



Effect of Response Cards on Saudi Students with EBD in English Class

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ABSTRACT

I have always found the idea behind the teaching strategy of response cards (RC) to students from Saudi Arabia with EBD in my country. It was drilled into my head that if we as teachers do not include this strategy, then students will not learn effectively and the class be bored. As we know teaching today is much more than telling facts from a textbook, it has become a series of practices that teachers compile together to form teaching methods (Duchaine, 2011). However, it is truly important including the response cards in my classroom if I want my students to be active during my lesson.

In this research and as a result, the student performance increased with the use of response cards. The targeted students displayed few off-task behaviors during the response cards intervention compared to the baseline. These students shows zero occurrences of off-task behavior during all sessions within that strategy, therefore remaining on task for 85%-90% of the time.

Keywords: Response Cards, Saudi Students, EBD, English Class.



Introduction

In my study I want to validate if the students' performances, interest, and motivation in the lesson are different with the use of RC. English class is the most difficult class to students in my country. It is a challenging class to students in all the grades including the university level. They try to avoid it by being off task all the time such as engaging in activities not related to the class or starting a conversation with others during instruction, disruptive behavior towards others. So, this strategy as a new one will have a significant impact on their academic achievements. This strategy never used in my country before, so, I would like to apply it in this class, to have an active class with less disruptive behaviors and more active participants.

Response cards can be defined as cards or signs that are held up by all students at the same time in response to a question (George, 2010). The design behind this is so that all students are able to participate and feel comfortable participating and they don't embarrassed in class if they got the answer wrong, especially for students who have low grades and faces difficulties to learn (George, 2010). Students who underperform or who lack motivation or confidence in their academic skills rarely volunteer to answer questions, but with response cards, all students are given the opportunity to participate. They are less likely to raise their hands, to answer a question or ask a question especially, when they will be the only ones to participate. Seeing peers respond with response cards can be reducing the risk of feeling embarrassed or dumb (George, 2010). It is also a great and fast way to assess student knowledge.

Brief Literature Review

Determining appropriate interventions should be a serious consideration when teaching students with emotional and behavioral disorder (George, 2010). The purpose of this review of literature is to examine whether response cards (RC) have effects on students with EBD. This paper supports what researchers found using response cards during class instruction. The studies reported that RC has effects on the students; the students' response during class has been increased when the teachers use this intervention. According to most studies, disruptive behaviors are reduced since RC has been implemented. Results indicated that when the opportunities to respond increase, the correct responses and engagement in class increase too. Researchers showed that using RC during the instruction was successful from the pre-school level to the university level (Duchaine, 2011; Kellum, Carr, & Dozier, 2001).

Students with EBD display insufficiency in behavioral acts, academic success, and communication skills (Rutherford, Quinn, & Mathur, 2004). Researchers have been concerned about the low level of the students' academic performance. Students spent as much as 45% of the available instruction time disturbing the class (Narayan, Heward, Gardner, Courson, & Omness, 1990). Because of this, researchers have been searching for strategies to increase the academic performance of the students. They did many studies to help students decrease their disruptive behaviors since those disruptive behaviors extended into the learning environment. Those behaviors may have effects on the performance of the students and their concentration in class. Students with EBD have difficulty communicating socially and making relationships



with adults or with classmates because of their disruptive behaviors. To assist those students in achieving their goal and to be more effective in class with less disruptive behavior, it is important to provide new strategies to support their future academic success.

A study by George in 2010 was conducted at the middle school level, over the next ten school days the teachers infused response cards into their teaching methods. The results indicated that the use of response cards resulted in the improvement of the students' scores. Even great findings were that overall academic performance improvements were increased by 88%. Additionally, students answered more questions and with the correct answers when the teacher used the response cards. Students felt they engaged more of the content with the response cards (George, 2010). Practicing the use of response cards is one way to accomplish that goal of learning "studies have shown that students who make more academic responses during instruction learn more than students who make few responses" (George, p. 201, 2010). This study shows that response cards is a strong strategy and can be used at any time during a lesson.

