8-12-2010

A nonverbal signal system: minimizing the effects of student interruptions, maximizing instructional time, and sustaining momentum while teaching

Mallory Heimlich

A NONVERBAL SIGNAL SYSTEM: MINIMIZING THE EFFECTS OF STUDENT INTERRUPTIONS, MAXIMIZING INSTRUCTIONAL TIME, AND SUSTAINING MOMENTUM WHILE TEACHING

by
Mallory S. Heimlich

A Thesis

Submitted in partial fulfillment of the requirements of
Masters of Science in Teaching Degree
of
The Graduate School
at
Rowan University
June 2010

Thesis Chair: Valarie G. Lee, Ed.D.

ABSTRACT

Mallory S. Heimlich
A NONVERBAL SIGNAL SYSTEM: MINIMIZING THE EFFECTS OF STUDENT INTERRUPTIONS, MAXIMIZING INSTRUCTIONAL TIME, AND SUSTAINING MOMENTUM WHILE TEACHING
2009/2010
Valarie G. Lee, Ed.D.
Master of Science in Teaching

With instructional time being interrupted by both in and out-of-class disturbances, research shows that approximately 30% of instructional day is wasted. Students are *more* likely to be unengaged and off-task when the teacher is interrupted than at other times and most classroom interruptions are initiated by the students themselves. The goal of this study was to decrease student interruptions and transition time by implementing a nonverbal signal system as a component of the classroom management plan. Student interruptions were tallied and student transitions were timed during social studies and science in a fourth grade classroom. Reflections of the study were recorded and written student responses from pre-intervention and post-intervention focus groups were collected. Individual student grades before and after the system's implementation were compared. Data analysis showed that nonverbal signals decreased student interruptions and transition time, thus increasing the quantity of instructional time, and more importantly, nonverbal signals minimized the effect of student interruptions that occurred, thus sustaining momentum while teaching. With this system, the teacher

addressed the students' needs quickly and quietly with minimal interruption to the classroom. However, further research over a longer period of time is necessary to determine whether the system's effects positively influence student achievement.

ACKNOWLEDGEMENTS

I would like to thank my Yellin Family—both teachers and students—particularly Mrs. Melissa Wolfe, Mrs. Robyn Williams, Mrs. Stacey Kay, Mrs. Kathy Gant, and of course, my wonderful and brilliant fourth graders. Without them (and their relentless noise and endless chitchatting), this thesis would not have been possible.

I would like to thank Mrs. Jean Dale for her support and kind words. I am forever grateful and so thrilled that I will be a third grade teacher come September at the wonderful Hopewell Crest School!

I would also like to thank my wonderful husband as of June 19, 2010. I love you, Bruce. Without you, I don't believe I would have made it through this past year! I can't believe that we already own a home, finished college, and both landed fantastic jobs. Now we can finally start *living*! P.S. I love you, Chopper Whopper and Brooklyn!

And of course, I would like to thank my parents and brothers and poodles for their love and support. I love you, Mom, Dad, K-Dawg, Topher, Chloe, and Oliver. P.S. Mom and Dad, thank you for giving Bruce and me a wonderful wedding!

TABLE OF CONTENTS

CHAPTER I

Introduction

"You walk into the classroom and stand waiting for a few seconds, a single eyebrow raised. As if by magic, the children fall silent, ready to soak up your words of wisdom (Cowley, 2002, p.22)."

Cowley goes on to say that this is every teacher's dream—a class that quiets itself down in mere seconds without the teacher having to utter a single syllable. However, for most teachers, this scenario remains just that—a dream (Cowley, 2002). If you are an experienced teacher or even a teaching-in-training like me, you have been bombarded with mind-numbing noise in a variety of forms. Have you ever thought about how many seconds (or even minutes) it takes to quiet a class before your lesson can begin? Have you ever counted the amount of times you verbally tell students to quiet down in a single school day? Or have you ever thought about how many times you are asked questions like "Can I go to the bathroom?" "Can I get a drink?" "Can I sharpen my pencil?" (and the list goes on and on) in between classes and even during them? Chances are you are asked these types of questions many, many times a day, and odds are these questions interrupt lessons, slow down transition time between classes, and even interrupt important trains of thought. Cowley believes that "noise is the enemy of effective teaching" (Cowley, 2002, p.22), which is why this student teacher and action researcher

will be combating the noise and interruptions students make with nonverbal signals. It is the hope of this action researcher and future teacher that interruptions will be minimized and transition time will be lessened in order to maximize instructional time and sustain momentum while teaching for greater student success.

Purpose Statement

"A teacher should be a student of human communication, and the classroom is [her] laboratory" (Thompson, p.3).

Verbal communication is emphasized in teacher education programs and courses regarding public speaking are a part of the curriculum. However, nonverbal communication is often overlooked in teacher education programs and nonverbal communication, in general, is "one of the least studied of human activities" (Thompson, 1973, p.1). This study focuses on nonverbal communication as an integral part of the classroom management plan. Classroom management is a widely researched topic, and many theories and strategies have been implemented in classrooms around the world; however, nonverbal classroom management is a "newcomer to the field" (Edwards, p.7). Classroom management will be discussed in full and the importance of an effective management plan will be also discussed in the review of literature.

This study focuses on hand signals, gestures, and sound cues to nonverbally manage various aspects of the classroom. Additionally, both teacher and students will use hand signals and gestures to communicate with one another, and both the teacher and students will use confirmation signals such as thumbs up or thumbs down and head nods

to communicate. The definition of signal and gesture and its importance will become clearer as the review of literature and methodology help develop the argument for nonverbal communications and its place in the classroom as well as its place in this action research.

During this study, the nonverbal signal system implemented will be studied and its effects on the quantity of instructional time will be calculated because the interruption and loss of instructional time is a problem most, if not all, teachers face. Instructional time can be lost or disrupted by student interruptions (Erickson, 1980). The researcher will define instructional time and its "multifaceted nature" (Berliner, 1990, p.1) and discuss its relevance to this study in the review of literature in chapter two as well as discuss the impact of student interruptions on learning. Research shows that students are *more* likely to be unengaged and off-task when the teacher is interrupted than at other times (Erickson, 1980). Therefore, signals for such student interruptions as bathroom trips, pencil sharpener trips, drinks of water, and needed assistance or questions will be performed by the students. Additionally, nonverbal signals for quieting down the students and transitioning will be an integral part of this nonverbal signal system and performed by the teacher (Sprick, 1998). A major component of this nonverbal signal system is a set of clear rules and expectations for these interruptions and for the system itself. The management plan and its nonverbal signal system must be put in place and become routine for both the teacher and students in order for instructional time to be most effective.

With this nonverbal signal system set in place as part of the classroom management plan, it is the hope of this researcher that interruptions will be decreased and the effects of interruptions that do occur will be minimized, thus increasing the quantity of uninterrupted instructional time and sustaining momentum while teaching, which is critical to student learning and is significantly related to achievement (Erickson, 1980; Anderson, 1976; Arlin and Roth, 1978). The researcher feels that this study is unique and will fill a gap in the research on nonverbal classroom management.

Statement of Research Problem and Question

With instructional time being interrupted by both in and out-of-class disturbances, approximately 30% of instructional day is wasted (Orlich, 2007). Therefore, in-class and student interruptions should be cut down as much as possible in order to maximize instructional time and sustain momentum while teaching by implementing an effective classroom management plan. The question that this study will answer is "What happens when a nonverbal signal system is put in place as a component of the classroom management plan?"

Story of the Question

While reading Harry K. Wong's *First Days of School: How to be an Effective Teacher*, I was inspired to brainstorm ideas for my action research study. Wong emphasizes the importance of classroom management and its effect on student success. I knew that I wanted to research and study something regarding classroom management because I agree with Wong and feel that an effective classroom management plan is

essential for student success (Wong, 2004). In a classroom management plan, principles, rules, and procedures should be clearly presented, and a classroom management plan should be set in place and made routine for students before actual content is taught (Wong, 2004). Another important aspect of a classroom management plan is quieting procedures for a class (Sprick, 1998) because it is imperative that a teacher quiets the room before starting a lesson. According to Cowley (2002), "Establishing complete silence tells your students that you are in control of their [behavior] and their learning." I knew I wanted to incorporate all of these elements into my classroom management plan, but I wasn't sure how I wanted to do it.

