Abstract: Relative efficiency of hand raising and response cards within the context of an ABAB design when teaching time to middle school students with moderate and severe disabilities was investigated. Effects of the two strategies were assessed on four dependent variables: (a) student active responding, (b) on-task behavior, (c) inappropriate behavior, and (d) acquisition of the target behavior. Results indicated that the response card conditions resulted in higher levels of active responding and on-task behavior and lower levels of inappropriate behavior when compared to hand raising conditions. Two of the three students had higher accuracy during response card conditions as compared to hand raising conditions. For the third student there were minimal differences between the conditions for the accuracy measure. Future research needs also are discussed.

One way to effectively implement instruction for students with moderate to severe disabilities is through the use of small group instruction. Small group instruction has been used as a format to successfully teach a variety of both discrete and chained tasks (Browder & Snell, 2000; Collins, Gast, Ault, & Wolery, 1991). Group instruction has many advantages including the teacher being able to “maximize the amount of instruction students receive and minimize ‘down time’ when little learning takes place” (Browder & Snell, p. 505). Group instruction allows teachers to instruct more than one student at a time, decreasing required personnel and instructional time. During group instruction students may learn to interact appropriately with peers that may allow students to prepare for less restrictive settings where group instructional formats are used routinely. Finally, group instruction provides opportunities for observational learning.

Although the method used to teach students and the group arrangement in which they are taught are two factors to consider when planning instruction, a third component also is vital for the success of students. The method in which students will respond also plays a key role in their academic success. Active participation has been described as the “deliberate and conscious attempt on the part of the teacher to cause students to participate overtly in the lesson” (Pratton & Hales, 1986, p. 211). Active participation involves students engaging in a behavior such as writing, imitating, or describing a skill. It provides the students with the opportunity to practice “while a concept is being developed and the opportunity for the teacher to monitor student learning while the lesson is in progress” (Pratton & Hales, p. 211). Although the traditional method of student responding requires the students to raise their hand and state the answer when called upon, this method only engages one student while the remainder of the class is still only passively engaged. Researchers (e.g., Narayan, Heward, Gardner, Courson, & Omness, 1990; Pratton & Hales, 1986) also have stated that student achievement is enhanced through the use of active responding during instruction.

Positive effects of active student responding (ASR) have been illustrated through a variety
of studies. For example, Sterling, Barbetta, Heward, and Heron (1997) compared active student response and on-task instruction (OT) on acquisition and maintenance of health facts. Two female and three male students ranging in age from 9 to 11 years, all with disabilities, participated. In this experiment "an alternating treatments design was used to determine the existence and extent of any differential effects of ASR and OT instruction on the acquisition and maintenance of health facts (p. 156).

Active student responses consisted of the instructor stating the question and its answer. Students were then cued to respond in unison. After the group chorally responded once, they were cued to respond chorally two additional times. During OT instruction, the instructor stated the health fact and its answer and praised the students for attending to the card and listening as the fact was read aloud. The dependent measure was a test given to each student at the end of the day. Results of the study also indicated that student scores were higher on 86% of the end of the day tests taught during ASR conditions compared with OT conditions. Students also maintained a mean of 76% of the health facts taught through the use of ASR compared to 63% of the health facts taught through the use of OT instruction. The "5 participants stated that they learned 'better' under the ASR instruction than they did with OT instruction" (p. 158).

Use of an active student response instructional strategy is an important method which may help minimize the time students spend passively attending to the instructor. Some authors have stated “using active student responses is important for all learners, but especially for students with any type of learning disability” (Ketterer, Schuster, Collins, & Morse, in press, p. 5). Active participation may come in many forms, including choral responding or responding in unison. However, ability to respond verbally is not a skill that all individuals can perform independently so the instructor must manipulate the environment so that all members of the class can participate. One such way may involve the use of response cards.

Cavanaugh, Heward, and Donelson stated that “previous research has shown response cards—cards, signs, or other conveyances simultaneously held up by all students in the class to display their responses to a teacher presented question or problem - to be an effective way of increasing student participation” (1996, p. 403). Although response cards still require students to respond in unison, it does not require a verbal response. Even though there is limited published research on the use of response cards, the research that has been conducted thus far suggests that the use of response cards is an effective instructional strategy.