Purpose

The purpose of this prospectus is to determine the effectiveness of using response cards as an intervention with students with EBD in English class in Saudi Arabia. In the literature review interpreted the findings of others who have examined the effectiveness of using RC with students with EBD. Students with emotional and behavioral disorders have a tendency to have negative experiences in school, such as lower grades, and have trouble establishing relationships with adults. They lack the desire or motivation to succeed. Using response cards helps the teacher to avoid disruptive behaviors in class and help the students engage effectively. The strategy of using response cards has been found to be the most effective at engaging students with EBD in academic content.

Literature Review

Response Cards

Duchaine, Green, and Jolivette (2010) found that using response cards was a teaching method that increased classroom opportunities to respond to academic questions. Instead of asking a question to the class, looking for a student to answer the question, the teacher could ask the students in the classroom to hold up a card with the answer. The cards were blank so the students could write the answer for the question that the teacher asked. When the teacher asked a question, the teacher gave the students' time to think about the answer and to write it down, and then students had to hold up their response cards with their answers, the teacher reviewed their answers and made sure that the whole class understood. When students responded incorrectly, the teacher provided them with feedback (Duchaine, Green, & Jolivette, 2010).

Duchaine, Green, & Jolivette (2010) stated that response cards were used to check student knowledge and understanding of specific content and provide immediate feedback. Typical instruction often involved questions from the teacher to



be answered by students; however, only a few students were given the opportunity to respond and receive feedback with the traditional response of raising hands. Students who underperformed or who lacked confidence in their academic skills rarely participate in class, but with response cards, all students were given the opportunity to participate. Response cards provided ongoing assessments of the students' understanding of the teachers and inform the teachers of needed instructional modifications. This strategy helped to increase the participation level of all students, to increase on-task behavior, and to give the opportunity to students to learn from each other, while providing immediate feedback to the teachers and students. The teachers could work with the whole class and there was no need to work individually with students. This strategy was highly motivating and fun (Duchaine, Green, & Jolivet, 2010). In this literature review the studies showed the positive effects of response cards in students' outcomes and three of these studies focus on the disruptive behaviors, all these studies shown are quasi-experimental research.

Response Cards and On-Task Behavior

Christle and Schuster (2003) defined what on-task behavior means; on task means that the students are in their seats and facing the board or the teacher. The response card was raised by the students only when the teacher asked a question. Using response cards was an important intervention which supported effective teaching strategies that produced on-task behaviors and increased opportunities to respond, and provided the student with immediate feedback correction (Lambert, Cartledge, Heward, & Lo 2006). When students answered correctly, the teacher praised them. Praise increased the students' participation in class and their self-esteem about their academic performance (George, 2010).

Patterson (2013) examined students with specific individualities such as race, ethnicity, and language background. In her research, she examined the effect that the response cards had on the academic performance of eight African Americans students with emotional or behavioral disorders (EBD) and learning disabilities (LD). They were chosen for this study mainly because of their low test scores when compared to their peers. The researcher showed that using response cards might be an effective strategy to decrease off-task behaviors and increase the academic outcomes for students with EBD. The participants in this study were eight students, their ages 9 -11 years old. These targeted students were selected by their teacher because of their high levels of being off-task. Seven of these students were diagnosed as students with EBD and one student was diagnosed as a student with learning disabilities. The teacher gave them two quizzes weekly on Tuesdays and Thursdays only. Students improved the scores of their quizzes and increased on-task behaviors. This study extended previous research completed by Heward, Gardner, Cavanaugh, Courson, & Barbeta (1996). Increasing the opportunities to respond with students with EBD holds promise for increasing the achievement of their academic skills and improving their behaviors. The researchers stated that when the teacher increase the rate of opportunities to respond (OTR) of students with EBD, the students engage effectively in class (Lambert et al., 2006).