Then I really started to think about the classroom management I was observing in my clinical placement. I kept thinking to myself that there was just way too much noise. Students were constantly asking questions that would interrupt lessons and slow down the transitions between classes. Teachers' voices and tempers were strained by the end of the day. I wanted to think of a way to combat the noise, but be effective in quieting students, making transitions run more smoothly and quietly, and cut down the amount of student-produced interruptions or at least minimize their effect. That's when I thought about hand signals. I had already been using two hand signals for confirmation purposes and to check student progress while teaching a lesson; I had students give thumbs-up and thumbs-down for a variety of reasons, and I used these signals as well. These simple hand signals helped me formulate the main research question of this study. "What happens when a nonverbal signal system is put in place as a component of the classroom management plan?" However, there are other questions this study will attempt to answer.

Such as "Will using nonverbal signals minimize the effect of student interruptions? Will using nonverbal signals decrease student interruptions? Will using nonverbal signals help to increase the quantity of instructional time? And finally, will student performance improve because of the increased quantity of instructional time?"

Organization of the Thesis

In chapter one I have presented the idea that an effective classroom management plan results in fewer interruptions to instructional time and creates an atmosphere conducive to learning. I have also presented the idea of incorporating nonverbal communication into a classroom management plan to determine whether or not it is effective in cutting down interruptions and minimizing the effects of interruptions that do occur. Chapter two presents a review of literature regarding interruptions and the quantity of instructional time and also discusses what classroom management is and its importance. Chapter two reviews literature regarding nonverbal communication and its use in the classroom. Finally, chapter two concludes with a review of literature showing positive correlations between the amount of instructional time and student achievement. Chapter three presents the research setting, design methodology and context for the study, including limitations and boundaries of this particular action research. Chapter four presents an analysis and discussion of the data collected in the study. Chapter five concludes with the findings and implications of this study as well as how these findings support the original questions posed.

CHAPTER II

Review of the Literature

Introduction

"Time is a nonrenewable resource in the classroom. Teachers only have a finite amount of it, and when it is gone there is no way to generate more" (Stronge, 2004, p.96)

The interruption and loss of instructional time is a problem most, if not all, teachers face. Chapter two presents a review of literature regarding interruptions and the quantity of instructional time. Chapter two also reviews literature regarding the importance of classroom management that serves to maximize instructional time and potentially increase student performance. This study will address classroom interruptions by implementing a nonverbal signal system as a part of the classroom management plan in order to decrease interruptions, minimize the effect of interruptions that cannot be avoided, and increase instructional time, thus increasing student performance. The first section focuses on the definition of instructional time, which has a "multifaceted nature" (Berliner, 1990, p.1). The second section focuses on the frequency of classroom interruptions and the idea that the strategies effective teachers use can minimize the effects of classroom interruptions. The third section focuses on classroom management and the role it can play in cutting down classroom interruptions and maximizing instructional time. The fourth section includes a discussion of nonverbal communication

and its use in the classroom. The chapter concludes with evidence of positive correlations between the amount of instructional time and student achievement.

What is Instructional Time?

David C. Berliner states that instructional time has a "multifaceted nature" (1990, p.1) and that a variety of concepts fall under the category of instructional time. The following concepts fall under the category of instructional time and are relevant to this study of classroom management strategies in the form of nonverbal signals. The first concept of instructional time is *engaged time*, or attention, which is the time that students appear to be paying attention to teacher presentation of information or materials "that have instructional goals" (Berliner, 1990, p.2). For data collection purposes, engaged time can be measured by classroom observers while the teacher is presenting a lesson, or by the teacher herself if she records the lesson via video camera and then reviews the tape to calculate the amount of time a student or students were engaged (Berliner, 1990). A second concept of instructional time is *time-on-task*, which is the engaged time on specific learning tasks. However, time-on-task differs from mere engagement; time-on-task requires that a student be engaged in one specific task (Berliner, 1990). According to J. B. Carroll, time must be filled with desirable activities (1989). For example, during a mathematics class, a student is on task if he is engaged in the math assignment at hand; but a student is off-task if he is engaged in something other than the math assignment at hand like reading a book or working on a science worksheet. As for recording purposes, time-on-task can be measured in the same manner as engaged time by calculating how

much time students are on task or by calculating the frequency that a student is on task (Berliner, 1990).

A third concept of instructional time is *transition time*, which is defined as "the noninstructional time before and after some instructional activity" and "...describes the inevitable decrease in time allocated for instruction..." (Berliner, 1990, p.3). Transition time can be measured in the same manner of both engaged and time-on-task by calculating how long a transition takes. A fourth concept of instructional time is *waiting time*, which is the amount of time a student waits to receive instructional assistance. Such examples include the amount of time a student waits to receive a new assignment from the teacher, the amount of time a student waits in line to have the teacher check his/her work, or the amount of time a student waits for the teacher's attention after raising his/her hand in class (Berliner, 1990).

These concepts of instructional time will be examined and measured in this study to help determine whether or not a nonverbal signal system as part of a classroom management plan lessens transition time and minimizes the effects of classroom interruptions that take students away from being engaged or on task. If successful, the nonverbal signal system will increase the amount of instructional time in terms of these four concepts by decreasing the amount of time it takes to transition and by decreasing the amount of time a teacher must spend responding to classroom interruptions, thus having the potential to increase student performance. The following section discusses the various types of classroom interruptions and their effects.

Classroom Interruptions

Keeping students engaged and on task and keeping transitions quick and smooth as possible is vital to learning. However, classroom interruptions distract students and lead students to become unengaged and off-task (Erickson, 1980). In a study of major classroom interruptions, a "major interruption" was defined as "any occurrence that distracted a teacher from teaching to attend to an unscheduled activity for a period of longer than 10 seconds" (Erickson, 1980, p.41). There were three types of interruptions identified in this study: "pupil interruptions, external interruptions, and teacher interruptions" (Erickson, 1980, p.41). The study concluded that students are *more* likely to be unengaged and off-task when the teacher is interrupted than at other times and that most classroom interruptions were initiated by the students themselves (Erickson, 1980). This study will attempt to minimize the effects of student interruptions by creating nonverbal signals for such simple yet numerous interruptions as bathroom trips, pencil sharpener trips, and water fountain trips as well as nonverbal signals for quieting down the students and questions or concerns because the effects of interruptions can be minimized depending upon how the teacher reacts to these interruptions (Erickson, 1980). In this nonverbal signal system, the teacher will also use nonverbal signals so as to address the students' needs quickly and quietly with minimal interruption to class time and to the momentum of a lesson. Momentum means that all students are engaged and on task, and the lesson is moving along smoothly (Partin, 2009). "Most discipline problems do not occur during periods of momentum but rather during those moments of chaos—when something has broken the lesson's momentum" (Partin, 2009, p.32) such as

student interruptions. This nonverbal signal system will be a major component of the classroom management plan put in place and will work to decrease student interruptions and increase instructional time. The following section discusses what classroom management is and why it is important.

Classroom Management— What it is and Why it is Important

Classroom management refers to all of the things that a teacher does to organize students, space, time, and materials so that learning can take place (Wong, 2004). In a well-managed classroom, there is very little wasted time, confusion, or disruption (Wong, 2004). A classroom management plan is not a discipline plan, but is a set of procedures and routines for accomplishing things in the classroom and structures the classroom so that students know how things work in the classroom, resulting in fewer interruptions (Wong, 2004). When forming a classroom management plan consisting of principles, rules, and procedures, R. L. Curwin and A. Mendler (as cited in Rademacher and Callahan, 1998, p.2) define the word 'principle' as a term describing the positive attitudes and expectations for long-term growth, and following these guiding principles are rules that students must follow in order fulfill the principles' requirements. Once a guiding principle is selected and rules are laid out, then a teacher can create procedures, which are defined as specific activities aimed at accomplishing something related to the rule at hand. Therefore, principles, rules, and procedures are necessary for instruction to continue without major disruptions.

Studies show that 30% or more of the instructional day is lost because of interruptions (Orlich, 2007). "Whatever its cause lost time has a negative impact on

student academic achievement and it contributes to student behavior problems" (Orlich, 2007, p.202). Obviously some interruptions are inevitable, but effective classroom management will remove the unnecessary interruptions, and a consistent classroom management system can save instructional time by minimizing the effects of interruptions that do occur (Partin, 2009). Additionally, teachers who are better classroom managers are better able to maximize engaged time (Konza, 2001), and according to Rademacher and Calahann (1998), an effective classroom management plan promotes independent learning and success for all students in a classroom that is productive, organized, and enjoyable.