One such study by Narayan et al. (1990) used response cards in a large group fourth grade social studies classroom. Researchers collected data on four dependent variables that included the rate in which the teacher presented the material, number of student responses, number of accurate student responses, and students’ daily quiz scores. The first 10 minutes of each class consisted of the “teacher presenting information with the overhead projector and orally questioned the students after each fact or concept had been presented” (p. 484). During the second part of the class period, the instructor reviewed all facts that had been presented using either the hand raising or response card condition. The remaining part of the class period was spent taking a quiz. During the hand raising condition, students were asked a question; if they knew the response, they raised their hands. During the response card condition, the teacher presented a question to the class, said, “Write,” and then asked the students to hold up their response cards.

Using an ABAB design, results indicated that (a) more students offered responses during the response card condition (b) a greater number of the responses offered were correct during the response card condition, and (c) more students performed with higher accuracy on daily quizzes during the response card as opposed to the hand raising condition.

In another study Cavanaugh et al. used response cards to “investigate their effects during end of lesson reviews on recall of lesson content by high school students with and without disabilities” (1996, p. 403). Twenty-three ninth graders participated. The first condition required the students to sit passively and attend to the teacher’s lecture while viewing the
The key point presented on an overhead projector. The second condition was identical to the first except that the information on the overhead projector was missing a piece of information. Once the information had been presented, the class wrote a word on their response card, and waited for the instructor’s cue, “Cards up.” Students were required to participate in next day and weekly fill-in-the-blank tests. An ABAB design was used to determine effects of response cards on student retention of the science material. Results of weekly and next day tests indicated that students answered a greater number of questions accurately when using the response cards.

In an additional study, Armendariz and Umbreit (1999), compared effects of hand raising and response cards on the occurrence of disruptive behavior for 22 students from low socioeconomic families enrolled in a third grade bilingual class. During hand raising, the instructor combined her lecturing with asking questions to the class as a whole. Only those students who voluntarily raised their hands were called upon. During the response card condition, the instructor continued to present her material in a lecture format. However, each student was given a response card and was required to respond to the teacher-directed questions. Results indicated that response cards were effective in decreasing the occurrence of disruptive behavior. The use of response cards created a “mean decrease for the whole class of 86%” (p. 157).

In a more recent study concerning effectiveness of response cards an alternating treatment design was used with preschool students (Godfrey, Grisham-Brown, & Schuster, 2003). In the study, five children ranging in age from 3 to 4 years participated in a morning calendar group. Dependent variables were active student responding, on-task behavior, and the occurrence of inappropriate behavior. During each session, students were asked eight questions pertaining to the daily calendar and current weather conditions. Depending on the condition students were required to raise their hands, respond in unison (choral responding), or use their response cards to answer the teacher-directed questions.

Results indicated that more students responded to teacher-directed questions when response cards were in use. Use of response cards also “increased on-task behavior more than choral responding or hand raising conditions for all students,” (Godfrey et al., 2003, p. 46). The study also found that students had fewer occurrences of inappropriate behavior when the response cards were in effect.

Response cards are not only effective with typical students or students who have mild disabilities or those at-risk. The study conducted by Ketterer et al. (in press) indicated that use of response cards is an effective teaching strategy to use with individuals who have low incidence disabilities. In this study, eight elementary students with moderate to severe disabilities were taught to use response cards during a calendar group. The researchers used an ABAB design to determine the effectiveness of response cards on rate of student response, on-task behavior, and the occurrence of inappropriate behavior.

The first condition required students to state or sign the response to the instructor’s nine questions concerning the daily calendar and weather conditions. Students were instructed to raise their hands and be called upon before responding to the teacher’s question. During the second condition, students were given a response card and a basket that contained answer choices. The instructor then asked the group a question and checked student responses. Results indicated that response cards were effective in increasing the response rate for six students and on-task behavior for all students. In addition, inappropriate behavior occurred less frequently for a majority of the students during response card conditions.

Research indicates that response cards have only been used on a limited basis with students with mild disabilities and only one study (i.e., Ketterer et al., in press) has been conducted with low incidence students and this study did not evaluate student acquisition of targeted content. Although some research has occurred with preschool-and elementary-aged students using active responding techniques to increase student responses, increase on-task behavior, and decrease the number of inappropriate behaviors, there has been no research, to date, on how these techniques would affect middle school students with moderate to severe disabilities.
Method

Participants

One female and two males ranging from 12 to 15 years participated. They attended middle school in a self-contained classroom for students with moderate to severe disabilities for part or all of the school day. All participants had the following prerequisite skills: (a) the ability to attend to a group for 20 minutes, (b) visual acuity, (c) gross and fine motor skills necessary to participate in hand raising and response card conditions, and (d) the ability to verbalize answers to the teacher directed questions. All had objectives on their Individual Educational Programs (IEPs) focusing on telling time.