Response Cards and Student Engagement

Horn (2010) cited that RC was one of the most active responding strategies which helped students engage and participate actively. A lot of research has been trying to examine the effectiveness of RC strategy to improve the achievement of students with EBD. Currently, response card strategy is widely recognized as a helpful learning-assistance strategy, which can improve the performance of students and decrease inappropriate behaviors like interruption during class. Since the disruptive behavior is considered a significant problem, it is worth investigating the effectiveness of RC for students with EBD to increase their engagement and decrease disruptive behaviors. The remainder of the paper described the research that has been conducted on this teaching method. Many researchers showed the effectiveness of using the response card strategy during the instruction period. The use of RC is an effective strategy for increasing on-task behaviors while improving academic performance for students with EBD (George, 2010). The more opportunities the students had to be involved and participate in class, the more time they spent on-task rather than getting involved in off-task and disruptive behaviors (Bost & Riccomini, 2006).

Response Cards Strategy Compared to Hand Raising Condition with Student Engagement

Many researchers in their studies had shown the effectiveness of using response cards. George (2010) was one of the researchers who was interested in this strategy and wanted to determine if the engagement level of the students would increase when response cards were used during the social studies instruction of twenty-nine students (23 boys and 6 girls). Students in this study showed higher percentages of engagement during the response card condition than during the traditional condition (raising their hands), with a high percentage of students considered to be on-task when questions were posed (George, 2010). Five participating students were observed during the hand-raising condition, and the response card condition to detect the effects of response cards on students' responses to the questions. George (2010) showed that the scores of the tests were higher for all targeted students during the response card condition and low during the hand raising condition.

Christle and Schuster (2003) stated that teachers provided more feedback to the students to improve students' understanding when the students use response cards. The teachers gave the students a greater amount of feedback during the response card condition than in the hand raising condition. Other researchers' studies showed the effect of using RC for students with and without disabilities but with a history of challenging behaviors in general education classes. In this study, the effect of response cards was evaluated in general education classrooms (Duchaine, 2011). The results of this study supported previous research that showed that RC increases student participation and reduces disturbances in class. The capability of students with and without disabilities increases when they are engaged in active ways during instruction (Duchaine, 2011).



During science class, Gardner, Heward, and Grossi (1994) measured how many times students raised their cards during the class session to answer a question and how many times during the hand raising condition they were called on to answer questions. The target students were five out of 22 fifth grade students. Gardner et al. (1994) reported that 1,103 question were asked to those target students during the hand raising condition; those target students answered 53 of the questions for a total participation of 4%. Through the RC condition, 1,015 questions were asked and the target students responded 678 times for a total participation of 68%. For data collection purposes, this class was recorded by video and measured by counting how many times those target students raised their hands, called out, and used RC each time a question was asked by the teacher (Gardner et al., 1994).

George (2010) searched in his study which one is more effective to use: the traditional way of raising hands or using response cards. This sample consisted of 22 middle school students with EBD. The students' ages ranged from 11 to 15 years old. Their reading levels were low comparing to their peers. The study measured on-task behavior, opportunity to respond, and correct responses. Students scored considerably higher with on-task behavior using RC with $M = 93\%$ compared to using hand raising with $M = 84\%$. Opportunity to respond increased throughout the RC condition with $M = 84\%$ throughout RC and $M = 31\%$ during the hand raising condition. Students responded correctly when the RC strategy used with $M = 60\%$ and $M = 24\%$ during the hand raising condition. The researchers of this study indicated that this strategy was effective to use with students with EBD in middle schools. When the teacher used the RC strategy, the students engaged, participated and responded in class more often (George, 2010).

During a whole group mathematics session, Christle and Schuster (2003) showed that the participation and achievements of students increased when the teacher used the response cards during class instruction. Twenty four students from fourth grade participated in the study (9 boys and 15 girls). During the instruction and after the teacher used the response cards, the students engaged effectively and they showed their desire to learn more, and they also referred to it as a fun strategy (Christle & Schuster, 2003).

Narayan et al. (1990) evaluated the use of response cards in a fourth grade classroom in two ways. The first one was to rate the teacher question and the other one was to rate the participation of students. Eight boys and twelve girls joined the study. The students' average of their correct responses throughout the response card condition had 13.0 correct answers compared to 7.4 correct answers throughout the hand raising condition. Additionally, 13 out of the 20 students earned high scores on quizzes in the response card condition. Most students, 12 out of 20, showed that response cards helped them to learn and understand, and 14 out of 20 students said that they got a higher score on their quiz during the response card condition (Narayan et al., 1990).