In a classroom management plan, principles, rules, and procedures should be clearly presented, and the teacher should give reasonable explanations for why these items are necessary in a classroom (Wong, 2004), and the teacher should inform students why they should cooperate and stay-on-task and how they should do so (Anderson, 1979). Teachers should also think in terms of observable student responsibilities when formulating rules and supporting procedures (Rademacher and Callahan, 1998), and teachers should also allow students to help make the classroom rules so as to give the students ownership of the rules (Gutloff, 1998). Additionally, all principles, rules, and procedures should be posted in the classroom so students can remind themselves of what is expected of them and how to proceed once they have been thoroughly presented by the teacher (Gutloff, 1998; Wong, 2004). According to Wong (2004), there is a three-step approach to teaching classroom procedures. First a teacher should state, explain, model, and demonstrate the procedure; next the teacher should have students rehearse and

practice the procedure; and finally, the teacher should re-teach, rehearse, practice, and reinforce the classroom procedure until it becomes habitual or routine for the students.

Various procedures should be outlined in a teacher's classroom management plan. Procedures for such classroom interruptions as transitioning/quieting down (gaining student attention), using the bathroom, getting a drink, and asking questions or sharing concerns should be implemented. As noted in *CHAMPs*, an attention signal is the most critical component of a classroom management plan (Sprick, 1998, p. 61). Gutloff (1998) suggests that nonverbal signals be used to bring order and quiet to the classroom quickly. Randi Stone (2005, p.23) recommends setting goals for students in addition to making rules so that students can have something to strive for. One such example directly related to this study is his use of the guiding principles of having a quiet classroom and transitioning quickly. Stone used hand-signals to quiet students and noted the length of time it took the students to quiet down. Stone would then tell students how long it took for them to quiet down and would ask the class what they believe their goal should be for this task. The students would then strive to reach their goal for quieting down and if reached, "[They] celebrated" (Stone, 2005, p.23).

In this study, a nonverbal signal system will be an integral part of the classroom management plan. The guiding principles for this nonverbal signal system—decreasing interruptions and increasing instructional time—will be presented to the students. Clear and concise rules, procedures, and goals created by the students (along with teacher input) will be established so that each student knows what is expected of them and how

they each can play their part in the class reaching its goals that honor the guiding principles of the system. Components of this nonverbal signal system include signals for quieting and transitioning, signals for questions and concerns, and signals for various types of trips (bathroom, pencil sharpener, drink). The following section will discuss what nonverbal communication looks like in the classroom and its advantages.

Nonverbal Classroom Management

> "Nonverbal communication is one of the least studied of human activities. ...Yet when humans communicate, as much as eighty percent of the meaning of their messages is derived from nonverbal language (Thompson, 1973 p.1)."

This study focuses on nonverbal communication as an integral part of a classroom management plan. Classroom management is a widely researched topic, and many theories and strategies have been implemented in classrooms around the world; however, nonverbal classroom management is a "newcomer to the field" (Edwards, p.7). Nonverbal communication can be defined in a variety of ways. Nonverbal communication is comprised of various aspects: facial expression, gaze, head and body posture, hand signals, gestures, interpersonal distance and spacing (Neill, 1993, p.9). This study is concerned with specific types of nonverbal communication. This study focuses on hand signals, gestures, and sound cues. Thompson (1973) defines a gesture as a movement of the head or limbs that has "communicative value to someone capable of inferring meaning" (p.141), and signals are defined by Merriam-Webster as a sound, gesture, or object that conveys notice or warning. In the classroom, hand signals can be used in many ways. Simple hand signals can be used to confirm 'yes' or 'no,' nominate

who is to talk by pointing at them, or have students stop talking by holding up a hand (Neill, 1993). Of utmost importance is the attention-getting signals used to quiet down the classroom and transition students. According to Neill,

> "Attention-getting skills are particularly important in maintaining control and avoiding waste of time at the start of lessons and when moving from one section of the lesson to another. Clear marker signals are needed to attract attention... Having gained attention, it is then necessary to show you can act divisively; administrative tasks should be dealt with rapidly and efficiently" (Neill, 1993, p.91).

In this study's nonverbal signal system, both teacher and students will use hand signals, gestures, and sound cues to communicate with one another. Nonverbal signals for quieting down the students and transitioning will be a part of this nonverbal signal system and performed by the teacher. Additionally, signals for such student interruptions as bathroom trips, pencil sharpener trips, drinks of water, and needed assistance or questions will be performed by the students. Both the teacher and students will use confirmation signals such as thumbs up or thumbs down and head nods to communicate. With this nonverbal signal system set in place as part of the classroom management plan, it is the hope of this researcher that interruptions will be decreased and the effects of interruptions that do occur will be minimized, thus increasing the quantity of uninterrupted instructional time and sustaining momentum while teaching. The following section discusses positive correlations between the amount of instructional time and student achievement in regards to effective classroom management.

Positive Correlations between Increasing Instructional Time and Student Achievement

> "No adult who ever taught a child could fail to learn that instructional time, particularly time-on-task, is an important instructional variable" (Berliner, 1990).

Many researchers have studied the relation between instructional time and student achievement and have drawn similar conclusions about this topic (Anderson, 1979; Rosenshine & Berliner, 1978; Wiley & Harnischeger, 1974). According to Berliner (1990), there is a positive relationship between instructional time measures and measures of achievement. He goes on to say that the relationship is stronger for time-on-task than it is for engagement alone. Furthermore, current research shows that "there probably are no effective teachers, as measured by standardized achievement test scores, who are not good at the management of instructional time... [and] the control of attention..." (Berliner, 1990, p.6).

Of utmost importance to this study are the ideas of classroom management and engaged time and attention (or time-on-task). Classroom management is the foundation for increasing teaching and learning time; it reduces idle or wasted time by decreasing the chance of interruptions and minimizing the effects of interruptions that do occur (Wong, 2004). Effective teachers do more with their time (Cruickshank & Haefele, 2001) and use class time efficiently while focusing on academics (Anderson, 1979). Effective teachers have effective classroom management plans. Anderson (1979) states that "better managers" *engage* students while teaching and considers "good management" to be when there is a large number of students that are on-task. Additionally, effective teachers instill and enforce behavior expectations (Anderson, 1979) and invest time at the

beginning of the year to establish routines and expectations that prevent the loss of time during transitions or student disruptions (Stronge, 2004); concepts that are both relevant to this study.

Various management practices maximize the time students spend actively engaged in learning activities and may contribute to higher engagement. Some of these practices include shorter, more efficient transitions, the use of routines and procedures, and arranging class time so that there is minimal time that students are not engaged in learning activities. (Anderson, 1979; Anderson, Evertson, & Brophy, 1979; Brophy & Evertson, 1976; Brophy & Putnam, 1979.) In order to improve classroom management and organization, a teacher should focus on instructional time in terms of transition time and the time students are actively engaged. Arlin (1979) found that teachers' behaviors during classroom transitions could interrupt or enhance continuity of students' attention. "Changes in [transition time and academic engagement] are not hard to make, and those changes affect classroom functioning rather rapidly" (Berliner, 1990, p.26). Not only is the quantity of instructional time imperative to student learning, but momentum (or the continuity) of students' attention while engaged academically is also critical to student learning and is significantly related to achievement (Erickson, 1980; Anderson, 1976; Arlin and Roth, 1978).

Conclusion

As the literature states, instructional time is "multifaceted [in] nature" (Berliner, 1990, p.1) and consists of engaged time, attention or time-on-task, transition time, and waiting time. These concepts of instructional time will be examined and measured in this

study to help determine whether or not a nonverbal signal system as part of an effective classroom management plan *lessens* transition time and *minimizes* the effects of student interruptions that take students away from being engaged or on task. In this nonverbal signal system, the teacher will use nonverbal signals so as to address the students' needs quickly and quietly with minimal interruption to class time and to the momentum of a lesson (Gutloff 1998). Additionally, an attention signal used by the teacher to quiet students will be the most critical component of this nonverbal signal system and classroom management plan (Neill, 1993; Sprick, 1998). As the literature states, the quantity of instructional time and momentum of student attention have positive correlations with student learning and achievement (Erickson, 1980; Anderson, 1976; Arlin and Roth, 1978). This researcher hopes to decrease student interruptions and minimize the effects of unavoidable interruptions, while increasing the quantity of instructional time and preserving the momentum of student attention, all through the use of nonverbal signals as part of an effective classroom management plan. Chapter three presents the research setting, design methodology and context for the study, including limitations and boundaries of this particular action research.

