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Exploration of Classroom Seating Arrangement and Student Behavior in a Second Grade Classroom

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Abstract: The purpose of this study was to determine if a specific classroom seating arrangement can contribute to students being on or off-task while completing independent work within the general education setting of an inclusive second grade class. In this study, three classroom seating arrangements were compared in a second grade classroom. These seating arrangements were cluster seating, horseshoe seating, and row seating. There were specific targeted off-task behaviors that were to be observed: inappropriate talking, students out of their seats without permission, students not following directions, and students not starting independent work promptly. Data were collected using three methods: observation/ anecdotal record, teacher behavior checklist, and a behavior tally sheet. Data revealed the number of students who displayed off-task behaviors as well as the specific amount of times these behaviors happened during each seating arrangement. It was determined that row seating had the fewest off-task behaviors for this particular second grade class was row seating. It was also determined that inappropriate talking was the most frequent occurring off-task behavior and not following directions was the least off-task behavior observed. For this particular classroom, row seating was the best classroom arrangement. Implications of differing seating arrangements will be discussed.

Keywords: Setting arrangement, inclusion, row seating, cluster seating, horseshoe seating

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Introduction

School policy makers have set high standards for students to perform well on standardized tests and teachers are held accountable for those expectations. The Individuals with Disabilities Education Improvement Act of 2004 (IDEIA) requires all school districts to provide students with disabilities the same education as those of their peers within the general education classroom (Cook, 2004). Also, states have implemented a more intense set of new standards known as Common Core State Standards ([CCSS]; Ketcham, 2011; National Governors Association Center, 2014). Because of these big changes in education, teachers should take proactive environmental changes in consideration. A quick change is classroom seating to decrease student behavior which will generally improve student performance. Denton (1992, p. 31) said it best, "Careful use of physical space can positively affect teacher and student attitudes." Educators play an important role in children's academic and social behavior when they structure and arrange the daily lives of students in their classroom (Hughes, 2012).

Classroom disruptions are always an overwhelming area of concern for many teachers. Leveled behavior instruction that utilizes what is known as positive behavior support (PBS) is an effective way of ensuring all students benefit from a learning environment that is more conducive to learning and to appropriate behavior in the classroom. PBS is instruction that emphasizes "proactive strategies for defining, teaching, and supporting appropriate students' behaviors to create positive school environments" (OSEP, 2012). Researchers show using PBS in the classroom improves instructional practices of educators in a variety of settings (Algozzine & Algozzine, 2007; Cihak, Kirk, & Boon, 2009; Fairbanks, Sugai, Guadino, & Lathrop, 2007;

Hendley, 2007; Hieneman et al., 2005; Menzies & Lane, 2011). One proactive strategy involves making changes to the learning environment to promote learning which modifies the learning environment to prevent unproductive student behavior. Darch and Kame'enui (2004) recommend that the teachers consider whether persistent behavior problems are fostered by the organization of the classroom. This study examines the effects of different seating arrangements on classroom behavior as a proactive way of limiting disruptive behavior and creating an environment more conducive to independent learning.

Martella, Nelson, and Marchand-Martella (2003), explained that having a classroom that is well-organized can result in positive behavior and interaction among the teacher and students, which more than likely will decrease the occurrences of behavior problems within the classroom. Seating arrangements and its impact on student behavior (Rosenfield, Lambert, and Black, 1985) found that groups of desks helped students socially but hindered their individual work performance. Being aware of how the design and make-up of your classroom affects students' demeanor will make it easier for the teacher to intervene and correct the problem before it escalates into a much bigger management problem. Bonus and Riordan's (1998) research recognized these behaviors as being off-task: "students delayed response to starting an assignment, inappropriate talking,, unwanted gestures, such as tapping pencils, rolling pencil on desk, flipping through books, and doodling". Bonus and Riordan (1998), found that certain behaviors played a part in students not receiving adequate instruction and that their attention to instruction was increased when the seating arrangement was appropriate for teaching.