Gardner et al. (1994) extended the study of Narayan et al. (1990). They compared traditional response to response cards (RC) in an urban fifth grade science classroom. Dependent measures included: the rate of teacher presentation, how many



times the students respond, correctness of student responses, the score of a next-day quiz, and test scores of a weekly review. The results indicated higher scores on the next day quizzes and on the weekly review tests after implementing the response card for all the 22 students. Furthermore, 19 out of the 22 students shared their opinion about using the response card and they said that RC helped them during the instruction, and 20 out of 22 students said that RC improved their academic performance (Gardner et al., 1994).

Instructors commonly use a lecture form to teach students at the university. A pilot study was conducted by Musti-Rao, Kroeger, and Schumacher-Dyke (2008). They used response cards to examine the effectiveness of this strategy at the university level. Teachers examined the effectiveness of RC by using it to increase the score of the students' quizzes, their performance and their participation during the class. Students who used the response cards were more active when compared to students who raised their hands to answer questions. The researchers revealed that most college students prefer to use response cards in classrooms rather than hand raising (Musti-Rao et al., 2008).

All the studies above presented the effects of response cards compared with hand raising during the instructional condition. Although hand raising is a suitable practice for students without disabilities, it is not acceptable for students with physical disabilities or for students with verbal issues (George, 2010). On the other hand, the researchers showed the effectiveness of response cards for students with and without disabilities making it easy for the teacher to use for the whole class without exception (George, 2010; Gardner et al., 1994; Christle & Schuster 2003; Duchaine, 2011; Narayan et al., 1990; Musti-Rao et al., 2008).

Response Cards and Disruptive Behaviors

Researchers revealed that there was a positive relationship between the difficulties that the students with EBD face and their disruptive behaviors in class. Disruptive behaviors had been defined in this study as screaming, talking to peers, throwing materials, disturbing the teacher, leaving their seats without permission during the instruction or putting hands on other students (Lambert et al., 2006). Armendariz and Umbreit (1999) examined if the response cards have the effect of decreasing the disruptive behavior through the instruction in a third grade math class by using an ABAB reversal design. Twenty two students were measured by using the system of time sample recording. The class was scanned after each two minute interval. Each sitting lasted 20 minutes, giving 10 opportunities to score each child in the class. During the response card condition, the percentage of students with disruptive behaviors was low (Armendariz & Umbreit, 1999).

The most common complaint from teachers was that their students have high rates of disruptive behaviors (Pisacreta, Tincani, Connell, & Axelrod, 2001). Armendariz and Umbreit (1999) evaluated the response cards on the behavior of third grade students which showed the effectiveness of this strategy to reduce the disruptive behaviors. In this study, Disruptive behaviors were defined as a distracted state of students: being out of their seats, talking without permission, looking at the others'



response cards, and drawing on them instead of answering. During the intervention, students were provided with response cards during six sessions. The teacher asked questions and gave instructions to write down their answers on their response cards. Then, the teacher asked the students to raise the response cards to show their answers. The teacher stated that the disruptive behavior of the students decreased during this intervention and they were more active participants. The researchers concluded in their studies that using the response cards increased the students' engagement, academic performance and reduced the disruptive behavior effectively (Armendariz & Umbreit, 1999).

Some studies tested the effectiveness of response cards in a music class as an opportunity to respond to students' disruptive behaviors. One of these studies was by Welles (2013) in which the students' ages ranged from six to nine years old. Each student was assigned to read a rhyme from flashcards individually and then the teacher asked them to write down their answers on response cards after the teacher asked a question related to what they read. The teacher then provided them with feedback about their answers and praised them when their answers were correct. The teacher reported that students' disruptive behavior was reduced during the response card condition. One of the concerns of using this strategy is that the students' performance increased because a new teaching strategy was introduced (Welles, 2013). Lambert et al. (2006) showed the impact of response cards on students' disruptive behaviors, especially in math class. Researchers had shown that increasing the use of response cards during class time increased on-task behaviors and students' achievements. It also decreased off-task and disruptive behaviors (Lambert et al., 2006).