CHAPTER III

Research Setting and Design Methodology

Introduction

This teacher research was completed during the final semester of my Master's of Science in teaching program. This chapter provides a description of my clinical teaching placement and the students and teachers with whom I worked. It also describes the classroom and the elementary school where this study was completed and gives a description of the school district's population and the socioeconomic backgrounds of its citizens. Additionally, this chapter describes the type of research being performed in this study and the procedures taken by this teacher-researcher to collect pre- and post-intervention data. It also describes the methods used to analyze the data collected and limitations to the data collected and analyzed in this teacher research study.

Context of the Study

Community

Samuel S. Yellin School is located in Stratford, New Jersey. According to the Borough's official website, it is bordered by Borough of Hi-Nella on the north and Gloucester Township on the north and east, the Borough of Somerdale and the Borough

of Lindenwold is to the west, and the Borough of Laurel Springs and the Borough of Lindenwold to the south.

Recreational facilities include five parks, play fields and playgrounds. There are various charitable, non-profit organizations such as Stratford Athletic Organization, Tar-Kill (Soccer), Summer Programs, Sterling Youth Athletic Association, the Sterling Kiwanis, the Stratford Women's Club, and the William Kenney Memorial VFW Post.

The Borough of Stratford is governed under a Mayor-Council form of government. The Council consists of six members elected at large for three year terms. The Mayor is elected to a four year term. The Municipal elections are held on the Tuesday next after the first Monday in November.

The 2000 Census showed there were 7,271 people living in the 1.59 square miles of Stratford. 98.2% of Stratford's population lives in a household, totaling 2,736 households. Out of the households, 1,907 were families. 34.8% of households had children under the age of 18 living with them, and 54% were married couples, 11.8% were households lead by a female with no husband present, and 30.3% were made up of non-families. The average household size was 2.61 and the average family size was 3.18.

The racial make-up of Stratford taken from the Census in 2000 was 88.6% White, 6.6% African American, and 3.8% Hispanic or Latino. The city population is spread out with 27.1% under the age of 19, 5.6% from 20-24, 29.9% from 25-44, 21.6% from 45-64 and 15.8% who were 65 and older. The median age was 37.7 years. The median household income for the city was $50,977 and the median income for a family was

$57,000. The per capita income for the city was $21,748. About 9.2% of families and 12.4% of the population were below the poverty line.

School

Samuel S. Yellin School has a total of 513 enrolled students. The school is made up of 87% White students, 7% black and 4% Hispanic. Out of the students that attend school, 10% of students receive free lunch and 4% of students receive reduced lunch. The school houses grades four to eight. The number of homerooms per grade level varies between 3 and 4. There are multiple resource rooms and an inclusion homeroom in each grade. There is also a basic skills pullout classroom. The teacher to student ratio is 1:14, and there are thirty-seven classroom teachers. There are also multiple instructional aides that service grades four to eight on a rotating schedule. There are special area teachers for library, health, art, music, computers, and PE. There is a world language teacher who teaches Spanish, and certain classroom teachers have been assigned NJ ASK Prep courses to teach multiple times per week.

Participants in Study

The fourth grade homeroom consisted of twenty-six students; four special education students are a part of the twenty-six and receive instruction with the homeroom only for special areas, science, and social studies. A teacher aide is present during science and social studies to assist the special education students. Otherwise, these students are self-contained with a separate special education teacher for major subject areas. There were fifteen boys and eleven girls. The class was made up of White, Black,

and Hispanic backgrounds. The fourth grade homeroom switched between two classrooms for both science and social studies—the two subjects in focus for this study.

Methodology

Description of General Methodology

"...Teaching...is both art and science. And we must study teaching as teachers. For us, teaching *is* research and research *is* teaching" (Hubbard and Power, 1999, p.21)

According to Hubbard and Power (1999), "research is a process of discovering essential questions, gathering data, and analyzing it answer those questions (p.3)." Lytle and Cochran- Smith (2009) define teacher research as "a systematic, intentional inquiry by teachers" (p.40). Teacher research is research started and carried out by teachers in their classrooms and schools (Hubbard and Power, 1999), and "is a natural extension of good teaching" (Hubbard and Power, 1999, p.3). Qualitative teacher research was selected for this study because teacher research has many advantages and would work best for studying students in their natural setting, the classroom. The teacher knows firsthand how a classroom runs and what may work best for students in comparison to quantitative research in which an outsider may enter her classroom in order to study the students or the outsider may pull the students out of their natural environments to study them in a laboratory setting. With teacher research, the teacher can closely observe students at work in her classroom, a real classroom, not an artificial one. Additionally, qualitative teacher research "[helps] teachers understand [their] students and improve

[their] practice in specific, concrete ways (Hubbard, 1999, p.3) because teacher research arises from problems of practice in the classroom, and the findings are intended to be used and applied with the context of which they were studied (Lytle& Cochran- Smith, 2009). Therefore, to best study whether or not a nonverbal signal system positively affects instructional time by decreasing student interruptions and minimizing the effects of interruptions that do occur, qualitative teacher research will be used in this study.

Procedure of Study

As a teacher-researcher, I monitored and practiced classroom routines during my first weeks at school so as to become a part of the classroom community. I collected pre-intervention data for an entire week of social studies (four days) and an entire week of science (four days) so that the entire homeroom would be included in the study. The students had one period of social studies each day, Tuesday through Friday, and one period of science each day, Monday through Thursday. The time of day for each of these subjects varied depending on the day of the week. Additionally, these two subjects were not always back to back depending on the day's schedule. I also timed how long it took for students to line up and quiet down so that they could head to lunch.

The study was conducted during two simultaneous units of instruction created and taught by me, the teacher researcher. The subject matter was kept consistent in both science and social studies for individual student achievement analysis that would occur after the implementation of the nonverbal signal system. During the course of this study, the theme of the unit being taught in science revolved around the study of matter, and the

theme of the unit being taught in social studies revolved around the study of the southeast region of the United States.

After collecting pre-intervention data for four days for both subject areas and lunch line-up, I held a focus group with the entire class to get their perspective on student interruptions and transition time. I asked students to write their responses to multiple questions regarding student interruptions, transition time, and how both of these affect our classroom. Students were asked to share in writing how they felt student interruptions and transition time impacted the learning environment of our classroom. They were also asked to share how they felt student interruptions and transition time affected the actual amount of time we have to learn in science and social studies. Finally, students were asked to share how they felt student interruptions and transition time affected their own achievement in science and social studies—the two subjects in focus for this study.

Based on the pre-intervention data collected about classroom routines with regards to student interruptions, instructional time, and transition time, I implemented a nonverbal signal system as part of the classroom management plan so as to decrease student interruptions and minimize the effects of unavoidable interruptions. Because teachers should allow students to help make the classroom rules in order for the students to develop ownership of the rules (Gutloff, 1998), I worked with the students to create the signal system and its rules that would be implemented. We also set goals for the amount that it takes to transition quietly and quickly so that the students could something to strive for. We then practiced the system and once the system had been implemented, I again

collected data regarding the amount of instructional time, the frequency of student interruptions, and the length of transition time. I collected data for twelve consecutive days of social studies, twelve days consecutive days of science, and twelve consecutive days of lining up for lunch. Once data was collected, I held a focus group to conclude the study. I also examined individual student achievement by comparing student grades in science and social studies before and after the implementation of the nonverbal signal system. The data sources are discussed in full in the following section.

Data Sources

In this qualitative teacher research study, the frequency of student driven interruptions was recorded and calculated because most classroom interruptions are initiated by the students themselves (Erickson, 1980). In this study, classroom interruptions were defined as "any occurrence that distracted a teacher from teaching to attend to an unscheduled activity" for a period of 10 seconds or longer (Erickson, 1980, p.41). Most student interruptions lasted an average of 10 seconds. If an interruption was longer than 10 seconds, a note was made on the interruption tally sheet. The tally sheets were coded so as to note what type of interruption had occurred. This study attempted to minimize the effects of student interruptions by creating nonverbal signals for such simple yet numerous interruptions as bathroom trips, pencil sharpener trips, and water fountain trips as well as nonverbal signals for quieting down the students and questions or concerns because the effects of interruptions can be minimized depending upon how the teacher reacts to these interruptions (Erickson, 1980). Therefore, a code for each type of interruption was determined prior to the recording of data so that during the analysis

stage of the study, the teacher researcher could categorize the interruptions occurring and determine the most common and least common student interruptions. Codes included: BR for a student asking to go to the bathroom; P for a student asking to sharpen a pencil; Q for a student asking a question; C for a student making a comment or remark; A for a student answering a question directed by the teacher to the class; D for a student asking to get a drink in the hallway; and CO for a student calling out. I also took note of students who were frequently calling out by recording their initials then later giving them pseudonyms.