Researchers have studied the relationship between classroom environment and student behaviors. As a result of these studies, researchers have determined that making changes to the students' environment could be a strategy for teachers to utilize as means to minimize disruptive

behavior from students who are frequently displaying these behaviors (Conroy, Davis, Fox, & Brown, 2002).

Additionally, Gifford (2002) stated that “the physical make up of a class, such as furniture, room dimension, and space provisions in the room can influence a student’s behavior”. Richards (2006) also revealed that the position of where a student is seating within the classroom can also impact the student’s academic performance, therefore making changing to seating arrangements maybe a strategy that can be utilized to decrease disruptive behavior in the classroom. Daniels (1998) added that the arrangement of a classroom can either foster negative or positive behavior. Van den Berg and Segers (2012) found that placing children closer together reduces peer-reported behaviors in the classroom.

Three Types of Seating Arrangements

There are three seating arrangements that were significant in managing student behavior. According to Weinstein (1979), due to the lack of space within a classroom, teachers are generally limited to using three classroom seating arrangements; row seating, cluster seating, and horseshoe seating. Each is described in detail below.

1. Row seating: Desks are place in either vertical or horizontal straight lines

The first seating arrangement is row seating. Row seating is the most common seating arrangement in classrooms. Research in the row seating arrangement showed both positive and negative effects on student behavior. According to Atherton (2005), when students are placed in rows it is convened that students should be passive learners and are, “only meant to be seen and not heard in the classroom.” Research by Hastings and Schweiso (1995), found that the row seating arrangement improved on-task behavior and that the behavior of students who were the most disruptive improved while sitting in this arrangement. Lam and Wheldall (1987) found positive behavior from students who were seated in rows, in fact their on-task behaviors doubled.

However, a study done by Rosenfield, et al. (1985) found an increase in off-task behavior when using the row seating arrangement in a fifth grade class. Rosenfield, et al. (1985) also acknowledged that row seating was not a favorable arrangement to improve student off-task behaviors and found it to be the least effective. Rosenfield, et al. (1985), added that if teachers wanted to increase interaction among teacher and students that row seating was not the arrangement to accommodate students' needs. In another study that focused primarily on seating arrangement and students asking questions, Marx, Further and Hartig (2000) found that students ask their teacher more questions when were arranged in row seating. Rual and Wannarka (2008) indicated that a class' seating arrangement should be based on the particular activities that the students are engaged in at the moment. Rual and Wannarka (2008) also added that if students are working on independent or individual assignments, they should be seating in an arrangement that would create less interaction with their peers, such as row seating.

2. **Cluster seating:** A group of four desks touching each other on the same horizontal lines and the right and left vertical lines of the desk

The second seating arrangement is cluster seating. This seating arrangement is also known as group seating. Cluster seating has found to be effective in student collaborative learning, but at the same time their off-task behaviors increased. In a study done by Rosenfield, et al. (1985), they found that cluster seating had a positive effect on social interaction and that more students were actively participating during class discussions. The authors stated that, "common sense indicates that small clusters would heighten student interaction but might also limit teacher control and/or encourage social interactions that are not conducive to learning." According to Papalia (1994), cluster seating allows student to participate in remedial activities, games, and promotes peer assistance. Marx, et al. (2000), noted that cluster seating fostered an environment

that allowed interact with one another because of their close proximity. Atherton (2005) discusses that cluster seating can foster an active and engaging learning environment.

3. **Horseshoe seating:** Desks arranged in a way that resembles like a horseshoe

The final seating arrangement is horseshoe seating or u-shaped seating. According to Wengal (1992), in this seating arrangement there was an elevated amount of talking from the students. But on the other hand this seating arrangement allowed teacher's lesson to be more engaging for students. Wengal (1992) also indicated that this seating arrangement promoted participation and appropriate behavior. Papalia (1994) established that the horseshoe seating arrangement allowed students to be able to pay attention to the teacher, make eye contact, and allowed the teacher to have control of the class. Rosenfield, et al., (1985) acknowledged that if teachers wanted their students to interact more during class discussion, horseshoe seating arrangement is the best design to be considered.