Response Cards Comparing to Hand Raising with Disruptive Behaviors

Lambert et al. (2006) also assessed the response card strategy in two fourth grade math classrooms. They measured the effectiveness of response cards on disruptive behaviors of nine students. The examiners reported that the disruptive behavior decreased during the response card condition. In this study an interview was held with students asking them which way they liked to answer best. The students liked the response cards as a way to answer questions given by the teacher, and they said it was a fun technique to learn. Teachers stated that the response cards had positive effects on the academic context and the achievements of the students, and it helped the students to reduce the disruptive behavior. Teachers reported that response cards were easy to use (Lambert et al., 2006).

Singer (2013) obtained 16 students. The teacher used the hand raising condition and the response card condition for the whole class. The target behavior recorded was the disruptive behavior. Disruptive behaviors were defined in this study as being out of seats, throwing objects, and calling out. The teacher asked a question and they answered by writing one or two word answers on their response cards, and then showing their cards immediately when the teacher asked them to show their answers. The students waited for the feedback from the teacher; praise was given when they answered correctly. During the response card condition the researcher that



the disruptive behavior of those students clearly decreased. The students showed more interest and they were more active participants in class (Singer, 2013).

During math instruction of fifth grade students, Lambert et al. (2006) measured how many times the students responded per minute when the teacher used the response card and hand raising conditions in an ABAB reversal design. The teacher picked those students because they were known as the most disruptive students during math class which made their academic level low. During these conditions, the teachers asked the target students a total of 12 questions in 10 minutes. Throughout the question and answer condition in the math class, disruptive behaviors of the target students was measured for 10 intervals per session. With all the target students being watched and observed, the disruptive behavior of these students decreased from $M = 6.8\%$ throughout the hand raising condition to $M = 1.3\%$ during RC condition. This study presented a clear change of the disruptive behavior of those students during the response card condition. RC showed a success in decreasing the disruptive behavior (Lambert et al., 2006).

Response Cards in General Education

Although a lot of researchers showed the effect of RC to increase the engagement of students and their achievements and decrease disruptive behaviors (Christle et al., 2003; George, 2010) from the pre-school level (Randolph, 2007) to the university level (Duchaine, 2011; Kellum, Carr & Dozier, 2001) for students with EBD, there are no studies that have used RC with high school students in general education. Researchers suggested using the response cards in general education to decrease disruptive behaviors for high school students with EBD and they supported their suggestion for many reasons: First, most students were studied in general education classrooms. Secondly, 64% of high school students are sent to the office because of their disruptive behaviors. Thirdly, more discipline problems occurred in high percentage of students with EBD comparing with their peers. Finally, high school students with EBD had a low level of participation in class (Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005).

Methods

Research Question

In this study, the investigator evaluated the effectiveness of response cards on Saudi students' academic performance in English classrooms.

Hypotheses

The response card strategy does have an effect on Saudi students' performance in English classrooms and by practicing this teaching strategy student performance increased and their disruptive behavior and being out off task decreased.

Demographics

Participants and Settings

Two boy students ranging in age from 7-8 years old are targeted for data collection in this study. They are Saudi with EBD .The targeted students are recommend by their teacher because of their low grades and they do not participate in



class. This study was applied in elementary School and conducted for two weeks only.

Research Design

The design is single subject design, withdrawal design (ABAB) to make sure that the level participation of the students stay after we withdrawal the intervention. This design was used to demonstrate the effects of the response cards. The results were represented on the spreadsheet, then a graph was created visually to show if there was an increase in student performance. If an increase in student's performance, academic achievements, their desire to learn and decrease their disruptive behavior, being off task, being out of seat are shown that means that the teaching strategy of the response cards are effective to use with Saudi students in English class.

Dependent Variables

The study consisted of one dependent variable: off-task behavior.

