periods when there were no tokens given to the girls for self-recording.

Stokes, Fowler, and Baer (1978) also taught students to recruit teacher attention. The subjects in this study were eight children ages 4 to 6. Four of the children were in the general education classes and four attended special needs classes. The children were taught to cue the teacher for attention. A cue would be recorded if the children asked a question inviting favorable comments from the teacher. For example, “Look how much I’ve done” and “Is this right?” Trainer and teacher praise was defined as verbal praise, encouragement, positive evaluative comments, and statements of approval regarding the child’s behavior or work. The children quickly learned to cue in the training setting, but were unable to generalize to other teachers in concurrent natural situations. Therefore, generalized responding was taught by the experimenter. These sessions were conducted in the same tutoring room as training, however not at the same time as training. This tutoring room was located adjacent to the children’s regular classroom. A teacher prober was brought into the room for generalization training. The instructions were the same as with the training sessions, but the trainers just instructed the students to do the same with the probes as they had with the trainer. The children were then able to cue appropriately and cue across teachers. The number of cues and praise increased in the generalization programming.

A study by Morgan, Young, and Goldstein (1983) sought to validate the efficacy of teaching students to recruit teacher attention. Three students with behavioral disorders
were taught to ask teachers for help in completing a task with statements such as “What do I do now?”, How do I do this?”, or “Would you please repeat that direction?” The students were then taught to prompt the teacher for approval with such statements like “I tried hard to pay attention.” When they received approval from the teacher, the students were taught to make a positive comment to the teacher like “Thank you for your help.” Teacher help was defined as any response that provided feedback intended to solve the problem at hand. Student and teacher behavior were recorded for 30-minute periods. Students would earn special activities for the recruiting behavior. This study found that students were able to increase the amount of teacher help they received in the general education classroom. However, after fading out the reinforcement given for recruiting, students were able to maintain the behavior in a maintenance phase of once a week for two to three weeks. This study did not find that cues increased teacher praise rates.

Another study that focused on training elementary students to prompt teacher praise was reported by Hrydowy, Stokes, and Martin (1984). The subjects in this study were six fourth grade students who were taught to cue appropriate feedback from their teachers. The students were trained for a 20 minute period in a training area. Immediately following training, students were observed by “classroom guests.” The students were unaware of the true reason for the observers presence. Data were obtained when a student asked a teacher a question requesting positive feedback on completed academic tasks or general behavior. Teacher praise was defined as a verbal statement made by the teacher indicating approval or a positive evaluation of the student’s academic or general behavior. In this study, there was spontaneous generalization of the cueing skill to the classroom by
five out of six students. Increases in students cueing also occurred during instructed generalization. Furthermore, teacher praise increased for four of the six children during the study.

In another study, Mank and Horner (1987) taught young adults ages 18 to 20 to self-monitor work rate on job tasks and obtain self-recruited feedback from supervisors. The students were trained how to self-monitor units of work completed and the amount of time spent working on the task. Students’ self-recorded data and trainer recorded data were compared for percent accuracy. Students were then taught to recruit contingent feedback from supervisors in their work setting. Self-monitored work production was then compared to a standard of work acceptable production. If the student’s work completion fell in the acceptable range, the student recorded a “+” in their work notebook. If the student’s work completion fell in the unacceptable range, the student recorded a “-” in the notebook. The student was then instructed to take the notebook to the supervisor to receive praise or disapproval and encouragement to do better the next day. There was no evidence in this study that self-monitoring skills helped to maintain work completion. However, a functional relationship was found to exist between recruiting reinforcement and improved work rate.

Harchick, Harchick, Luce, and Sherman (1990) addressed teaching severely disabled children to recruit praise from adults. The subjects were four boys ages 9 to 13 who lived in a community-based group home. The students were trained to recruit or cue praise only while upstairs in the group home and only during one activity. In this way, there were several ways to evaluate generalization of the student’s behavior.
Children were taught to ask questions regarding work or make requests that invited favorable comments from the staff. For example, “How was that?” or “Was that a good job?” It was found that the student learned the skill, generalized this skill to other settings (bedroom, kitchen), and maintained the skill over a six week period. Two of the students generalized appropriate attention seeking into their academic classrooms. Student cues after task completion increased praise by the staff.

The most recent study investigating recruiting was conducted by Connell, Carta, and Baer (1993) who taught preschoolers with developmental delays to self-assess performance and recruit teacher praise. The participants were four children in an early intervention preschool. The children were selected because they had difficulty staying on task. Training was conducted for 15 to 20 minutes in another part of the building at the beginning of free play time. Various play materials were available that were similar to those in the students regular classroom. The regular classroom was the generalization setting. Children were rated on four areas of behavior: active engagement, competing behavior, opportunity to recruit and appropriate recruitment. The teacher’s behavior was rated on total teacher praise of the student. Behavior was recorded during 10-second time interval samples. Children were trained one at a time in another area of the building. The child played, was told to clean up as quickly as possible, find an assigned chair, and move it to a designated area of the room to sit in. The child was praised noncontingently during this time. The child was given a sticker at the end of the time for “coming to work” with the trainer. Self assessment was taught where the child recorded a happy or sad face an a chart with the help of the trainer at the end of the training period. The trainer read the
target behavior and the child marked a happy or sad face on a small chart. The trainer compared the child’s assessment with his own and praised the child if the child had made an accurate assessment. Inaccurate assessments received corrective feedback. The student was next taught to recruit praise from the trainer by saying “I’m done” and approaching the trainer with open arms for a hug. The trainer only delivered praise when the child cued appropriately. Corrective feedback was immediately given for inappropriate recruitment. For example, “Now is not a good time to recruit, you haven’t been working.” In this study, pairing self assessment with recruitment was shown to increase active engagement, appropriate recruitment, and total teacher praise.

Several of the studies show that recruiting can increase teacher praise toward the students. Similarly, previous studies support that students behavior can change teacher behavior. The teacher may increase praise, offer more help, rate children as more likable, competent and attractive, and decrease negative comments toward the student (Cantor & Gelfand, 1977; Sherman & Cormier, 1974). The recruiting studies also show that the students can both learn and maintain the recruiting behavior and that this behavior can be generalized across settings.

Research Questions

This study was designed to obtain objective data in response to three primary research questions:

1. What are the effects of training elementary children with developmental disabilities to recruit teacher attention in the special education classroom on the frequency and type of recruiting responses they emit in the general education
classroom?

2. What are the effects of training elementary children with developmental disabilities to recruit teacher attention in the special education classroom on the frequency and type of teacher attention and feedback received by the students in the general education classroom?

3. What are the effects of training elementary children with developmental disabilities to recruit teacher attention in the special education classroom on their academic productivity and accuracy in the general education classroom?
CHAPTER 2

METHOD

This chapter describes the students, setting, experimenter, materials, dependent variables, experimental design, and procedures that were used in the study.

Subjects

The subjects were four fourth grade students ages 10 and 11 with developmental handicaps who attended a large inner-city public elementary school. All four students participated in a general education classroom for a minimum of 45 minutes of academic instruction each day. The general purpose of the study was described by letter to the parents who were asked to sign a consent form before the child could participate in the study (Appendix A). Each of the students had been assessed previously using the following instruments: the Brigance Inventory of Basic Skills (Brigance, 1977) or the Woodcock-Johnson (Woodcock & Johnson, 1989) to determine math and reading grade equivalents; the Wechsler Intelligence Scale for Children Revised, WISC-R, (Wechsler, 1974) or the Stanford-Binet (Terman & Merrill, 1973) to determine grade level and IQ; and the Vineland Adaptive Behavior Scale (Sparrow, Balla, & Cicchetti, 1984) to determine an adaptive behavior scale. The reading ability levels of the students ranged
from an early first grade level to late fourth grade level. The students’ math skills ranged from middle second grade to late fifth grade. Adaptive behavior scores varied from 51 to 73. Intelligence Quotients ranged from 53 to 75. All four students had received special education services in a self-contained classroom for students with developmental handicaps (DH) for 6 months to 5 years prior to the school year in which the experiment was conducted (1995-1996). Each student had an Individualized Education Plan (IEP) with goals addressing basic reading, math, spelling, and socialization/inclusion participation goals. Table 1 shows student test scores, ages, gender, and length of time in special education.