In conjunction with calculating the frequency of student interruptions, the following concepts of instructional time were examined and measured to help determine whether or not a nonverbal signal system as part of a classroom management plan lessens transition time and minimizes the effects of classroom interruptions that take students away from being engaged. The first concept of instructional time, *transition time*, was measured using a stopwatch in order to calculate how long a transition took between classes after an attention signal was given by the teacher. The time would stop once all students were quiet and ready to begin. An attention signal is the most critical component of a classroom management plan (Sprick, 1998, p. 61) so as to bring order and quiet to the classroom quickly. The second concept of instructional time is *engaged time*, or attention, was measured indirectly by the teacher researcher. The methods for doing so will be discussed in the next section on data analysis.

I also recorded reflections of the study and school day in my research journal and collected written student responses from the pre-intervention and post-intervention focus groups. I also compared individual student achievement by examining each student's grades in science and social studies before and after the implementation of the nonverbal signal system. In this nonverbal signal system, the teacher used nonverbal signals so as to address the students' needs quickly and quietly with minimal interruption to class time and to the momentum of a lesson. How this data will be analyzed is explained fully in the following section.

Data Analysis

In order to determine whether or not a nonverbal signal system as part of a classroom management plan lessens transition time and minimizes the effects of classroom interruptions that take students away from being engaged or on task, I calculated the frequency of student interruptions before the system was implemented. I also calculated the total number of minutes of instructional time, or engaged time, lost due to the students' interruptions and the length of transitions between classes as the students switch classrooms for each subject area.

I first calculated the amount of engaged time lost due to student interruptions by tabulating the number of basic student interruptions and multiplying by 10 seconds—the average length of a student interruption—and adding in any lengthier interruptions as noted on the tally sheet. Next I calculated the amount of class time lost during transitions between classes. I recorded the amount of time it took students to switch

between classes and to quiet down before instruction could begin. I took that total and subtracted three minutes—the amount of time given between classes for transitioning. I would then add the two amounts together—the amount of engaged time lost from student interruptions and the amount of engaged time lost from transitioning and quieting down. I would subtract the total amount of engaged time lost from forty-five minutes—the length of a class period—to calculate the total number of engaged time in minutes. From there I could calculate the percent of engaged time for each subject area on a daily basis and the percent of engaged time wasted due to student interruptions and lengthy transition time. After calculating the amount of engaged time for each subject area on a daily basis, I calculated the average amount of engaged time for each subject area.

Once these pre-intervention statistics were tabulated, a whole class focus group was held to discuss student interruptions and transition time and have students share their perspectives on these concepts. During this focus group, students were also shown how much engaged time was wasted in both science and social studies on a daily basis according to my pre-intervention data. From this data, we decided upon a goal for transition time so that they would have a goal to work toward. We also set a goal for the number of student interruptions in hopes that the nonverbal signal system would cut down on these interruptions.

Once the nonverbal signal system was selected and implemented, the same types of data were collected and analyzed in order to determine whether or not student interruptions decreased and engaged time increased due to lessened transition time and

fewer minutes wasted because of student interruptions. I held another whole class focus group to conclude the study. We discussed whether or not we reached our classroom goals for student interruptions and transition time, and I had students share in writing whether or not they noticed a difference in the classroom and learning time and their own achievement since the nonverbal signal system had been implemented. Lastly, I compared individual student achievement by examining each student's grades in science and social studies before and after the implementation of the nonverbal signal system to see if there was any improvement in achievement due to the anticipated increase in instructional time and sustainment of momentum.

Limitations

There are multiple compromises and limitations to this qualitative teacher research study. Such teacher research is very time consuming and is something that had to be fit into my busy schedule as a clinical teacher and student in the Master's of Science in Teaching program. An additional limitation is that a novice teacher and researcher (me) conducted this teacher research study. Furthermore, this teacher research is specific to its research setting. Therefore, the outcome of this study cannot necessarily be applied to other classrooms. The data is valid with the understanding that it was collected in an uncontrolled, naturalistic setting—a real classroom. A typical classroom has many interruptions each day, and every day is different than the last. The data collected and the nonverbal signal system that was implemented are valid during this period of study and with this specific classroom of fourth grade students.

Looking Ahead

Chapter four presents an analysis and discussion of the data collected from teacher research journal and student focus group responses. Chapter five concludes with the findings and implications of this study as well as how these findings support the original questions and possible recommendations for future studies.

CHAPTER IV

Data Analysis and Findings

Introduction

Chapter four examines the data collected throughout this qualitative teacher research study. A number of different approaches were utilized in order to obtain this data. Multiple modes of data collection were used in order to ensure accuracy, as well as to check for triangulation. For this study, five data collection instruments were utilized: tallying charts used while teaching to record the number of interruptions and to note the type of interruptions, timed transitions between classes recorded by a stopwatch, a teacher research journal, written student responses to whole class focus groups discussing students interruptions and transitioning and their effects on the classroom before and after the nonverbal signal system was implemented, and student grades for two instructional units. The study attempted to explore what would happen when a nonverbal signal system is put in place as a component of the classroom management plan. In addition, the study attempted to explore whether using nonverbal signals minimizes the effect of student interruptions, decreases student interruptions, and helps to increase the quantity of instructional time. Finally, the study hoped to determine whether student performance improves with this anticipated increase in instructional time.

Noise, Noise, and More Noise

When I started to collect data for this action research, I had been with this homeroom of students since September. I knew that there was a severe need for nonverbal signals in this classroom in order to combat the noise. These fourth grade students were the inspiration of this action research. Noise stemmed from student interruptions during class. Noise emanated in the hallways between classes. Noise exploded in the classroom while the students attempted to line up quickly and quietly—neither of which, quickly or quietly, did the students achieve while lining up. Students were not able to quickly and quietly line up even for lunch, their favorite time of the day. Noise was preventing everyone from getting the maximum amount of time for their lunch, teachers and students alike. An entry from my teacher research journal espouses just some of the frustrations that I was experiencing on a daily basis before I began my pre-intervention data collection.

> *The noise is maddening! To be very honest, I have been giving up on the students quieting down before they could leave the room. I attempt to get them to quiet down in line and say that we won't leave until it is quiet, but we spend what seems like forever trying to get everyone to quiet down, and the goal is never achieved. I can't keep them too long. The other teachers will be annoyed that they are late to class. There are always the same few students who are quiet. Then there are always the same few students who attempt to quiet others, thus making more noise. I try to tell them to check their own behavior, but I understand why they attempt to quiet others. They can tell how frustrated I am with the noise because they are too. And finally, there are always the same bunch of students who just don't know how to be quiet. It is as if they never had to get into a line quickly and quietly before. Yet they are in fourth grade!* (Teacher Research Journal, April 1, 2010)

The teachers and I were at our wits end with the noise. This homeroom and the two other fourth grade homerooms all had the same problem—uncontrollable noise. Students were unable to focus on their own behavior long enough that everyone could quiet down in a timely manner. Most either ignored the teachers' pleas for quiet or were trying to take the role of teacher by telling others to quiet down—and generally not in such nice terms. On top of the issues regarding lining up, the students in my homeroom were always interrupting the momentum of lessons and my train of thought with unimportant events such as needing to go to the bathroom, needing to get a drink, or needing to sharpen their pencil.

After I tallied the interruptions in my pre-intervention data, I was in shock by the sheer number of interruptions that I experienced on a daily in both social studies and science. On one day alone in science early in the study, I was interrupted twenty-six times for various reasons: students asking to use the bathroom; students asking to get a drink; students asking to sharpen their pencil; and two particular students who were calling out. A forty-five minute period with that many interruptions is down to forty and half minutes. After subtracting how long it took students to transition from the social studies classroom to the science classroom then quiet down, the period is now down to thirty-six minutes and fifty seconds. About 20% of the science period was lost due to student interruptions not to mention the aggravation I felt being interrupted twenty-six times; that is about one interruption every two minutes. Momentum had little chance of even getting started, let alone sustained in such an environment.