Off-task behaviors: Off-task was defined as one or more of the following: engaging in activities and conversation with others during instruction, disruptive behavior towards others (i.e., making faces, teasing, laughing, touching and/or hitting others); making noise, pounding on the desk, engaging in out-of-seat behavior without permission, and making inappropriate comments towards others. Off-task behavior showed by the target students was measured during the 60-minute English classes through direct observations.

The author chose this variable because students in Saudi school have a hard time to learn English and they try to be out of task to avoid participating in class.

Independent variable

The independent variable is the response card intervention.

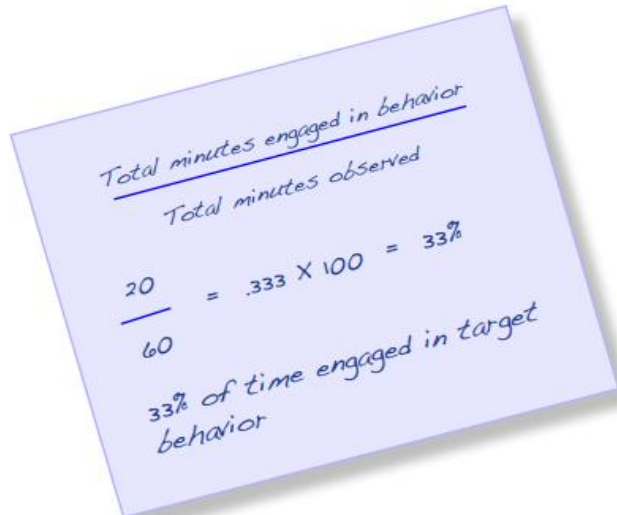
Observation for Off-task Behavior

The primary observers (The author was the primary observer), the author sat at the back of the classroom when collecting data on off-task behaviors. If there is an off task behavior, a code as off task (+) marked. If there is no occurrence of off-task behavior a zero was scored. The author chose out of seat behavior because it is easy to observe.

Recording of the behavior

Duration recording was used to monitors the percent of time that a behavior occurs during the observation period, it can be used to calculate the average time of display for the number of times that the student showed the behavior (Alberto & Troutman, 2006; Cooper, Heron, & Heward, 2007). This type of recording is used for behaviors that last for more than a few seconds and/or for varying lengths of time (e.g., paying attention, tapping a pencil, in-seat behavior).

The author was observed how many times the students were out of their seats during the observation time (the 60 minutes). The percentage of time the student engaged in the behavior can be calculated by dividing the total minutes of the behavior's duration (20 minutes) by the number of minutes in the observation period (60 minutes) and multiplying by 100, the behavior was happening 33% of the time.



Procedure

The subject was English. Teacher uses resource materials, student texts, workbooks. The class begins with a brief review of the previous lesson (10 min) about the letters in English, lecture on the new topic (20 min), question and answer period (10 min), and independent practice (10 min) and 10 minutes break. I would record off-task behaviors which is being out of seat during the instructional period. During the response cards intervention condition, the teacher requested the team to display their response cards indicating their answers instead of raising their hands. The author recorded how many times the students get out of their seat during the whole class period.

Baseline and intervention phases

During this condition, the teacher presented a question to the class either orally or visually (written on the chalkboard or on the overhead projector). Students answered the question by raising their hands. The observers recorded on a data sheet when the target students engaged in any off-task behavior (out of seat). During the response card conditions, students was given a response card, a dry erase marker, and a piece of facial tissue or paper towel. When the teacher asks a question, students will respond by writing their answer on their response cards. The teacher would ask them to answer, and the students hold their response cards over their heads with the answer directed toward the teacher. At this point, the teacher would scan through the students' answers. If all of the students are provided the teacher with the correct answer, the teacher would praise the group, instruct the students to wipe off their response card with the tissue, and move onto the next question. As an observer was focused on the 2 students' behaviors during the raising hand period and the response card.

Interobserver Agreement

For the observant agreement, there is going to be 2 observers to insure that the behavior is being observe as agreed upon of the operational detention.



Treatment Integrity

The quality of IV have a second observer watched the implementation of the treatment. The observer used a checklist to ensure that each phase of the current study was implemented with integrity.