Cristi was 12 years 6 months old and received a 44 full-scale IQ score on the Wechsler Intelligence Scale for Children (WISC) (Wechsler, 1974). Cristi identified coin values, counted change totaling $1.00, told time to the hour and half hour, identified 69 sight words, and added dollar and change amounts using a calculator. Current IEP objectives included identifying sight word identification, counting coins, and telling time in 15 min increments. Taylor was 15 years 1 month and received a 42 full-scale IQ score using the WISC (Wechsler). Taylor identified numbers 1 to 12, used a calculator to add dollar and change amounts, and fixed snacks from a pictorial recipe. Taylor’s current IEP objectives included sight word and survival sign identification, telling time to the half-hour, and coin value identification. Sam was 12 years 5 months and received a 40 full-scale IQ score using the WISC (Wechsler). Sam identified numbers 1 to 20, identified coin values, used a calculator to add dollar and change amounts, and made purchases using the next dollar strategy. Sam’s current IEP objectives included counting coins, telling time, and identifying sight word.

Setting

The setting was a rural public middle school special education classroom. Sessions were around the table with the instructor seated behind the table facing the participants. Two classroom assistants helped the remaining students.

Materials and Equipment

During the intervention condition, each participant was given a laminated flip board that resembled the face of a digital clock. Each board had three sections. The first section was used to indicate the hour. The second section contained a colon accompanied by the numbers 0 through 9. The third section contained numbers 0 through 9.

The experimenter also had a tape recorder with a tape containing pre-recorded beeps that were heard approximately every 2 min. The pre-recorded beeps were used to record on-task behavior using a varied time sampling procedure.

In addition, the experimenter had tokens to deliver to each participant for appropriate behavior (i.e., not talking out and remaining in their seat) as well as correct responses that were passed out at the end of each session. Students exchanged these for an edible reinforcer, which was prepared by an individual in the classroom as part of his educational curriculum.

Data Collection

During each 10 min telling time group (or until the telling time group was complete) of each experimental session, data were collected on the following dependent variables: (a) active responding, (b) on-task behavior, (c) inappropriate behavior, and (d) accuracy of student responses.

Ten questions were asked during each telling time group session. Once each time had been presented, the experimenter indicated the initials of each participant who responded actively. Active responding was defined as the participant independently raising his or her hand during the hand-raising condition. Active responding was defined as independently flipping the response card to reflect the time. A mark was placed in the appropriate space on the data sheet next to the time presented by the experimenter for active responses. At the end of the session, the experimenter counted the number of active responses for each participant across all times presented.
and divided that number by the total number of opportunities to respond to represent the percent of active responding for the whole group.

On-task behavior was recorded using a 2 min variable time sampling procedure. The experimenter placed the initials of each participant who was on-task when the pre-recorded beep sounded. On-task behavior was defined as the participant actively responding to the experimenter’s question (i.e., raising hand, flipping the response card, or holding up their response card), looking at the experimenter when she was speaking, or looking at a participant while he or she was responding. A participant was not recorded as being on-task if they were exhibiting an inappropriate behavior at the time of the pre-recorded beep. At the conclusion of the session, the experimenter calculated the total number of interval marked as on-task and divided that number by the total number possible to calculate the percentage of on-task behavior.

The experimenter also recorded the occurrence of inappropriate behavior. Inappropriate behavior was defined as talking without being called upon and touching another student or another student’s response card. The experimenter recorded each occurrence of inappropriate. At the conclusion of the session, the experimenter divided the total number of inappropriate behaviors by the length of the session providing the experimenter with a rate per minute measure.

General Procedure

The targeted stimuli for each condition are listed in Table 1. A telling time experimental session occurred each day regardless of the number of students present. There were five telling time group sessions per week. Each session began at 9:40 a.m. and last until approximately 9:50 a.m. each school day. Data were collected for the entire session length. Each session consisted of 10 questions, presented in random order. Each stimulus was presented once per session.