Based on classroom design a student's behavior can be affected in either a positive or negative way. According to Black (2007), poor seating arrangements can affect students' learning by 50%. Therefore, in order for a teacher to create a learning environment that is conducive for all learners, classroom arrangement has to be taking into consideration. Making small changes such as moving desks to improve behavior and foster learning, is minimal when compared to other drastic interventions that are being used to remove problematic students. Additionally, seating organization should be something that is constantly changing as the teacher's lessons and activities evolve. Simply stated, classroom modifications are sometimes needed and can result in a more positive classroom environment for teachers and students. As a result, teachers can teach effectively and student performance can be enhanced.

Method

This study was intended to determine whether or not there is a better seating arrangement that could be utilized to minimize student off-task behavior within an inclusion classroom during independent tasks. The students were observed during reading while working on independent class work, when sitting in the three different seating arrangements: clusters, rows, and horseshoe. The researchers looked at the students on-task and off-task behaviors to see which, if any, seating arrangements contributed to the student being more or less off-task.

Participants

The study took place for a span of three weeks. The participants consisted of 21 second grade elementary students, in a public school located in a rural county in the Southeast region of the United States. There were 14 boys and 7 girls. The students' ages ranged from 7-8 and two students were 9 years old. Participants were assigned numbers to not disclose their identity.

Procedures

Each day the students were observed for one hour during reading instruction. The first week, the participants were seated in the cluster arrangement which had four clusters. Three clusters had four desks grouped together and one cluster consisted of 5 desks grouped together. The second week the desks were arranged in 4 vertical rows, three rows consisted of 4 desks and 1 row consisted of 5 desks. During the final week the desks were arranged in the horseshoe arrangement, 7 desks facing the front of the board and 7 desks to the right and left sides of the classroom. Participants were also randomly assigned seats for cluster, horseshoe, and row seating arrangements during the three week intervention. Because behavior was an area of focus no students were moved from their assigned seats based on of behavior.

Data Collection

There were three methods used to collect data; observation/anecdotal records, a behavior tally sheet, and a behavior checklist. The data collection was similar to a study done by Bonus and Riordan (1998). Observation checklists and anecdotal records were used daily by the teachers. The information gained from the checklists and anecdotal records were used to compare the number of off-task behaviors for each seating arrangement. All three methods for collecting data were used every day for each of the three seating arrangements while students were working on independent work during reading. Inappropriate talking, out of seat without permission, not following directions, and not beginning independent work promptly are the behaviors that were targeted during this study. Inappropriate talking will be defined as recreational talk or talking about anything not related to the independent practice activities and not following directions will be defined as doing anything other than independent reading practice activities. During each day of independent practice, students were either working on vocabulary, phonics skills, or weekly high frequency words activity sheets. Each day students were given their directions on how to complete their independent practice sheets. Each independent practice skill was taught previously during whole group reading instruction and was reinforced during independent practice.

Results

The first method of data collection involved observing students while they were working on independent work. While the students were completing independent practice, the researcher took anecdotal records of the off-task behavior observed. Off-task behavior happened more when students were either finished or beginning their independent assignments. Based on the observational records, off-task behavior happened in each of the three seating arrangements and

most often by the same students. Inappropriate talking was the behavior displayed most often, and not following directions was the behavior that occurred the least (Figure 1).