**Settings**

The study was conducted in two different classroom settings: (1) the special education classroom, where students were trained to recruit teacher attention, and (2) the general education classroom, where student recruiting behaviors and effects on teacher attention were assessed.

**Special Education Classroom**

The special education classroom was located in a modular unit of four classrooms located adjacent to the main school building (Figure 1). Students were seated in groups of two or three at tables or groups of desks. The number of students present in the special education classroom ranged from four to fourteen throughout the school day. Students were instructed as a large group while at their seats or in small 2 to 8 person groups at a large table or a carpet area. The initial training occurred in the special education classroom at a time when only the teacher and one subject were present. See Figure 2 for
### Table 1: Student information.

<table>
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<th>Student</th>
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<td>2 1 2</td>
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<td>58</td>
<td>0.5</td>
</tr>
<tr>
<td>Olivia</td>
<td>F</td>
<td>White</td>
<td>11-4</td>
<td>1.1 1.1 1.3</td>
<td>2 1 2</td>
<td>57</td>
<td>70</td>
<td>5.5</td>
</tr>
<tr>
<td>Octavian</td>
<td>M</td>
<td>Af.-Amer.</td>
<td>11-6</td>
<td>K.6  K.2  K.7</td>
<td>K 1 K</td>
<td>50</td>
<td>67</td>
<td>4.5</td>
</tr>
<tr>
<td>Kenny</td>
<td>M</td>
<td>Af.-Amer.</td>
<td>10-1</td>
<td>K.6&lt;sup&gt;e&lt;/sup&gt; K.8&lt;sup&gt;e&lt;/sup&gt; K.9&lt;sup&gt;e&lt;/sup&gt;</td>
<td>K 2 K</td>
<td>53</td>
<td>53</td>
<td>5.5</td>
</tr>
</tbody>
</table>

**Notes:**
- a = Woodcock-Johnson (Woodcock & Johnson, 1989) administered within 3 years for re-evaluation or placement.
- b = Brigance (Brigance, 1977) administered in fall 1995.
- c = Adaptive behavior score sound using the Vineland Adaptive Behavior Scale (Sparrow, Balla & Cicchetti, 1984) administered within previous 3 years for re-evaluation of placement.
- d = Intelligence score determined using the Wechsler Intelligence Scale for Children Revised (Wechsler, 1974) or the Stanford-Binet (Terman & Merrill, 1973) administered in the previous 3 years for re-evaluation or placement.
- e = Iowa Test of Basic Skills (Heironymous, Hoover & Lindquist, 1986) was used to determine Kenny's grade equivalents in Reading, Math, and Language.
Figure 1: Layout of the classrooms in the modular unit.
Figure 2: Layout of the special education classroom.
classroom diagram.

**General Education Classroom**

The general education classroom was located in the modular unit directly across the hall from the special education classroom. The classroom contained tables for students to work at in groups of 4 to 6 students. Students were typically taught as a whole class while seated at tables. The special education students came in for homeroom for 30 minutes each morning where they worked on spelling assignments provided by their special education teacher. The students also participated in health, science, social studies, physical education, art, music, and lunch with the general education students. Any academic assignments in these settings were given by the general education teachers. See Figure 3 for a diagram of the general education classroom.

The general education teacher had twenty-nine years of experience teaching elementary students. She typically instructed the group as a class and helped students individually as needed. Generally, the students approached her desk to receive help during work periods. Her knowledge of the study was limited to knowing that the trainer was going to monitor the behavior of the students with disabilities while in her classroom. She was instructed by the trainer to inform the students in her class that the observers were classroom guests.

**Experimenter**

The experimenter was the students’ special education teacher pursuing her Master of Arts Degree. She held a Bachelor of Science degree in special education and teacher certification for developmental handicaps and multiple handicaps for grades K through
Figure 3: Layout of the general education classroom.
12. She had 4 years teaching experience with elementary children who had developmental handicaps, the past 2 years experience were in the school building where the study took place.

Observer

The primary observer was pursuing her doctorate in special education. She has 7 years of teaching experience of students with special needs.

Secondary Observer

The second observer was pursuing her masters degree in special education. She holds a bachelor degree in education.

Definition and Measurement of Dependent Variables

Throughout the study four dependent variables were measured in the general education classroom: (1) frequency and type of student cues for teacher attention, (2) frequency and type of teacher attention recruited by the student, (3) the percentage of spelling worksheets completed, and (4) the accuracy of student responses on spelling worksheets.

Frequency and Type of Student Cues

Two types of student cues for teacher attention were recorded: appropriate cues and inappropriate cues. Also, the observer recorded if the cues were non-academic or academic.

Appropriate Cue. The procedure in the generalization classroom did not require the student to raise his/her hand to approach the teacher during work time. Students sought teacher help and asked questions of the teacher by quietly walking up to the
teacher's desk and waiting in line for his turn. Students were not permitted to yell out a question at the teacher across the room. If the teacher was present in the class, the students were expected to raise their hand. The teacher was not free to answer questions when she was working on housekeeping type activities (lunch count, attendance), when she was speaking with another adult, or when she was at another student's desk. When the student was at the teacher's desk or the teacher was at the student's desk, then the student was required to ask an appropriate question about his work or behavior (e.g., "How am I doing?, "Is this right?"). An appropriate cue was recorded each time a student voiced a statement or question intended to produce academic instruction or feedback from the teacher about the student's work or behavior. Examples of appropriate cues were: "How am I doing?", "Is this right?", "I don't understand this.", "Can you help me?", "Did I do a good job?", "What do I do next?", "Can you read this please?", "Am I doing a good job?" or "Look, I'm all finished!" A cue ended when the teacher walked away from the student's desk or the student walked away from the teacher's desk. A cue included any question or statement that the student spoke while at the teacher’s desk. Typically, the student only asked the teacher one question or statement each time he approached the teacher’s desk.

**Inappropriate Cue.** An inappropriate cue was recorded each time the child did not raise his hand or cue the teacher appropriately. Inappropriate cues included: yelling across the room at the teacher; waving his hand back and forth through the air; raising his hand while walking up to the teacher's desk; starting to talk to the teacher when he was not within 1 meter of the teacher; speaking in a whiny tone of voice;
speaking too quietly, speaking loud enough to be disruptive to the class; signaling
nonverbally (i.e., just pointed to his work), or when the teacher was involved in classroom
duties (lunch count, attendance), speaking to another adult, speaking to another child, or
involved in group instruction.

Academic. Academic cues were scored when the student cued the teacher
specifically about an academic task. For example, "Am I doing this right?", "Is this
answer correct?", or "Please look at my work."

Non-academic. Non-Academic cues were scored when the student cued the
teacher about non-academic subjects. For example, when the child asked to sharpen his
pencil, to go to the bathroom, complain about another student, or inquire about
housekeeping items (e.g., field trip information, permission slips, lunch count).