Baseline

During baseline sessions, the experimenter began the telling time session by stating the group rules (i.e., raising hands to answer questions and waiting to speak until they have been called upon). After the group rules had been stated, the experimenter started the pre-recorded tape. The tape played a pre-recorded beep on the average of every 2 min.

During hand raising conditions, the experimenter presented a time on a traditional clock to the students accompanied by the question, “What time is it?” and waited 5 s. Students whose hands were raised were randomly selected to answer the question. Once a student answered the question correctly, the instructor provided descriptive verbal praise (e.g., “You’re right! It is 1:05, because the little hand is on the 1 and the big hand is on the 1”). If participants respond incorrectly, corrective feedback occurred (e.g., “No, the answer is 1:05, because the little hand is on the 1 and the big hand is on the 1”). If no student responded within 5s, the instructor stated the answer and asked the next question. Only one student was called upon to answer each question. Consequences for inappropriate behavior resulted in the instructor repeating the group rules and reminding participants that the tokens would be exchanged for an edible reinforcer at the conclusion of group. At the conclusion of each session, the instructor handed out tokens based on the number of correct responses and for following the group rules.

Intervention

During the intervention conditions, the independent variable was the use of response
cards. During the response card condition, each participant had a laminated flip board. During the intervention phase of the experiment, the experimenter began the telling time group by stating the group rules (i.e., raising hands to answer questions and waiting to speak until they have been called upon). After the group rules had been stated the experimenter started the pre-recorded tape. The tape played a pre-recorded beep on the average of every 2 min.

During the response card condition, each participant was given a laminated flip board that resembled the face of a digital clock. After the experimenter set the face of a traditional clock, she turned the clock to face the participants and asked, “What time is it?” The participants were given 10 s to manipulate their flip board. Once the experimenter had counted individual responses, the experimenter prompted any participant who failed to respond. After each student had manipulated their flip card, the experimenter provided feedback for all answers. Once a student answered the question correctly, the instructor provided descriptive verbal praise (e.g., “You’re right! It is 1:05, because the little hand is on the 1 and the big hand is on the 1”). If participants responded incorrectly, corrective feedback occurred (e.g., “No, the answer is 1:05, because the little hand is on the 1 and the big hand is on the 1”) and the instructor manipulated the flip card to the correct time. If no students responded within 10 s, the instructor manipulated the flip card to illustrate the correct time and asked the next question. At the conclusion of each session, the instructor passed out tokens based on the number of correct responses and for following the group rules.

**Acquisition Probe Sessions**

Prior to the start of each condition, each student was probed once on an individual basis. The probe session was conducted for the entire set of stimuli to be taught in the corresponding condition. One trial was completed for each of the 10 stimuli. Probe sessions were completed by having students verbally state the time represented. Upon completion of each condition each student was probed again. Probe sessions consisted of the instructor showing the student a time on the traditional clock and asking, “What time?” The student was then given 10 s to verbally respond. Students received descriptive verbal praise for correct responses. All incorrect responses were ignored, followed by the instructor waiting a 2 to 4 s intertrial interval. The purposes of the probe sessions were to (a) assess preinstruction performance and (b) evaluate student acquisition of the targeted skills upon completion of each condition.

**Experimental Design**

An ABAB design was used to evaluate the effectiveness of response cards. Condition A was the hand raising condition, while condition B involved the use of response. Experimental control was demonstrated when the students’ level of performance improved in the presence of the intervention and returned to levels at or near baseline when the intervention was withheld.

**Reliability**

Reliability data were collected by one of the classroom assistants. Data were collected twice during each condition. Reliability data were collected on both dependent and independent variables.