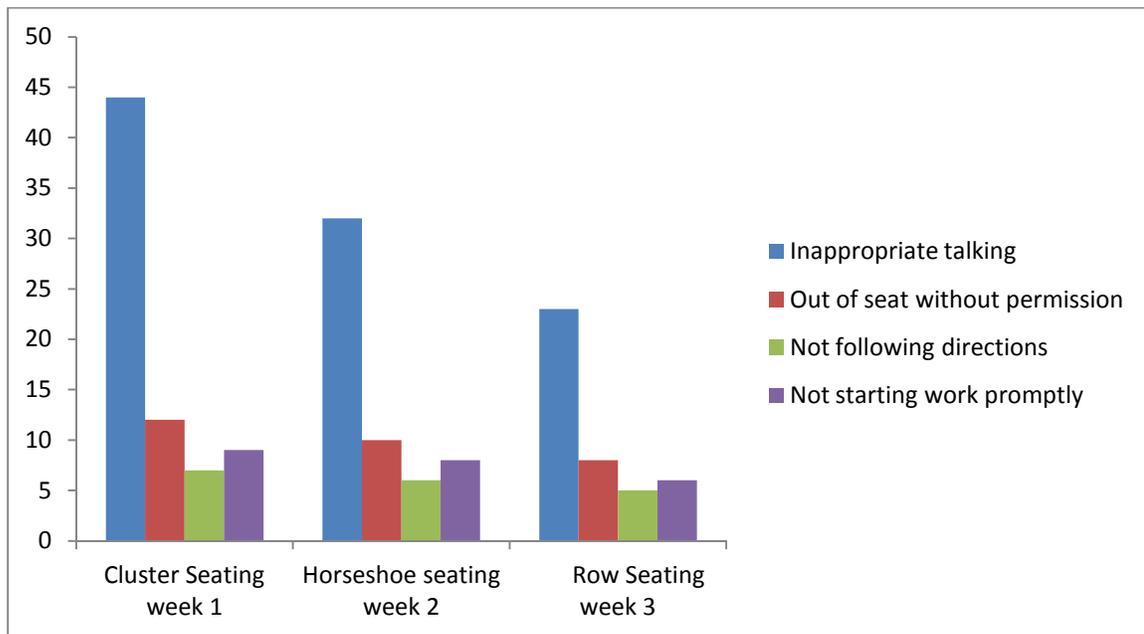


Figure 1. Comparison and Total Number of off-task behavior each week

The second method of data collection involved a behavior tally sheet. The behavior tally sheet was used to keep a tally of all targeted off-task behaviors that were observed during the three week study. This behavior checklist allowed for triangulation of data because the researchers were able to keep a running record of off-task behaviors while students were working independently. From this method of data collection it was determined that inappropriate talking happened more while students were seated in the cluster arrangement. Students not following directions which was the least observed off-task behavior was displayed the fewest amount of time when students were seated in rows. While students were seated in rows, the targeted off-task behaviors were noted 42 times compared to 72 times for cluster seating and 56 times for horseshoe seating throughout the entire study.

Table 1

Total number of off-task behaviors per seating arrangement for entire study

Seating Arrangement	Number of Off-Task Behaviors
Cluster Seating	72
Horseshoe Seating	56
Row Seating	42

The third method of data collection was a behavior checklist used by the teacher of the classroom. The teacher behavior checklist was used as another form of triangulation. Based on the teacher checklist, off-task behaviors occurred most of the time from the same students. Specifically, eight boys and four girls displayed one or more of the targeted off-task behaviors.

Table 2

Off-task behaviors from teacher checklist during all seating arrangements

Student	Inappropriate talking	Out of seat w/o permission	Not following directions	Not starting work promptly
1 (boy)	4		2	2
2 (boy)	5	6	2	1
3 (boy)				
4 (boy)	23	5	3	7
5 (girl)				
6 (girl)				
7 (girl)				
8 (girl)	15	3	1	4
9 (boy)	12	8	1	3
10 (girl)				
11 (boy)	1			
12 (boy)				
13 (boy)	7	2	3	1
14 (girl)				
15 (girl)	3			
16 (boy)				
17 (boy)				
18 (boy)	15	6	4	5
19 (boy)				
20 (boy)	9		2	
21 (girl)				

Discussion

After analyzing data, it was observed that seating arrangement can influence student behavior, particularly in this second grade class. It was also determined that the best seating arrangement for independent assignments in this second grade class was row seating. When students were sitting in the row seating arrangement, the targeted behaviors occurred the least amount of times. Also, disruptive behaviors seemed to be more individual rather than a group of students being disruptive and off-task when students were sitting in rows. Although, row seating displayed the least amount of off-task behaviors, this arrangement did not foster collaborative work among the students and it utilized the most physical space in the classroom. While students were sitting in rows, it was difficult for those who were sitting in the back of the class to be engaged in class discussions before small group lessons. When having class discussions or cooperative learning groups, the authors recommend another seating arrangement such as cluster or horseshoe. Even though the row seating arrangement did not foster collaborative work, it was however a good seating arrangement to be used when students were taking assessments and working independently.