Appropriate and inappropriate cueing was recorded by the primary observer on
the data collection from shown in Appendix B.

Frequency and Type of Teacher Attention

The teacher attention was rated according to four response topographies: no
attention, positive attention, negative attention and neutral attention. Teacher attention
occurred in two contexts: (1) when the student cued the teacher with a statement or
question or (2) when the teacher made a statement or question to the student directly
without being cued by the student. The location of the cue and attention was also noted.

No Attention. No attention was scored when the teacher did not respond to the
students cue. For example, if the student may have been waiting in line to cue the teacher
about work and the period came to an end.
Praise. Praise was scored if the teacher made any positive statements to the student about work, behavior or work appearance. For example, "That looks good, so far", "Great work", "I like the way you wrote neatly", "Wow, you finished quickly", "Everything is correct", "You are working very quietly", "Wonderful" or "You are doing a great job sitting in your seat and getting your work done today."

Negative Attention. Negative attention was scored when the teacher made a negative statement about work, the student's academic appearance, or behavior. Examples of negative attention were: "Sit down and get to work", "That's not right, do it over", "Stop talking", "I can't read this", "This is really sloppy", "No, this is wrong, do it over", "Go sit down", "You don't need my help", "I'm not going to help you now, go ask Mrs. ...", "Stop talking, your mouth is always moving", or "Get back in your seat and get to work."

Neutral Attention. Neutral attention was scored when the teacher stated any corrective feedback to the student about academics. Examples of neutral attention were: "The word car is spelled c-a-r", "Don't forget to capitalize the first letter of your sentence", "Say the alphabet to yourself and check your answers to make sure they are correct", or "Show me where you found the word in the dictionary."

Observation and Recording

Data collection began when the teacher was finished with lunch count and attendance during the homeroom period. Examples of teacher statements to begin work were: "You may get started", "You may begin", "Get busy on you assignment." The data collection ended when the student work period was over or the teacher directed the class
to a new activity. The recording period was typically from 9:10 a.m. to 9:30 a.m.

Each student cue for teacher attention and the type of teacher attention was recorded according to the above guidelines. A combination of teacher responses were also recorded. For example, neutral and positive attention was recorded for statements like"You have done well so far, you need to remember to capitalize the first word in your sentences though." A negative and neutral attention was recorded if the teacher said, "No that is not right, you need to put a period at the end of your sentences."

An example of a completed recording form is provided in Appendix B for the following vignette:

After completing half of his assignment, a student walked up to the teacher's desk and waited in line behind another child. When it was the student's turn in line, he asked the teacher "Have I done this right so far?" The teacher looked at the paper and responded, "Yes that looks super, you did a good job. Oh, You needed to capitalize this letter b" (pointing to the error). The student responded "Thank you" and walked back to his seat.

The observer recorded an appropriate cue for the student walking to the teacher's desk and cueing the teacher's attention with an appropriate question about his work. The student’s cue was rated as academic because his statement was about his work. She made a positive statement by telling the student that his work looked super and he did a good job, so the observer circled positive on the recording form. The teacher also gave the student corrective feedback by telling him about the letter b, so the observer also recorded neutral. The observer noted in the comments that the student said thank you to the
Completion of Academic Work

Each day during this study, the students were given spelling assignments. The assignments were placed by the trainer on the students' desk before they arrived in the morning. The first ten minutes of homeroom time, from 9:00 to 9:10, was spent with lunch count and attendance. Students did not ask the teacher questions during this time. Recording began at approximately 9:10 when the teacher was done with housekeeping activities.

Students were given one of nine assignments in spelling (Appendix C). Each assignment contained 10 to 16 items that required a one-word or number response. The amount of work completed was determined by dividing the number of responses made by the total number of responses for the assignment. An item was counted as completed if over 50% of the item was written. For example, if the correct response was "letters" and the child wrote "letts", then that item was counted as completed. Students worked on spelling assignments that required: ordering words alphabetically, finding words in the dictionary, counting syllables in words, identifying consonants and vowels.

Accuracy of academic work. The accuracy of the students' spelling assignments was determined by the number of whole responses made correctly. For example, if the assignment asked for the student to alphabetize the letters in the word "people" and the student wrote "leeopp", then the line where "leeopp" was written was marked as incorrect. Accuracy was calculated by dividing the number of answers correct by the number of items that the student responded to.
**Procedures to Ensure Believability of Data**

Interobserver agreement was recorded for believability of data.

**Interobserver Agreement**

A second observer was present for 30% of the data collection days. The observer independently and simultaneously recorded the number of student cues and teacher attention for the same students in the same classroom. Interobserver agreement was calculated by dividing the total number of agreements by the total number of agreements plus disagreements and then multiplying by 100. (Cooper, Heron, & Heward, 1987).

\[
\frac{\text{agreements}}{\text{agreements + disagreements}} \times 100
\]

**Teacher Knowledge**

The teacher was told by the experimenter that the observer was present to collect data on behavior of the students with developmental disabilities. It was stressed to the teacher that the relationship between the observer and the experimenter cannot be known to the students. The trainer explained that the results of the study would not be valid if the student’s realized that their behavior was being observed.

**Student Knowledge**

The students were told by the general education classroom teacher that the observer was in the classroom as a guest. The students with developmental disabilities began training several weeks after the observers came into their classroom to help ensure that they did not correlate their training with the observers presence.
Materials

Spelling Worksheets

Data were collected during a 20-minute period from 9:10 to 9:20 each school day when the students were working on individual spelling worksheets. Nine different spelling worksheets were used throughout the study (Appendix C). Each worksheet had 10 to 16 items to be completed. The worksheets required students to: (1) put letters or words in alphabetical order, (2) put words in syllables, (3) identify consonants and vowels in a word, (4) find a word in dictionary and write its forms, page number or guide words, or (5) scramble the letters in the spelling word.

Experimental Design

A multiple baseline across students design was used to analyze the effects of the recruitment training intervention on the frequency and type of student cues, teacher attention, and academic work in the general education classroom. The multiple baseline design also provided baselines against which changes could be evaluated (Cooper, Heron, & Heward, 1987). Recruitment training was staggered across students to build multiple baselines across students.

Procedure

Baseline

Students were observed in their homeroom classes in the inclusion setting for a 20-minute period while independently working on spelling worksheets given by the special education teacher. The spelling worksheets were on the students’ desk when they arrived to the classroom. The observer was introduced to all 30 students in the
generalization setting as a college student who was going to be a classroom guest for several weeks. The students remained unaware of the reason for the observer’s presence throughout the study. The students were also unaware that the experimenter and the observer were working together. The observer collected data on the target students’ frequency of appropriate cues and inappropriate cues. The observer also recorded both cued and uncued teacher attention directed toward the target students. Baseline continued for a minimum of 5 sessions. At the end of homeroom time, the students changed classrooms and the special education teacher collected the spelling assignments from the students as they entered the special education classroom.

Recruitment Training

The students were trained individually by the special education teacher in the special education classroom. The one-to-one training took place from 9:00 to 9:10 while attendance and lunch count were taken for the other students in their homeroom. Training consisted of three parts; instruction and role play, morning practice, and follow-up.

Instruction and role play. The experimenter approached the student and explained that she would teach the student how to ask for help so that the student could complete work. She also explained to the student that he would also be able to use this technique to get help while in other classes. The rationale was provided that the student would have more time to get help on other assignments while in the special education class and possibly have less homework because this method would help the student finish work in other classes. The teacher showed the student work samples of the amount of work the student had completed in the homeroom setting. The student was then shown several
example papers that were not complete, less than 50 % complete, 50 % complete, more than 50 % complete, and 100 % complete. The experimenter told the student that the appropriate time for the student to approach the teacher was when 50 % was complete, 100 % was complete, or initially if the student did not understand the assignment.