The point-by-point method (i.e., number of agreements divided by agreements plus disagreements and multiplied by 100) was used to calculate the agreement of (a) percent of active responses, (b) percent of on-task behavior, and (c) accuracy of student responses. Reliability data on active responding indicated a mean of 100% agreement for the hand raising conditions. A mean of 92.5% agreement with a range from 90 to 100% was obtained for the response card conditions. Agreement on the percent of on-task behavior and the accuracy of student responses was 100% for all conditions. Dependent variable reliability data were collected using the gross method for rate per minute of inappropriate behavior. Reliability data were calculated by dividing the smaller number by the larger number. This resulted in 92.25% agreement (range = 80 – 100%) during the hand raising condition and 100% agreement during the response card conditions.
Procedural reliability data were calculated by dividing the number of teacher behaviors observed by the number of planned teacher behaviors and multiplying by 100 (Billingsley, White, & Munson, 1980). The teachers behaviors assessed included (a) having materials ready, (b) starting the tape recorder, (c) stating the directions at the start of each session, (d) stating each question, (e) manipulating the clock correctly, (f) and giving the appropriate consequences. Procedural reliability data collected indicated that the teacher implemented all behaviors across all conditions with a mean of 98.75% accuracy (range = 95-100%). The first hand raising condition was implemented with a mean percent of 97.5% accuracy (range of 95-100%). The first response card condition was implemented with 100% accuracy. The second hand raising condition was implemented with 97.5% accuracy (range of 95-100%). The final response card condition was implemented with 100% accuracy.

Results

The following questions were addressed in this study: When used with middle school aged students with moderate to severe disabilities, and when compared to traditional hand raising conditions, do response cards (a) increase active student responding? (b) increase on-task behavior? (c) decrease inappropriate behavior? and (d) facilitate the acquisition of the targeted skill?

Active Responding

Mean percent of active responding across all participants for the first hand raising condition was 54% (range = 37 - 80%). Mean percent of active responding across all participants for the first response card condition was 100%. Mean percent of active responding across all participants for the second hand raising condition was 64.5% (range = 47 - 80%). Mean percent of active responding across all participants for the second response card condition was 100%. Data also were analyzed on the percent of active responses for each individual student, and these data are included in Table 2. All participants had higher means of active responding during the response card conditions as opposed to the hand raising conditions.

On-Task Behavior

The percent of on-task behavior was recorded. During the hand first hand raising condition, the group mean percentage of on-task behavior was 69.6% (range = 50 –100%). The second hand raising condition had a mean percentage of 88.08 (range = 50.0 – 100%). During the first response card condition, the group had a mean of 97.6% for on-task behavior (range = 91.6 – 100%). The second response card condition yielded a mean of 100% for group on-task behavior. Individual data also were collected and are included in Table 2. Data collected for individual participants indicates that on-task behavior occurred more often with the use of response cards.

Inappropriate Behavior

Data also were analyzed on the number of inappropriate behaviors per minute across students. Mean rate of inappropriate behavior per minute for the group during the hand

<table>
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<th>Student</th>
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<tr>
<td>Mean Percent of Active Responses</td>
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</tr>
<tr>
<td>Sam</td>
<td>64.2%</td>
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<td>65%</td>
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<tr>
<td>Taylor</td>
<td>44.2%</td>
<td>100%</td>
<td>54%</td>
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<td>Cristi</td>
<td>62%</td>
<td>100%</td>
<td>66.6%</td>
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<tr>
<td>Mean Percent of On-Task Behavior</td>
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<tr>
<td>Sam</td>
<td>58.9%</td>
<td>89.2%</td>
<td>91.6%</td>
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<tr>
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<td>83.9%</td>
<td>100%</td>
<td>80.5%</td>
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<tr>
<td>Cristi</td>
<td>88.7%</td>
<td>100%</td>
<td>86.1%</td>
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<tr>
<td>Rate Per Minute of Inappropriate Behavior</td>
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<tr>
<td>Sam</td>
<td>0.81</td>
<td>0.10</td>
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<tr>
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raising conditions was 0.96 (range = 0.3 – 1.5) for the first condition and 0.82 (range = 0 – 1.75) for the second hand raising condition. Mean rate of inappropriate behavior per minute during the response card phase was 0.24 for the first condition (range 0 – .4) and 0.19 (range 0 – 0.42) for the second condition. Data on the rate of inappropriate behavior for each participant are included in Table 2. These data indicate that during response card conditions all participants had lower rates of inappropriate behaviors when compared to hand raising conditions.

Although a substantial amount of overlap occurred between conditions, if a mean rate across like conditions is calculated, some additional findings should be noted. As represented in Table 3, all participants engaged in fewer inappropriate behaviors per minute during the response card conditions as opposed to the hand raising condition.