Cluster seating was the least beneficial arrangement for this second grade class while completing independent work. Even though this seating arrangement allowed students to work in groups and to share materials, there were more off-task behaviors than any other arrangement examined with a total 72 off-task behaviors noted. While students were seated in the horseshoe arrangement there were a total of 56 off-task behaviors noted and 42 off-task behaviors noted while seating in rows. Additionally, in all three seating arrangements, the most frequent noted off-task behavior was inappropriate talking while the least occurring off-task behavior was not following directions. It was also determined that boys were more off-task than girls in all three seating arrangements.

The best seating arrangement should not be determined based entirely off the results of this study mainly because each of the three arrangements was beneficial in some way. The lessons that are being taught should be the deciding factor on how students' desks are arranged. For example, although cluster seating produced the most talking, it was the ideal seating arrangement for these particular students to engage in cooperative learning. Also, it was easier for the teacher to monitor and assist students during individual and group activities. Choosing the best seating arrangement to reduce behavioral issues within the classroom will allow the teacher more time to spend teaching and meeting the needs of all students. Changing the arrangement of the students' desk could be an easy fix to control some mild to moderate behavior problems.

Recommendations

Finding the appropriate seating arrangement can be very difficult to determine, mainly because one seating arrangement cannot be used to meet the academic and social needs of all students. There were positives and negatives for each of the three seating arrangements. A negative is that all of the targeted behaviors were noted in all of three of the seating arrangements; while on the other hand, students were participating and engaged in cooperative learning. Second grade is a transitional grade. Some students are still making the transition from first grade; therefore, being told to remain quiet for a prolonged period of time may be a difficult task to manage for an eight year old. Students are going to be social and some students may still require a lot of redirecting. Some students will talk no matter what seating arrangement they are placed in and no matter where they are place in the classroom. It is also to be expected that at this age, some students will find it is difficult to not engage in off behaviors.

It is recommended that the teacher choose a seating arrangement that best fits the needs of their students. It is also recommended that the teacher does not keep the same seating arrangement for the entire duration of the school year and that the teacher carefully place

students with special needs or behavior students in close proximity to the teacher in order to ensure delivery of instruction and to reduce behavioral issues.

In order to select the best seating arrangement for a class, the students' desk should be arranged to accommodate whatever activity they are working on for the lesson. Then, a teacher can make a professional decision about which seating arrangements will work best. For example, if the students are working on group assignments, perhaps cluster seating should be used. Whereas, if the students are working on individual assignments or assessments, row seating could be the seating used. No matter what seating arrangement is chosen by the teacher, all students should have a clear view of the teacher at all times.

The goal of this study was to determine if there was an appropriate seating arrangement to be utilized to decrease off-task behaviors when completing independent work in a second grade, inclusive classroom. Keeping in mind that engaging students in meaningful and purposeful activities are also essential components to keep students on-task during independent practice. Therefore, a final recommendation is that the teacher plans and arranges her room according to her student's specific needs to provide students with the best opportunity to meet their highest academic potential.

Implications

Teachers who want to maximize the on-task behavior of their students during work should consider using rows rather than groups as their primary seating arrangement and moving desks into other positions to facilitate interaction when called for. The nature of the task should dictate the seating arrangement for students to be successful.

Teachers typically receive little or no training in how to best organize their classrooms and seem to arrange their classroom from other experiences. Incorporating attention to the physical

structure of the classroom during teacher training may provide valuable assistance to teachers for effective classroom management.

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