The student practiced identifying times that the work was ready to be checked by the teacher. The student was then asked to show the trainer at what point on the assignment for that morning should the student show the teacher his work. The student was then asked to state some ways that he could ask the teacher for help or show the teacher his work. It was stressed to the student that he wanted the teacher to say something nice to him about his work. After the student generated some appropriate cues, the trainer would add one or two additional suggestions to the student. This included questions like "How am I doing?", "Is this right?", "Can you tell me if this is right?", "Is this correct?", "Did I do this the right way?", or "Did I do a good job?". The student was then asked to identify appropriate times to approach the teacher. The student was also taught using negative examples of when not to approach the teacher. For example, when she was instructing the class, busy with attendance or other duties, or when she was working with another student. An example script of the initial training is below:

**Experimenter:** Today I am going to teach you how to get extra help in class, a good time to ask for help, and hopefully a way to get the teacher to say something nice to you too.

**Student:** O.K.

**Experimenter:** I want to show you some of the spelling work you have been doing in your homeroom recently. It doesn’t look like you are getting a lot of work done. You probably needed a little help didn’t you?
Student: Yes.

Experimenter: Well, I am going to show you good times to ask for help first. Let's look at these papers. On this paper, you didn't answer any questions. Did you understand how to do the assignment?

Student: No.

Experimenter: That's O.K. What should you have probably done?

Student: Ask the teacher.

Experimenter: Right. How about on this paper. It looks like you did half of the work.

Student: Yes, but I wasn't sure it was right.

Experimenter: O.K., What could you have done next?

Student: Ask the teacher.

Experimenter: Exactly. How about this last paper. It is all done. You did all of it correctly except one. Maybe you could have shown the teacher your work to have her tell you it was right, and she could have helped you correct the last one. So, there are about three places on your work that you could have shown the teacher your work or asked for help. In the beginning if you didn't understand, the middle and the end to check your work. I would like you to start showing the teacher your work at least two times on each paper. We are going to practice doing it for each of your papers in this class.

Student: O.K.

Experimenter: Now, if you have done some of your work and you are ready to show the teacher to see if it's right, what are you going to say when you go up to the teacher?

Student: Am I doing a good job?

Experimenter: That's perfect. The teacher will probably look at your paper and tell you that you are doing great. How would that make you feel?

Student: Pretty good.
Experimenter: That’s what we want. If you show the teacher your work and she says something nice, it makes it all even better. You could also say “How am I doing?” or “Is this right?” If you go up and show the teacher she can help you on the paper or she can just say something nice which is cool too. Now, should you go up and show the teacher your work while she is talking to the class?

Student: No.

Experimenter: Right. When would be a good time to show the teacher your work?

Student: When she isn’t busy.

Experimenter: Terrific. When would that be?

Student: When she isn’t talking to us or she isn’t doing lunch count and attendance or she’s not doing group stuff.

Experimenter: Very good. Also if the teacher is talking to another adult probably wouldn’t be a good time either. Now, what I want you to do is practice coming up to me today and asking me about your work or showing me how your doing. How many times should you come see me?

Student: Two or three times.

Experimenter: Super.

Morning practice. The child was instructed to try to recruit attention from the experimenter while in the special education classroom in the morning from 9:30 until 12:30. During this time, the student typically worked on math, reading, and handwriting assignments. The experimenter praised the student for appropriate cueing behavior while in the training setting. The experimenter also provided corrective feedback to the student for inappropriate cueing behavior. If the student asked a question to the experimenter from his desk across the room, the experimenter would tell the student, “It would probably be better if you came over to my table to show me your work.” The student was reminded when he did not cue enough. For example, the experimenter would say “Do you
need to show me something?" The target rate was 2 to 3 cues in a 20 minute time period. However, the student was permitted to cue over 3 times in a 20 minute period in the training setting due to the difficulty of the assignments. It was also important to encourage the student for appropriate cueing behavior so that it would be part of the student's repertoire.

**Follow-up.** At the end of the day, the trainer reviewed with the student inappropriate and appropriate cues. This was done by asking the student what to say when showing his work to the teacher and how many times to go see the teacher. The student was directed to come and role play and review with the experimenter from 9:00 to 9:05 the following morning. During this time, the student was reminded to continue to practice in the training setting. When the student was able to appropriately cue the experimenter in the special education classroom at least 2 times in a 20 minute period on each of two continuous days, the student was told to cue the teacher in the homeroom setting the following day. When the student cued 2 or more times in a 20 minute period independently for two days in the homeroom setting, then he stopped coming in for the instruction and role play with the trainer at 9:00. The student was reminded during the end of the day to continue to cue the experimenter in the training setting in addition to cueing the homeroom teacher.

**Generalization Programming**

Training for generalization occurred much the same way as in the initial training phase. The trainer continued to provide feedback and direction in the special education classroom for appropriate and inappropriate cues. The student was briefly reminded in the
morning to cue while in the homeroom and reviewed at the end of the day with the trainer appropriate cueing behavior. If the student did not cue in the homeroom setting two days then the trainer drew three boxes on the student's spelling paper to prompt the student when and how many times to cue. The trainer placed one box at the top of the paper to remind the student to cue if he didn’t understand the assignment, one box at the middle of the paper, and one box at the end of the paper. The student was told to check the box each time he cued the teacher about his work (Appendix D). The student also continued to turn in spelling worksheets at the end of the 30 minute homeroom period. The trainer briefly spot-checked the assignment and immediately praised the student for work that was at least 50% completed and 70% accurate. Any incomplete portions were returned to the student the following day to complete or correct. Also at this time, the trainer asked the student if he cued the teacher and how many times he cued. The trainer praised the student for cueing behavior in the homeroom setting. When the student was cueing the teacher in the homeroom setting at least twice in 20 minutes for five consecutive sessions, then the experimenter changed the follow-up to a variable schedule using cards that the student picked from a grab bag. The student was able to pick from the bag only when he cued two times during homeroom. Each student had his own brown bag with his name on it. The number of cards in the bag which told the student to receive an award varied. During the initial generalization programming, all of the student’s cards stated “box pick” which meant he could pick a small, inexpensive reward from a grab box. If the student had just moved to a variable schedule of reinforcement, then two of the four cards would say “box pick” and the other two cards would have a praise statement like great work or
super. The student met with the experimenter at the end of the day during the follow up
time and drew a card out of paper bag when he cued the appropriate amount of times
during the homeroom time. The experimenter relied on the student’s report of number of
cues to determine if the student could pick from the bag.

Maintenance

Student's cueing behavior and teacher attention to the student continued to be
monitored by observation records during the maintenance period. The student was no
longer asked to come in at the end of the day to meet with the trainer, nor reminded in the
morning to cue. If the student independently shared with the trainer the amount of times
he cued or the amount of work completed, then praise was given to the student.
CHAPTER 3

RESULTS

This chapter presents the results of the study. First, interobserver agreement data are reported followed by data for student recruiting, teacher praise, and academic work completion and accuracy.

Interobserver Agreement

A second observer recorded student recruiting and teacher attention for 12 (30%) of the 40 sessions in the study.

Student Recruiting

Table 2 shows the interobserver agreement on frequency and type of recruiting responses by each student in the general education classroom. For Olivia and Octavian, interobserver agreement was 100% for both the frequency and type of recruiting by the student. Agreement for Lataasha was 95% for the frequency and 94% for type of recruiting with 20 agreements plus disagreements. Agreement for cues for Kenny was 88% for the frequency and 82% for type of recruiting with 17 agreements plus disagreements.
Table 2: Mean percent interobserver agreement on the frequency, appropriateness, and type of student recruiting responses.