Days like this existed in both science and social studies before the implementation of the nonverbal signal system. On average, about three minutes of each science period was lost to student interruptions and four minutes and nineteen seconds were lost due to lengthy transitions. With these losses, an average of 16% of each science period was lost due to student interruptions and noise. As for social studies, on average, about two and a half minutes of each period was lost to student interruptions and four minutes and fifty-two seconds were lost due to lengthy transitions. With these losses, an average of 15% of each social studies period was lost due to student interruptions and noise. Additionally, an average of three minutes and twenty-five seconds of lunchtime was lost for both teacher researcher and students each day, which is about 7% of the forty-five minutes allotted for lunch. From researching interruptions, I knew the importance of maximizing instructional time and sustaining momentum while teaching (Gutloff 1998), but after reading the students focus group responses, students did not grasp how disruptive student interruptions truly were to our classroom. The results of the pre-intervention focus group and summaries of the student written responses to student interruptions are discussed in the following section.

Focus Group and Student Responses

Even while leading the focus group, the classroom was incredibly noisy. I allowed some noise because it stemmed from excitement. They were thrilled to be able to create the nonverbal signals and vote on which signals to use for our system. However, before the creation of the signals, I wanted to get their opinion on noise in the classroom and in particular, student interruptions. It got a bit too loud at points so I told

them if they weren't able to quiet down during this process then they would not be able to vote on what signals to choose for our system; I would choose. They did quiet down and quietly answered the questions I posted on the Smart Board screen. I posed to students the following questions: *How do you feel about students interruptions? Do you feel students interruptions impact our classroom? Do you think that student interruptions affect the amount of learning time we have each day? Do you think that student interruptions affect your own achievement?*

From their responses, most students found noise and student interruptions to be "annoying," but most did not fully comprehend the effect these had on our classroom environment nor their effect of the amount of learning time lost. George Jones hit the nail on the head, however, writing,

> *"I feel that we could get more things done if people didn't interrupt. When people are focused and somebody interrupts us, it wastes time and makes people less focused"* (George Jones, Student Written Responses April 9, 2010).

Only one other student specifically mentioned (in fourth grade terms, of course) how student interruptions affected momentum in our social studies and science lessons. Eric Rogers shared his frustrations with student interruptions:

> *I feel that sometimes student interruptions are very annoying. Like when we get to start our lesson and something comes up. Or when we're on a good roll and somebody goes, "Can I get a drink?" Come on!* (Eric Rogers, Student Written Responses, April 9, 2010)

Some understood that student interruptions decreased the amount of instructional time that we had for social studies and science. One student, Amy Adams, wrote of her desire for students to stop interrupting:

> *People are trying to learn then someone raises their hand and asks a silly question that is unnecessary. The people that interrupt should stop because they're interrupting the whole class and the teacher from doing what they were already doing, and it makes them lose the place of what they were doing* (Amy Adams, Student Written Responses April 9, 2010).

Amy also wrote of her frustration with noise when it came to lining up quickly and quietly. She was the only student to mention noise in these terms.

> *Student interruptions affect our learning time because we have to wait about five minutes just to get into a classroom or to go to lunch, and we are always late for a class because of the talking and interruptions* (Abigail Adams, Student Written Responses, April 9, 2010).

Only a handful of students had any inkling as to how student interruptions could affect their own achievement. For example, Mary Washington wrote, "[Student interruptions] affect our achievements by not letting us work longer or learn more things" (Mary Washington, Student Written Responses, April 9, 2010). Twenty-five of the twenty-six students wrote how "annoying" student interruptions were in one way or another. One student, Jeffery Thomas, however, shared a difference of opinion. "I don't really care about student interruptions unless we are doing something like a test. [They] really don't affect my learning" (Jeffery Thomas, Student Written Responses, April 9, 2010). It is interesting to note that this particular student was not "annoyed" by students interruptions like the rest of the students expressed in their written responses. As I will discuss in a later section, Jeffery Thomas was one of the few students who always took his time and held up the other students by never quickly or quietly entering a line. Overall, what I discovered from the focus group was that students were aware of student interruptions, but most were not aware of the large impact student interruptions had on our classroom in terms of the quantity of instructional time and sustaining momentum.

The Nonverbal Signal System

According to the research I presented in chapter two, principles, rules, and procedures are necessary for instruction to continue without major disruptions (Rademacher and Callahan, 1998). The guiding principle of this classroom management plan involving nonverbal signals was the following: "In a well-managed classroom, there is very little wasted time, confusion, or disruption" (Wong, 2004). The entire nonverbal signal system is based on the idea of maximizing instructional time and minimizing the impact of student interruptions if not eliminating unnecessary student interruptions completely. With these guiding principles, I was able to create rules for the system. Students must follow the rules in order fulfill the guiding principle's requirements (Wong, 2004). The rules for this nonverbal signal system were very simple and to the point and were based upon the needs of our classroom and the classroom management plan's guiding principles. The nonverbal signal system's rules that were presented to the students included the following:

> *1. DO NOT come up to the teacher or call out her name to ask a question. You must be in your seat raising your hand with the appropriate signal if you need something unless, of course, it is an emergency.*
> *2. When signaled to line up, do so as quickly, quietly, and carefully as possible.*
> *3. Check yourself! Check your own behavior and worry about what YOU should be doing and no one else!*
> *4. When someone else is talking, keep your hands down even if you are using a signal unless it is an emergency.*

As presented in chapter two, teachers should formulate classroom procedures upon established rules (Rademacher and Callahan, 1998, p.2); all of which revolve around the guiding principles of the system. Classroom procedures are a part of a

classroom management plan, which is not a discipline plan, but a set of procedures and routines for accomplishing things in the classroom (Wong, 2004). Procedures, which are defined as specific activities aimed at accomplishing something related to the rule at hand (Rademacher and Callahan, 1998, p.3), came in the form of nonverbal signals. The nonverbal signal system helped to structure the classroom so that students knew how things worked in the classroom (Wong, 2004), thus resulting in fewer student interruptions. The results of implementing the nonverbal signal system will be discussed in a later section. First, a discussion of how signals were selected for the system will be presented.

Once the students had completed their written responses, the second portion of the focus group began—learning the American Sign Language Alphabet, albeit briefly, and selecting the signals for our nonverbal system. The students could not wait to choose the nonverbal signals for our system. The students had been excited about using nonverbal signals ever since the permission letter for this study went home and had been returned. Students kept asking me when we would be learning the American Sign Language Alphabet so we could start using nonverbal signals. They were thrilled to be helping me with my college 'project'. I showed the students the American Sign Language Alphabet and gave each student a handout with the alphabet so they could refer to it later. I did not expect students to become experts on the American Sign Language Alphabet. I merely wanted to expose them to the alphabet so that they could choose letters from the alphabet to represent some of the needs in our nonverbal signal system. I had students brainstorm as a class the student interruptions that occurred on a daily basis so that we could choose

appropriate signals for each. After brainstorming a rather lengthy list, as a class we went through each item and decided whether or not the interruption occurred frequently enough that we should create a nonverbal signal for it. Then students nominated nonverbal signals for the following classroom needs based upon our brainstorming session: needing to use the bathroom, needing to get a drink, needing to sharpen a pencil, needing to go to speech class, needing to go to instrument lessons, needing to go to the nurse, wanting to make a comment during discussion, wanting to give an answer, being unprepared for class and needing to return to homeroom to get some materials, and needing to go to their cubby or the trashcan in the back of the classroom. I was impressed with the number of student interruptions that they picked up on and commented on the focus group in my teacher research journal.

> *I never would have thought to create a signal for needing to go to instrument lessons or needing to go to speech class, but in retrospect, I should have. Students interrupted lessons quite frequently to ask to go to instrument lessons or to speech and with the selection of a nonverbal signal, now they wouldn't have to!* (Teacher Research Journal, April 9, 2010)

After nominating signals for each interruption, the students voted on what signal they preferred for each. It was great to see that most of the nominations were for letters in the American Sign Language Alphabet to represent their needs. Some also nominated gestures for different needs. We voted for each need one at a time. I counted how many votes there were for each option, and I allowed majority to rule. However, there were two instances where I needed to veto the vote (something I had taught them about in social studies) because I believed a different signal would be more effective. I liked having the students make selections so they could gain ownership of the signals, but in

these few instances, I felt it was necessary to put in my feedback and use veto power. For example, students had voted for a gesture for needing to get a drink. The gesture depicted them holding an invisible cup and taking a drink from it. Though creative and certainly to the point, I decided to veto the gesture and select the letter D for needing a drink, which was the other option when students voted. I thought it would be more effective and less intrusive if the students merely held up a letter. If I didn't see them performing the gesture the first time, they would have to continue to perform the gesture, which may distract others. Instead they would be able to raise their hand up nice and high so that I could more easily see what they needed. A similar situation occurred when I vetoed a gesture for needing to go to the nurse. Students wanted to feign ill in order to represent needing to go to the nurse. Again, though it is creative, it may very well be distracting to others, and may not be as effective in gaining my attention. Therefore, I vetoed the gesture and chose the runner-up, the letter N.