Data analysis:

A baseline date was gathered for the 2 students to compare before the intervention implement, and after the intervention is implemented. This gave the author a big picture if the intervention makes any improvement on students' performance in English. If off-task behaviors decrease with the two target students, that's means this intervention is effective to use with EBD Saudi students specifically in English class. To generate it, this strategy is effective to be used with students from different cultures.

Results

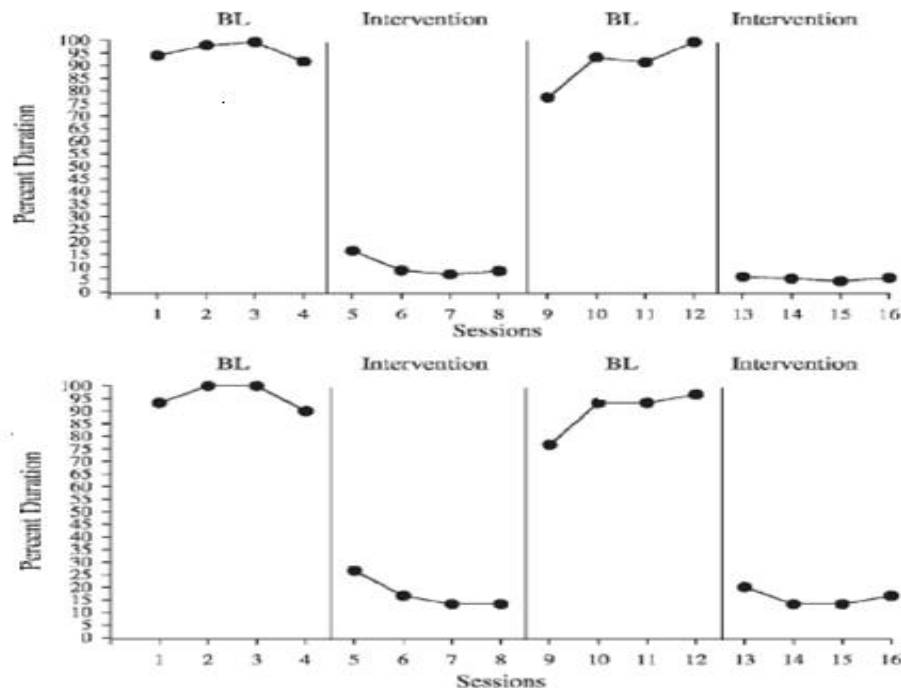
Student performance increased with the use of response cards. The targeted students displayed few off-task behaviors during the response cards intervention compared to the baseline. These students shows zero occurrences of off-task behavior during all sessions within that strategy, therefore remaining on task for 85%-90% of the time.

Limitations

One of the concerns of using RC is students' performance increased just because a new teaching strategy is used, perhaps extending the study for a longer period of time will help answer that question because after a certain period of time RC will be routine and therefore could become obsolete. The teacher could be absent during the two weeks .At which point, there is not much the researcher can do but to accept the days that the study will conduct. Internal validity now becomes a concern because the teacher being absent is the cause of not completing the activity during the study. There is no possibility of generalization because of the small sample size. And also there is no follow up stage to determine if this strategy is effective.

Future Research, Improvement and Better Study

It would be an interesting to continue this study and apply it in Saudi Arabia. An additional improvement could be the length of time the study was conducted. The study was only conducted for two weeks that is not a very long period of time. Future research should study the effect of this intervention for a longer period of time to know if the effect of this strategy will last and become routine. The authors advised researchers who are planning to do further research to increase the duration of the study, especially with students with EBD to document long term effects (Lambert et al., 2006). Future researchers should consider a long term period of time for implementation. This study is set up in elementary school. For best results, future researchers should concentrate on high school students with disruptive behaviors in general education classrooms also. Future research should replicate the study across subject to evaluate the treatment effects.



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**مجلة الفنون والآداب وعلوم الانسانيات والاجتماع****Journal of Arts, Literature, Humanities and Social Sciences****www.jalhss.com****Volume (78) April 2022****العدد (78) أبريل 2022**

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