<table>
<thead>
<tr>
<th>Student</th>
<th>Frequency</th>
<th>Appropriate/Inappropriate</th>
<th>Academic/Non-Academic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latasha</td>
<td>95.0 (20)*</td>
<td>94.1</td>
<td>94.1</td>
</tr>
<tr>
<td>Olivia</td>
<td>100.0 (17)</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Octavian</td>
<td>100.0 (13)</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Kenny</td>
<td>88.2 (17)</td>
<td>81.8</td>
<td>81.8</td>
</tr>
</tbody>
</table>

Note: a = Numbers in parentheses show total number of agreements plus disagreements.
Teacher Attention

Table 3 shows the interobserver agreement for each student for the dependent variable of frequency and type of teacher praise and feedback received by the students in the general education classroom. Interobserver agreement for Olivia and Octavian was 100% for frequency and type of teacher praise and feedback received. Interobserver agreement for Latasha was 100% for number of student cued praise and 94% for type of teacher praise that was cued. For non-cued praise to Latasha, interobserver agreement was 94% for the number of non-cued teacher praise and 93% for the type and value of the non-cued praise. Interobserver agreement for Kenny was 100% for number of student cued praise and 82% for type of teacher praise that was cued. For non-cued attention to Kenny, interobserver agreement was 93% for the number of non-cued teacher praise and 91% for the type and value of the non-cued praise.

Academic Work Completion

A second observer independently recorded student work completion and accuracy for 10 (25%) of the studies 40 total data collection days. The interobserver agreement for the productivity and accuracy with which the students completed the academic worksheets in the general education classroom was 100 percent for each student.

Student Recruiting and Teacher Praise

Figure 4 shows the number of academic cues emitted by each of the four students and the cue produced teacher praise over the course of the study. Table 4 and Figure 6 show the mean number of appropriate academic cues and teacher praise for each student.
Table 3: Percent interobserver agreement on teacher praise directed toward student.

<table>
<thead>
<tr>
<th>Student</th>
<th>Student Cued Attention</th>
<th>Non-Cued Teacher Attention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Positive/Negative/Neutral</td>
</tr>
<tr>
<td>Latasha</td>
<td>100.0 (17)</td>
<td>94.1</td>
</tr>
<tr>
<td>Olivia</td>
<td>100.0 (13)</td>
<td>100.0</td>
</tr>
<tr>
<td>Octavian</td>
<td>100.0 (9)</td>
<td>100.0</td>
</tr>
<tr>
<td>Kenny</td>
<td>100.0 (11)</td>
<td>81.8</td>
</tr>
</tbody>
</table>

Note: a = number in parentheses show total number of agreements plus disagreements.
Figure 4: Frequency of student cues by four elementary students with developmental disabilities and cue-produced teacher attention during 20-minute seatwork sessions in the general education classroom. Target cue rate was 2 to 3 cues per session. Arrows under horizontal axis indicate sessions that variable schedule of end-of-day reinforcement was begun. Asterisks indicate student in special education classroom for training. Breaks in data points indicate student absence.
Table 4: Mean number of appropriate academic cues and teacher praise per 20-minute seatwork session.

| Student | Baseline | | | Training | | | | Gener. Program. | | | | Maintenance | | | |
|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|         | Cues | Praise | | Cues | Praise | | Cues | Praise | | Cues | Praise | | Cues | Praise | |
| Latasha | 0.3 | 0 (6)$^a$ | | 0 | 0 (2) | | 2.2 | 1.7 (19) | | 1.8 | 1.4 (5) | |
| Olivia  | 0.1 | 0 (14) | | 1.5 | 1.5 (2) | | 2.3 | 1.2 (13) | | 1.6 | 1.2 (5) | |
| Octavian| 0.2 | 0 (16) | | 0 | 0 (1) | | 1.8 | 1.0 (11) | | 1.2 | 0.2 (5) | |
| Kenny   | 0.8 | 0.3 (26) | | 1.0 | 0 (1) | | 2.7 | 1.7 (3) | | 1.6 | 1.2 (5) | |

*Note: a = Numbers in parentheses show number of sessions in each phase for each student.*
Figure 5: Mean number of student academic cues and teacher praise statements during baseline and combined generalization programming and maintenance phases. Numbers in parentheses show total number of sessions per phase.

Note: a = Includes one uncued teacher praise statement
Latasha

Latasha was present for 33 of the 40 sessions in the study.

Baseline. During baseline, Latasha did not receive any teacher praise. She un成功地 attempted to cue the teacher for praise on two occasions. There is a steady state of responding for no positive teacher praise and little student academic cueing behavior.

Training. While Latasha did meet the training setting requirements of 2 cues in a 20 minute session, she did not emit a cue.

Generalization Programming. Latasha was able to generalize the behavior into the generality setting for cueing the teacher. Her cueing behavior resulted in a steady trend of stable responding for cueing and for teacher praise. 32 of the cues by Latasha resulted in teacher praise. Teacher praise and academic cues each average to 2.2 instances per twenty minute period.

Maintenance. During the maintenance phase, Latasha continued to cue the teacher and receive positive attention by the teacher. Latasha received praise from the teacher 7 of the times that she cued. The average of teacher praise and academic cues was 1.8 instances per academic period.

Olivia

Olivia was present for 35 of the 40 sessions in the study.

Baseline. Olivia exhibited a steady level of responding for no positive teacher praise and no cueing during baseline. There is 1 instance of an attempt to cue the teacher for praise that did not result in praise during the first session only.
Training. Olivia spontaneously generalized the behavior of cueing the teacher into the generality setting. Olivia cued the teacher a total of 3 times, each cue resulting in praise from the teacher. The data shows an ascending trend in the training phase for Olivia.

Generalization Programming. Olivia continues to have a stable level of recruiting behavior during the generalization phase. She averages 2.3 cues per session which result in an average of 1.2 instances of teacher praise.

Maintenance. The cueing behavior continues for Olivia during the maintenance phase. Olivia cued the teacher for praise 5 out of 8 times. The mean number of cues was 1.8 per session while the praise received was 1.2 times per session.

Octavian

Octavian was present for 33 of the 40 sessions in the study.

Baseline. Octavian did not receive any praise from the teacher during baseline. He cued the teacher 1 time during session 8 and 2 times during session 9 that did not result in teacher praise. There is a steady level of non-cueing behavior and no teacher praise during baseline.

Training. Octavian did not spontaneously generalize the recruiting behavior into the generality setting. He did not cue the teacher and did not receive teacher praise in the training phase even though he met the training setting requirements for cueing 2 times in a 20 minute period.

Generalization Programming. Octavian was able to obtain and maintain a steady level of cueing behavior during the generalization setting. He cued the teacher 20 times
resulting in teacher praise 11 times. He cued the teacher an average of 1.8 times per session for an average of 1.0 times for teacher praise.

**Maintenance.** Octavian continued to cue the teacher for praise during the maintenance phase. He cued the teacher 6 times resulting in teacher praise only one time. The level of appropriate academic cues is steady across the generalization and maintenance phases.

**Kenny**

Kenny was present for 35 of the study's 40 sessions. Kenny was absent several continuous days at the end of the generalization phase due to the chicken pox.

**Baseline.** Kenny maintained a steady level of cueing behavior at an average of .8 cues per session resulting in .3 times of teacher praise during the baseline phase. Kenny cued the teacher a total of 22 times resulting in 8 praises by the teacher.