**Acquisition of Behavior**

Mean percent of correct responses for the group prior to the start of the first hand raising condition was 0%. The Mean percent of correct responses upon completion of the first hand raising condition was 60% for the group. The group’s mean percent of correct responses prior to the start of the first response card condition was 0%. The percent of correct responses for the group was 90% upon completion of the first response card condition. Prior to the start of the second hand raising condition the mean percent of correct responses was 0% for the group, upon completion of the condition the mean percent was 56.6%. For the final response card condition the group’s mean percent of correct responses was 0% prior to the start of the condition, the group mean was 90% upon completion of the second response card condition. Individual data were collected for correct responses prior to and upon completion of each condition. These data are included in Table 3 and indicate that with the exception of Cristi, all students had higher levels of acquisition on stimuli taught with the use of response cards. Cristi acquired 100% of the stimuli taught with the use of hand raising and 95% of stimuli taught with the use of response cards.

**Discussion**

This study assessed effects of response cards on active student responses, on-task behavior, inappropriate behaviors, and the accuracy of student responses. Based on data that were collected, several statements can be made. First, there was a substantial change in data between conditions on the active responding variable. During the first hand raising condition, the group responding rate ranged from 54.2% to 64.2%. The second hand raising condition rate ranged from 64.1% to 66.6% for the group. During both response card conditions, the rate of active responding was 100% for the group. Overall, the use of response cards increased the rate of active responding for all participants. These data add to the response card literature because this study involved middle school students with moderate to severe disabilities. Previous response card research (Cavanaugh
et al., 1996; Narayan et al., 1990) included students with learning disabilities and students who were in fourth and fifth grade regular education classes. Only one article (Ketterer et al., in press) included elementary aged students with moderate to severe disabilities. Data collected in this study clearly illustrate that the use of response cards increases the active responding rate of middle school students with moderate to severe disabilities. Additional research on the use of response cards to address academic subjects, such as English, reading, and social studies, is warranted. Further research also should be conducted with students who have mild disabilities as well as those individuals who have been diagnosed with profound disabilities. The need for research on effects of response cards on high school students with and without disabilities also is needed.

Second, this study found that use of response cards increased on-task behavior when compared to hand raising conditions. Response card conditions yielded a higher percentage of on-task behavior for all individual students than did the hand raising conditions. Data on on-task behavior with response cards adds to the response card literature by illustrating that use of response cards with middle school students who have been identified as having moderate to severe disabilities increases students' on-task behavior. Although literature on active student responding has previously addressed the issue of on-task behavior, the literature is limited and additional research is justified.

Third, data on inappropriate behavior indicates that all students had a significantly lower rate of inappropriate behavior during response card conditions as compared to hand raising conditions. During hand raising conditions, the group mean rate for inappropriate behavior was 0.7 occurrences per minute per condition. During response card conditions, the group mean rate for inappropriate behavior was 0.2 occurrences per minute per condition. Data pertaining to inappropriate behavior adds to the literature by illustrating that individual as well as group rates of inappropriate behavior were substantially lower during response card conditions as compared to hand raising conditions. In addition, there is limited research on the effects response cards have on inappropriate behavior (Armendariz et al., 1999; Ketterer et al., in press).

Finally, data on the percent of correct responses indicates that response cards were more effective in the acquisition of the skill for two of the three participants. For the group, the mean percent of acquisition was 90% for all response card conditions. Mean percentage of acquisition for the group was 58% for all hand raising conditions. However, Cristi responded with 100% accuracy under hand raising conditions and with 95% accuracy during response card conditions.

There are several limitations to this study. First, there were a limited number of students who participated and, therefore, additional replications are warranted. Second, this study only occurred during one activity. Replications should occur across various settings and activities with low incidence student populations to provide additional external validity (Ketterer et al., in press). Third, both responding procedures used in this study were novel to students participating in this study, which may have contributed to the students’ increase in on-task behavior.

Various practical implications of this study include using response cards to teach money skills, sight word identification, environmental signs, and math skills. This study also could be replicated using response cards as a practical alternative for non-verbal students in inclusion classes. Use of response cards allows participants to engage in physical movement during academic activities, which may help, some individuals stay on-task.

Furthermore, response cards were implemented with a high degree of accuracy as evidenced by the procedural reliability data. An informal interview of the students also revealed that they enjoyed “flipping their cards.” Overall, students appeared more attentive during the response card conditions and were eager to participate when informed that they would be using the response cards during a second phase of the study. Given the results of this study, practitioners should attempt to use response cards in their classrooms while researchers continue to examine response cards within various contexts and with a multitude of skills.
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