The following are the nonverbal signals that the students and I selected for our nonverbal signal system. The nonverbal signal for needing to use the bathroom was the same as the American Sign Language symbol. Students held the letter T from American Sign Language in the air and twisted their wrist left and right. Students used the letter D to represent needing to get a drink. Students would hold up their pencil if they needed to sharpen it. Students would hold up the letter S if they needed to go to speech class and the letter L if they needed to go to instrument lessons. Students held up the letter N if they needed to go to the nurse. If students were unprepared for class and needed to return to homeroom to get some materials, they held up the letter U. If students needed to go to

their cubby or the trashcan in the back of the classroom, they used the letter G. Most of the signals and their needs corresponded such as using the letter D for drink. However, students chose the letter G for traveling to their cubby or the trashcan because when the hand is forming the letter G in American Sign Language, it looks as though you are pointing to something. Therefore, students would point to which place they needed to go, the trashcan or their cubby, while forming the letter G. To grant permission to fulfill these needs, I would give the students a thumbs-up. If I didn't feel it was the proper time to fulfill a need then I would give the students a thumbs-down. During a discussion students would hold up the letter C if they had a comment to make and the letter A if they wanted to give an answer to a question posed by the teacher. Finally, if students wanted to ask a question, they would give a regular five-fingered hand raise.

According to Sprick (1998, p. 61), an attention signal is the most critical component of a classroom management plan and should be used to bring order and quiet to the classroom quickly (Gutloff, 1998). Therefore, as a class we decided upon the most appropriate nonverbal signal for bringing the class to order. Students decided upon the toot of a whistle blown by me the teacher. They thought it would be most convenient as it was attached to the timer I was using and was loud enough for all to hear. As Randi Stone (2005, p.23) recommends, the students and I set goals for our nonverbal signal system so that they could have something to strive for. The students selected a line-up time goal of exactly one minute. They also chose to decrease student interruptions to only three *verbal* student interruptions per class period.

Students Pick up and Use Nonverbal Signals in the Blink of an Eye

Their excitement was visible during this portion of the focus group when students started using the newly selected signals during our selection process. It was a great feeling to see the signals already in use after only a few moments since their selection, and they appeared to be effective even at the very beginning. In my journal I noted how quickly the students learned these signals and used them, and it was I who had to get used to the signals during the first few days of the system's implementation.

> *The students picked up the signals right away and started using them immediately! I can't believe how fast they learned these signals. There are quite a few of them! I am the one having trouble remembering what means what. I've had to refer to the "What Do You Need?" class poster where the signals are posted more than the students!* (Teacher Research Journal, April 12, 2010)

The nonverbal signal system had a positive effect on our classroom environment. The following sections discuss in the specific ways in which the nonverbal signal system impacted our classroom.

Interruption of Momentum vs. Loss of Time in Regards to Student Interruptions

Nonverbal signals used during class for needing to use the bathroom, needing to get a drink, needing to sharpen a pencil, etc. were very effective because I no longer had to call on the student, ask what they wanted, wait for a response, then give an answer. I could just give them a simple yes or no without disturbing the others while they were working quietly, or if I was in the middle of teaching, the interruption was less intrusive because, again, I already knew what it was the student needed and could respond quickly and quietly. With this nonverbal communication, I could fulfill student needs without

being distracted from what I had been doing or thrown off-track. The impact of the nonverbal signal system was more successful in terms of sustaining momentum than recouping instructional time that had been lost due to student interruptions. This is because students were still in need. They still needed to use the bathroom, get a drink, and sharpen their pencil as often as they had before the implementation of the nonverbal signal system, but instead of having to ask verbally and receive a verbal response, which could interrupt the entire class's momentum and concentration, all of this communication could be completed without uttering a single word. Thus, this nonverbal signal system cut down on the unnecessary noise in the classroom, making the classroom run more smoothly.

For example, after the implementation of the nonverbal signal system, only about fifty seconds of each social studies period was lost due to student interruptions and one minute and nine seconds were lost due to transitioning, coming to only 4% of each period lost on average. As for science, about one minute and twenty seconds was lost each science period due to student interruptions and one minute and eleven seconds was lost due to transitioning, coming to only 6% of each period lost on average. Additionally, the amount of lunchtime lost since the implementation of the system decreased to one minute and fifteen seconds on average, coming to only 3% of lunchtime being lost. The amount of instructional time increased on average by 12% in social studies and by 9% in science by implementing the nonverbal signal system. In addition to increased instructional time, my classroom was finally running smoothly because of the sustained momentum gained by the system. I was no longer bombarded with a ton of questions at the very beginning

of class nor was I interrupted every two minutes throughout class. Though students had needs, their needs could be fulfilled with very little disruption to others. The only verbal interruptions that occurred stemmed from two students in particular who called out despite teacher intervention, which will be discussed later. These students as well as the others, though, were using the nonverbal signals successfully to fulfill their basic classroom needs. With the rules and procedures of the nonverbal signal system, the students knew that they needed to be seated and quietly raising their signal in order for me to respond to their need.

Furthermore, with the use of the nonverbal signal system, students appeared to think more about why they were raising their hand and what they were going to ask or comment on because they had to use a specific signal. Off-topic comments and questions seemed to decrease, which was an indirect and unexpected result of the study that helped to cut down on unnecessary interruptions. I noted in my teacher research journal that the two 'story-tellers' in our class, Bill Johnson and Elizabeth Ford, were telling less stories than they normally would have. Though their stories were generally enjoyable to all, they had the tendency to take the class away from what we were discussing. Now that these students had to classify what they wanted to share with the class, they appeared to choose what stories they were going to tell more carefully, thus making them more relevant to the discussion at hand. I also noted in my teacher research journal that students appeared to be listening more intently to those who were talking instead of waving their hand madly while the other person was talking. They were following rule

number four that stated if someone is talking then all hands should be down unless in the case of an emergency.

> *I noticed during our discussion today in social studies about prejudice that students would put their hands in the air then put them down when someone else was called on. I am glad to see they are following the rules. It is a pet peeve of mine when students do not listen to who is speaking because they are too busy waving their hand around trying to gain the teacher's attention especially when it is I—the teacher—who is speaking!* (Teacher Research Journal, April 15, 2010).

As mentioned previously, there were two students in particular who continued verbally interrupting the classroom. In addition to the nonverbal signals that everyone in the class used, I chose to use signals for these students, Phillip Moore and Frank Brown. Because I had worked with these students since September, I knew before my study began that they were frequent interrupters. I had setup behavior modification plans for both of these students in January to help combat their interruptions and to improve their behavior. However, I felt something else needed to be done and decided to incorporate changes in these behavior modification plans into the nonverbal signal system. I made a code for each student so that I would know how frequently they were interrupting the class's momentum when I collected data on student interruptions.

I noted in my teacher research journal that the other students and I were tired of hearing me saying their names so as to get them back on track. One student, George Young, even commented in his written response on Frank's inability to remain quiet during class: "Why does Frank always have to talk all the time?" (George Young, Student Written Response, April 9, 2010). I decided to speak with these students in private about having their own signals the day of the focus group. One student chose the

letter representing their first name and the other student chose a letter representing their last name. Neither of these symbols overlapped with symbols the entire class was using. If I held their personal sign up, it was a reminder to stop calling out and to get back on task. I noted in my teacher research journal that I liked these personal signals a lot. "It's nice not having to say their names all the time! Because [before the implementation of these personal signals] I felt like I was saying their names every second of the school day!" (Teacher Research Journal, April 20, 2010) Though these students were still interrupting, my response to their interruption was less distracting to other students because it was a nonverbal reminder to get back on task or to stop calling out. Nonverbal signals used during class were effective in various ways; however, the use of a nonverbal signal to line students up quickly and quietly was not as effective as projected. The results of recording the amount of time it took for students to line-up between classes and before lunch is discussed in the following section.