**Training.** Kenny continued to cue the teacher during the training phase of the study. He cued the teacher 1 time resulting in no teacher praise.

**Generalization Programming.** Kenny increased his level of cueing behavior during the initial part of the generalization phase. He cued the teacher 5 times resulting in 4 teacher praises. The average number of cues was 2.7 times with teacher praise 1.7 times per session. Kenny was absent the remaining of the generalization phase.

**Maintenance.** Kenny was able to maintain the cueing behavior during the maintenance period even with being present 2 days in the generalization phase. Kenny cued the teacher appropriately 8 times in 5 sessions resulting in teacher praise 6 times. The average number of cues per session was 1.6 times with teacher praise 1.2 times.
Completion and Accuracy of Academic Work

Figure 6 shows the percent of accuracy and completion on academic work for all four students in the study. Table 5 and Figure 7 show the mean number for accuracy and completion of academic work during a 20 minute session.

Latasha

Latasha’s work was graded for completion and accuracy for a total of 31 days out of a total of 40 sessions due to scheduling, training or absence.

Baseline. Latasha completed her work on 6 of the 6 days that she was present during baseline. On average, she completed 60% of the work on the papers. The accuracy for the completed portions of the assignments was an average of 67%.

Training. During training, Latasha completed her work 2 out of 2 days that she was present. On average, she completed 55% of the work on the papers. The accuracy for the completed portions of the assignments was an average of 100%.

Generalization Programming. Latasha completed her work 15 of the 18 days that she was present during generalization. On session 21, Latasha worked on a late math assignment instead of her spelling. On average, she completed 64% of the work on the papers. The accuracy for the completed portions of the assignments was an average of 67%.

Maintenance. Latasha completed her work 5 out of the 5 days during the maintenance period. On average, she completed 93% of the work on the papers. The accuracy for the completed portions of the assignments was an average of 86%.
Figure 6: Percentage of academic seatwork items completed and percent accuracy of completed items by four students with developmental disabilities during 20-minute sessions while in the general education classroom. Arrows under horizontal axis indicate sessions that variable schedule of end-of-the-day reinforcement was begun. Asterisks indicate session student in the special education classroom for training. Breaks in data points indicate days of student absence.
Table 5: Mean percentage of spelling worksheet items completed and mean percent accuracy of completed items by each student during a 20-minute session.

| Student | Baseline | | | | | | | | | | | |
|---------|----------| | | | | | | | | | | | |
| Latasha | 60 | 67 (6)\(^a\) | | 55 | 100 (2) | | 64 | 67 (18) | | 93 | 86 (5) | |
| Olivia  | 53 | 56 (14) | | 100 | 100 (2) | | 96 | 97 (11) | | 94 | 100 (5) | |
| Octavian| 8 | 25 (16) | | 0 | 0 (1) | | 82 | 73 (9) | | 61 | 38 (5) | |
| Kenny   | 59 | 59 (25) | | 100 | 92 (1) | | 100 | 89 (2) | | 50 | 40 (5) | |

Note: a = number in parentheses show number of sessions in each phase for each student.
Figure 7: Mean percentage of spelling worksheet items completed and mean percent accuracy of completed items for each student for 20-minute sessions during baseline and combined generalization programming and maintenance phases. Numbers in parentheses show total number of sessions per phase.
Olivia

Olivia’s work was graded for completion and accuracy for a total of 32 days out a total of 40 due to scheduling, training, or absence.

Baseline. Olivia completed her work 11 out of a total of 14 days she was present during baseline. On average, she completed 53% of the work on the papers. The accuracy for the completed portions of the assignments was an average of 56%.

Training. During training, Olivia completed her work 2 out of 2 days. On average, she completed 100% of the work on the papers. The accuracy for the completed portions of the assignments was an average of 100%. There is a steady state of responding during the training period for both completion and accuracy.

Generalization Programming. Olivia completed her work 11 out of 11 days during the generalization period. On average, she completed 96% of the work on the papers. The accuracy of the completed portions of the assignments was an average of 97%. There is a steady level of responding for both completion and accuracy during the generalization phase.

Maintenance. Olivia completed her work 5 out of 5 days during the maintenance period. On average, she completed 94% of the work on the papers. The accuracy for the completed portions of the assignments was an average of 100%. There is a steady level of responding for both completion and accuracy during the maintenance phase of the study.

Octavian

Octavian’s work was graded for completion and accuracy for 31 days out of a total of 40 days due to scheduling, training, or absence.
Baseline. Octavian completed his work 7 out of 16 days during the baseline phase. On average, he completed 8% of the work on the papers. The accuracy for the completed portions of the assignments was an average of 25%. There is a steady level of responding for work completion during the baseline phase.

Training. During training, Octavian completed 0 out of 1 assignment. The average for work completion on the paper and accuracy was 0 percent.

Generalization Programming. Octavian completed 9 out of 9 assignments during the generalization phase. On average, he completed 82% of the work on the papers. The accuracy for the completed portions of the assignments was an average of 73%. There is a marked increase in the amount of work completion and accuracy during the generalization phase of the study.

Maintenance. Octavian completed 4 out of 5 assignments during the maintenance phase. On average, he completed 61% of the work on the papers. The accuracy for the completed portions of the assignments was an average of 38%.

Kenny

Kenny’s papers were graded for completion and accuracy 33 days out of 40 total days due to scheduling, training, and absence.

Baseline. Kenny completed 22 out of 25 assignments during the baseline period. On average, he completed 59% of the work on the papers. The accuracy for the completed portions of the assignments was an average of 59%.

Training. During training, Kenny completed 1 out of 1 assignments. He completed 100% of the work on the papers. The accuracy for the completed portion of the
assignment was 92%.

**Generalization Programming.** Kenny completed only 2 assignments during generalization due to absence. On average, he completed 100% of the work on the papers with an accuracy of 89%.

**Maintenance.** Kenny completed 4 out of 5 assignments during the maintenance phase of the study. On average, he completed 55% of the work on the papers. The accuracy for the completed portion of the assignments was an average of 40%.
CHAPTER 4

DISCUSSION

This chapter will discuss the limitations of the study, the effects of the dependent variables, implications of the study, and suggestions for future research.

Limitations of the Study

Limitations of the study include the setting and schedule limitations, student characteristics, and experimental design.

Setting and schedule.

Variations in the observation schedule limited the effectiveness of the study. The availability of the teacher during the observation period varied due to interruptions by other teachers, special school event announcements, and extended housekeeping duties. Field trips and other special school events also limited the amount of available observation times. This shortened the amount of days available in the study to fade the reinforcement schedule during the generalization period. It also significantly shortened the amount of days available to observe during a maintenance period. The teacher typically was available to answer questions during the observation time from her desk area. The students approached her at the desk to cue. During other time periods or...
classrooms, the number of times the student cued the teacher may have increased or decreased if the teacher was available throughout the classroom. This would require the student to change the type of cue by raising his hand instead of approaching the teacher’s desk. The students worked on nine specific assignments that were chosen because they were similar in difficulty and number of items to be answered. In other settings, the assignments may be more difficult resulting in an increased or decreased number of student cues. The students were also taught to recruit during the morning homeroom sessions only. This may have inhibited the students generalizing the skill to other times of the day.

Student Characteristics.

The academic functioning level of the students can effect the acquisition and the effectiveness of the recruiting skill. Latasha and Olivia, who were the higher functioning students, recruited the teacher more often by asking how they were doing. Each cue may not have ended in praise by the teacher because they were higher functioning and the teacher may have expected them to be productive and ask questions. Octavian and Kenny, who were the lower functioning students, asked the teacher academic related questions. Their recruiting dealt more with asking how to do assignments than showing the teacher their work. The teacher commented to the experimenter and other teachers about the improvement in work production for Octavian. She also rewarded Kenny and Octavian with a sticker when they completed an entire assignment correctly. For each student, cues and praise from the teacher became more consistent as well as work production and accuracy. Results may have been improved if the students did not miss
school due to absence. Octavian was late to school on several occasions because of oversleeping or he missed school due to suspension. Kenny missed several days due to illness and Olivia missed a few days due to a death in the family.

**Experimental Design.**

The multiple baseline design across subjects was used in this study. There are three limitations to this multiple baseline design (Heward, 1987). First, the design may not allow a demonstration of experimental control even though a functional relation exists between the independent variable and the target behaviors. Second, the multiple baseline is a weaker demonstration of experimental control than the reversal design. Third, the multiple baseline shows more about the independent variable than it does about a function of a target behavior. The design was effective in showing that the training did increase cues, teacher praise, accuracy and productivity of work. A longer time period to conduct the study would have been helpful to strengthen the results of the training for Kenny. His absence during the generalization period did not give sufficient time to practice the recruiting skill in the regular education classroom. It also may have inhibited the skill from becoming part of his daily repertoire.

**Research Question One**

What are the effects of training elementary children with developmental disabilities to recruit teacher attention in the special education classroom on the frequency and type of recruiting responses they emit in the general education classroom?

This study found that students did increase the number of times that they recruited the teacher in the general education classroom. It also found that the students recruited
using academic cues. Latasha increased the average number of academic cues from .3 in baseline to 2.2 cues per session in the generalization phase; Olivia’s academic cues increased from .1 to 2.3 per session; Octavian increased .2 to 1.8 academic cues per session and Kenny’s academic cues increased from .8 to 2.7 per session. Three of the four student’s were able to increase cues from less than one per session during baseline to greater than two cues per 20-minute session in generalization programming.

Research Question Two

What are the effects of training elementary students with developmental disabilities to recruit teacher attention in the special education classroom on the frequency and type of teacher attention and feedback received by the students in the general education classroom?

The students in our study did increase the praise received by teachers as shown in Figure 4, Table 4 and Figure 6. Latasha, Olivia, and Octavian did not receive any teacher praise during baseline. Kenny was the only student that received teacher praise in twenty-six total baseline sessions. For Kenny, there were 8 instances of cued praise and one instance of uncued praise from the teacher. Kenny was the only student to receive uncued teacher praise throughout the study. Teacher praise increased to an average of 1.7 times per session for Latasha, 1.2 times per session for Olivia, 1.8 times per session for Octavian, and 2.7 times per session for Kenny. During the maintenance phase, Octavian cued the teacher six times but only received praise 1 time. This may be due to the fact that Octavian repeatedly lost his spelling list that week and was having problems getting started on his assignment or completing the assignment. Three of the four students
did not receive praise from the teacher in baseline, but did receive praise from the teacher with recruiting attempts in the generalization phase. The students may have influenced each other in the generalization phase to cue due to the fact that they were reviewing and receiving rewards for cues as a group at the end of the day. Several of the previous recruiting studies also found that cueing did increase teacher or staff praise (Cantor & Gelfand 1977, Connell, Carta & Baer 1993, Harchick, Harchick, Luce & Sherman 1990, Hrydowy, Stokes & Martin 1984, Morgan, Young & Goldstein 1983, Seymour & Stokes 1976, Stokes, Fowler & Baer 1976).

The teacher in the generalization setting commented or noted the students improvements. She commented to other teachers that Octavian had come a long way this school year. He was also given a sticker for the first time he had asked a question about his work. Octavian was so busy doing his work during the generalization phase that he did not eat his breakfast that he had to bring to class one day. Kenny also received stickers for good work. The teacher also commented that Latasha and Olivia were asking many more questions and getting a lot more work completed. Finally, the teacher suggested that Latasha be the recipient of extra funds that were available that would allow Latasha to join the homeroom class on a special field trip. Teachers in other settings also commented that each of the students asked more questions while in their classrooms.

**Research Question Three**

What are the effects of teaching elementary students with developmental disabilities to recruit teacher attention in the special education classroom on their academic productivity and accuracy in the general education classroom?
All the students in our study increased the frequency in which assignments were completed. Latasha completed her work 60% of the time in baseline and increased her work completion to 93% of the time in maintenance. Olivia completed her work 53% of the time in baseline and 94% of the time in maintenance. Octavian completed his work 8% of the time in baseline and 61% in maintenance. Kenny completed his work 59% of the time in baseline and 50% in maintenance. However, Kenny completed 100% of the work in generalization programming and training. The amount of help received by the students recruiting behavior increased the amount of work completed. There is at least a 30% improvement in work completion for three of the four students. Previous studies also found that recruiting teacher attention increased work production and amount of teacher help (Connell, Carta & Baer 1993, Harchick, Harchick, Luce & Sherman 1990, Morgan, Young & Goldstein 1983, and Seymour & Stokes 1976).

The accuracy for the completed portions of the assignments also increased for the students. The accuracy for Latasha’s assignments in baseline was 67% and 86% in maintenance. Olivia’s accuracy increase from 56% in baseline to 100% in maintenance. Octavian’s accuracy on his assignments increased from 25% in baseline to 38% in maintenance. Kenny’s accuracy was 59% in baseline, 89% in generalization programming, and 40% in maintenance.

**Implications for Educational Practice**

Recruiting teacher attention is a useful tool for students with special needs in both the special education classroom and the general education classroom. Teaching students to recruit reinforcement helps to tap into the natural community of reinforcement that is
provided with teacher praise. Students that are in a mainstream or inclusionary setting will find recruiting an especially important skill when competing for teacher assistance in a classroom with several students. Teachers who are working together collaboratively can instruct students to recruit. The special education teacher can train the student and the general education teacher can provide reinforcement for the student for appropriate cueing. The general education teacher can also provide consistent praise for appropriate cueing. Low academic functioning students can increase the amount of help from the teacher by learning how to appropriately seek attention. Students that are not completing work or participating in a mainstream of inclusion setting will certainly benefit from recruiting. These students may improve work production and participation with learning how to seek the teacher's attention with cueing. The student can also improve in these areas within the special education classroom.

Teaching students to cue may also help the student while in other classroom settings outside of the programmed generalization setting. In our study, probe measures were taken on recruiting behavior while in another classroom during social studies and in the homeroom classroom in the afternoon during health class. The probe measures were not frequent enough throughout each phase of the study to use. However, students did ask more questions and participate more often in discussion in the probe sessions that were taken. This may implicate that the students were able to generalize the skill beyond the parameters of the study into other classroom settings.

Suggestions for Future Research

Long term studies are useful to determine the effectiveness of a study and whether
a skill will be maintained over time. Future research should focus on an extended length of study to gradually fade intermittent reinforcement during the generalization phase. A longer study would also give time to allow for absences of students. It can also allow a longer period of time for the student to acquire the recruiting skill as part of his repertoire.

Future studies should also explore the effects of recruiting reinforcement on accuracy and completion of work in other academic areas. There was an indication that the recruiting skill could generalize into other areas within our study, future studies should measure cueing in probe areas. Recruiting effects on other types of academic assignments should also be explored. For example, the effects of recruiting on test scores, student behavior, student disruptions, and class discussion participation. Probe students that would represent typical peers would be useful to observe so that a comparison of the results of cues for teacher praise could be made.

Summary

Inclusion is a common theme for students with special needs today. Teachers are concerned that students that are included will not be successful in the general education classroom. They also are concerned that there will not be enough time to help the student with special needs within the general education setting. Research studies have shown the teaching students to recruit teacher praise can increase work or academic production and that this skill can be generalized across teachers and settings.

In our study, four students were taught in the special education classroom to recruit teacher praise by showing their work and asking a question that would require a favorable response from the teacher. The students were also taught appropriate times to
recruit the teacher. The students were then taught to recruit teacher praise while in the general education classroom during a homeroom period of twenty minutes. The students were able to generalize the recruiting behavior into the general education classroom and were able to increase academic production and accuracy.

The general education teacher noticed an improvement in the students that did learn to recruit. She praised them more for work completion and productivity. The teacher was able to learn more about the capabilities of the special education students that she may not have known previously. The teacher no longer talked about how little work was being completed, but began to talk about what improvements the students made.

Training students to recruit is not time consuming and can be as simple as reminded the student before class each day to recruit while in class. Reinforcement is the most beneficial when intermittent and can be as easy as praising the student for recruiting or completing work. The student will finish more assignments with greater accuracy and receive more praise from the teacher.
LIST OF REFERENCES


Connell, M., Carta, J., & Baer, D. (1993). Programming generalization of in-class transition skills: teaching preschoolers with developmental delays to self-assess and


Messinger, J. F. (1985). Commentary on ‘A rationale for the merger of special and regular education’ or, is it now time for the lamb to lie down with the lion? Exceptional Children, 51, 510-512.


Appendices
Appendix A

Parent/Guardian Consent Form
March 12, 1995

Dear Parent:

One of my goals as a teacher is to keep informed of new methods or techniques in the teaching field. Staying informed of these skills will help me to discover new ways to help your child have a continued positive educational experience. I am writing to let you know that your child has an opportunity to be involved in a study that will be conducted in your child's classroom. This study will be under the supervision of Dr. William L. Heward from the Department of Educational Services and Research in the College of Education.

During this semester, I will be working with Sheila Alber, a doctoral student from The Ohio State University, in a study that involves inclusion. Inclusion is the time that your child spends with the general education students. This occurs while your child is in homeroom, science, health, social studies, music, art and, gym. The study will focus on teaching your child ways and appropriate times to ask for extra help from the teachers that they have in the inclusion settings. I have been looking for ways to help your child become better involved in the general education classroom, and to also teach them ways to ask for help and limit frustration with their work.

As a member of my class, your child will have the opportunity to participate in this study. Enclosed you will find two copies of "Parent/Guardian Consent Form." One copy must be signed by you and returned in the enclosed envelope for your child to participate. We would be very grateful if you would read, sign and return this form by Monday, March 18th. You may keep the other copy for your records. If you have any questions, please do not hesitate to call me at 365-5388 (Olde Orchard). Thank you for your prompt response.

Sincerely,

Michele A. Craft, Teacher

cc: Ms. Susanna Swade, Principal, Olde Orchard Alternative Elementary School

Dr. William L. Heward, faculty advisor, The Ohio State University
I agree to allow my child to participate in a research study designed to teach special education students to seek teacher attention in the regular classroom. This study will be conducted by Mrs. Michele Craft under the supervision of Dr. William L. Heward from The Ohio State University College of Education. The study will be conducted over a period of 8 to 10 weeks. I also give my consent for the persons conducting the study to have access to my child’s school records. I understand that my child’s identity will not be revealed in any publication, document, or any other form of report developed from this research. Additionally, I understand that I may withdraw my consent for my child’s participation at any time.

Name of Student __________________________

Signature of Parent/Guardian __________________________ Date __________

Michele Craft __________________________ Date __________
Teacher, Olde Orchard

William L. Heward __________________________ Date __________
Faculty Advisor, Ohio State University
Appendix B

Observer Data Collection Form

(Blank and Completed Sample)
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<th>Student Cued Attention</th>
<th>Location</th>
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**Cues and Attention Legend**
- App = Appropriate
- Acad = Academic
- Non-A = Non-academic
- Inapp = Inappropriate
- No = No attention
- + = positive attention
- - = negative attention
- Neut = neutral attention
- T = teacher area
- S = student area
- R = Room
Appendix C

Spelling Worksheets
Write each spelling word on the first line. On the second line, write the letters from each word in alphabetical order.

Example: principal ~ aciilnppr

1. ~

2. ~

3. ~

4. ~

5. ~

6. ~

7. ~

8. ~

9. ~

10. ~

11. ~

12. ~
List each spelling word in the correct category below.

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<th>TWO-SYLLABLE WORDS</th>
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A-GAİN!
Copy your spelling words on the lines. Alphabetize the words by writing 1, 2, 3, etc. in the circles by the words. One point for each correct number.
Name

JUGGLING WORDS

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10.

My Juggled Words!

Unjuggled Words!

Scramble 10 of your words.
From the desk of Dr. Chirp

for ______________________

CLOSE EXAMINATIONS
Choose any 5 of your spelling words. Write them in the chart below and answer each question.

<table>
<thead>
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<th>My words</th>
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<th>Number of consonants?</th>
<th>Number of vowels?</th>
<th>Number of syllables?</th>
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vowels = a, e, i, o, u
**PATTERN CODES**

If "C" stands for consonant and "V" stands for vowel, we could write the pattern "CVC" and "HAT" would fit the pattern. If "CC" stands for a blend (two consonants making one sound), and "VV" stands for a digraph (two vowels making one sound), then "CC VV C" could stand for "sheep." Look at your spelling words carefully. Make a Consonant-Vowel-Consonant pattern for 10 of them.

Vowels = a, e, i, o, u

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<td>11</td>
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<td>12</td>
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</tbody>
</table>
List your spelling words in ABC order.

1. ___________________________ 7. ___________________________

2. ___________________________ 8. ___________________________

3. ___________________________ 9. ___________________________

4. ___________________________ 10. ___________________________

5. ___________________________ 11. ___________________________

6. ___________________________ 12. ___________________________
Write each spelling word in the first column. Find each word in the dictionary. Write the page number and guide words for each word.

**NAME OF DICTIONARY USED:**

<table>
<thead>
<tr>
<th>SPELLING WORD</th>
<th>PAGE #</th>
<th>GUIDE WORDS</th>
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<td>one point</td>
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1.  
2.  
3.  
4.  
5.  

84
Some words have more than one form. Use your dictionary to choose eight spelling words with more than one form. List each word and one form in the boxes below.

1. WORD: __________________  2. WORD: __________________
   FORM: __________________  3. FORM: __________________

3. WORD: __________________  4. WORD: __________________
   FORM: __________________  5. FORM: __________________

5. WORD: __________________  6. WORD: __________________
   FORM: __________________  6. FORM: __________________
Appendix D

Completed Spelling Assignment with Prompts
If "C" stands for consonant and "V" stands for vowel, we could write the pattern "CVC" and "HAT" would fit the pattern. If "CC" stands for a blend (two consonants making one sound), and "VV" stands for a digraph (two vowels making one sound), then "CC VV C" could stand for "sheet." Look at your spelling words carefully. Make a Consonant-Vowel-Consonant pattern for 10 of them.

Vowels: a, e, i, o, u

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<tr>
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Appendix E

Special Education Classroom Cue Recording Form
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<th>Assignment</th>
<th>Cues: App App App App Inapp Inapp Inapp Inapp</th>
<th>Prompts: 1 2 3 4 5 6 7 8</th>
<th>Rate:</th>
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<th>Assignment</th>
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