Lining Up Quickly and Quietly While Checking Their Own Behavior

The nonverbal signal for lining up quickly and quietly used in this study was not as effective as the researcher intended. The students had selected one minute as their goal for lining up for classes and for lunch. After a two days of lining up unsuccessfully in terms of how long it took students to get in line and quiet down, I decided verbally remind students how much time was left. Though they had set a goal of one minute, they were unable to keep track of the minute on their own. Many students resorted to asking me how much time was left instead of focusing on lining up quietly. Therefore, I decided to call out the time remaining every ten to fifteen seconds. Though there were only three

occasions where they reached their minute goal, they came close within 10 seconds of their goal most days of the study once I started announcing how much time was left.

Using verbal reminders in conjunction with a class goal may be necessary and more effective than a solitary, nonverbal signal such as the toot of a whistle to have students line up quickly and quietly. As this study shows, setting goals is imperative for having students line up quickly and quietly. However, as this study suggests, reminding students how much time they have left before their time is up may be necessary. Perhaps as an alternative to calling out the time remaining, I could write the time remaining on the board, making the reminder nonverbal and forcing students to rely more on themselves to keep track of the time remaining. Frank Brown, suggested in his written response to the closing focus group questions that next time I should record the students' time for each class then at the end of the day show them the results and discuss whether or not they made we made our goal.

Setting a class goal and reminding students of the goal enticed students to line up more quickly and quietly. Nevertheless, for some students no matter how many reminders they receive, achieving a class goal just doesn't seem to matter to them—or at least it appeared that way. Each time I recorded how long it took for students to line up for social studies, science, and lunch, I wrote the names of students who missed the minute goal. There were three 'repeat offenders' who always seemed to make the rest of the class miss their goal. These students were Michelle Evans, John Fitzpatrick, and Jeffery Thomas. After reading the concluding focus group responses and looking at my teacher research journal, I concluded that Michelle and John genuinely cared about

making the class goal of one minute, but were just simply unable to pack up so quickly. Each time they missed the goal of a minute, they looked disappointed in themselves for not making the goal yet again. Additionally, both wrote similarly of timing students to line up in their written responses. Michelle wrote, "I did not like the idea of a timer. I did not like it because people need time to pack up. It also caused a lot of yelling and screaming to line up."

Michelle is right. There were students calling to others to hurry up, which would result in me asking them to stop badgering the others and to check their own behavior—something that these students still needed to improve upon even at the very end of the study. Some students were just so concerned with the behavior of others that they in turn were not doing what they were supposed to be doing. However, I can understand the students' frustration with the remaining repeat offender, Jeffery Thomas, who was discussed in an earlier section. He just didn't seem to care about making the goal. He purposely dragged his feet. He would be all packed up for his next class, but would make sure to walk as slowly as possible to the line so as to make the class miss their goal. Since day one of the school year, he has had issues with other students. He just doesn't seem to respect others, including teachers and staff members. Based on various incidents that occurred through the year involving various members of the school community, I implemented a behavior modification plan for him in January to work on his disrespectful behavior. Generally, he does not realize how he is acting, but in the case of lining up, he knew very well what he was doing, and so did the other students, which is why they were so frustrated with him. And to be honest, I was too.

Pulling It All Together

When I implemented a nonverbal signal system as a component of my classroom management plan, I observed positive results. Verbal student interruptions decreased and the effects of student interruptions that occurred were minimized by the nonverbal signals. The majority of students lined up more quickly and quietly on a daily basis with the use of a nonverbal signal and verbal reminders of the class's goal. Additionally, nonverbal signals for individual students benefited the class as a whole by minimizing the amount of times I had to say individual student names to remedy behavior issues. One thing I am not so sure of is whether or not this nonverbal signal system impacted student achievement, which is something I had hoped to be able to determine. There are no definitive results after looking at individual performance within each unit of study. This may very well be due to the time constraints of the study as well as the work graded within each unit. Work given each day was not necessarily given a grade. If this study were completed during a math unit, perhaps daily quizzes could be given covering the same skills, thus making a comparison of an individual student's grades before and after the implementation of the nonverbal signal system more conclusive. However, with the nature of these social studies and science units, this is something that did not occur during this study.

Up Next

In this chapter, I presented the results of my qualitative teacher research study. I narrated the story of the implementation of a nonverbal signal system and its effectiveness in my student teaching classroom. I presented the nonverbal signal

system's effectiveness in terms of student interruptions, transition time, and student achievement. In chapter five, I present a summary of the findings, conclusions, and implications and suggestions for future research.

CHAPTER V

Conclusion and Implications

Introduction

The first part of chapter five summarizes the findings and conclusions from this qualitative teacher research study and discusses how these findings support the original question: "*What happens when a nonverbal signal system is put in place as a component of the classroom management plan?*" The important themes explored in chapter four will be brought together and final conclusions from the study will be discussed. The second half of this chapter deals with the implications of this study and suggestions for further research, what I would change if I were to do this study again, and closing thoughts on the process that is action research.

What I Learned

As a result of this action research, I would certainly create and implement a nonverbal signal system as part of my classroom management plan with my future students as per the advice of my students in their written responses from the concluding focus group. Most students wrote that they enjoyed using the nonverbal signals and that the nonverbal signal system helped our classroom a lot by making it "quieter." Most agreed that there were fewer interruptions during class time. Michelle Evans wrote

about why she liked the nonverbal signal system. "I think that is was helpful. It's helpful because there is no noise and no one will interrupt the lesson" (Michelle Evans, Student Written Responses, April 30, 2010). Anthony Tyler "loved" the nonverbal signal system because "it was less noisy and you can concentrate on your work. Plus you don't have to talk at all" (Anthony Tyler, Student Written Responses, April 30, 2010). In addition, most students agreed that timing them when lining up made them move more quickly. Hillary Clark discussed the timing of lining up in her written response, "When we used the time to line up, it was a personal challenge for each of us to line up in less than a minute" (Hillary Clark, Student Written Responses, April 30, 2010). In addition, though not mentioned in the student written responses, nonverbal signals for individual students can benefit the class as a whole by minimizing the amount of times a teacher says individual student names for behavior issues. When a nonverbal signal system is put in place as a component of the classroom management plan, a number of positive events occur.

As this study shows, nonverbal signals decrease student interruptions and transition time, thus increasing the quantity of instructional time, and more importantly, nonverbal signals minimize the effect of student interruptions that occur, thus sustaining momentum while teaching. What isn't as conclusive is the effect of a nonverbal signal system on individual student performance due to the increased amount of interrupted instructional time as suggested by the research presented in chapter two. However, this may be due to the limitations and time constraints of the study. These limitations and implications for further research are discussed in the following section.

Implications for Further Research

I believe that this action research study was unique and started to fill the gap in nonverbal classroom management. The time of the study should be extended in further research to have a more accurate view of the nonverbal signal system's effectiveness in combating noise and student interruptions. The amount of time for implementation and data collection was very limited due to the time constraints of student teaching. With additional time and perhaps a more skill-based subject such as mathematics, more convincing conclusions may be drawn in regards to the positive correlation between student achievement and quantity of uninterrupted, instructional time discussed in the research. However, seeing the positive outcome and success of this action research in terms of increased instructional time and sustained momentum should encourage other action researchers to try this out with their students and make nonverbal signal systems that work for their classrooms' needs in order to test this hypothesis over a longer period of time.

Secondly, it would be interesting to see whether or not having a self-contained elementary classroom setting where students have all major subjects in one classroom with one teacher has an impact on the nonverbal signal system's effectiveness. This nonverbal signal system was implemented in a setting where students switched classrooms and worked with multiple subject area teachers throughout the day. Even though I followed these students between classrooms for this study and was the main

person teaching them, I believe being in two different classrooms had a slight negative effect on the system. Moreover, this nonverbal signal system should be implemented throughout an entire school day, not just in social studies and science, to make it a more effective tool, which was not possible during this study. I feel implementing the system throughout the entire school day would have a major impact on the nonverbal signal system's effectiveness because students would be using it all day long without much interruption or time between usage.

What I Would Change for Next Time

I feel the nonverbal signal system would have been more effective if I had been able to complete my study during the fall semester and implement it at that time, which would have been the beginning of the school year for the students. Implementing the nonverbal signal system from the first days of school would allow that nonverbal signal system to become more easily ingrained. In addition, I would not have had to combat bad habits that had been at work for the majority of the school year. Therefore, when I implement this nonverbal signal system into my future classroom, the implementation will begin the first day of school so that students can make it routine to use the signals throughout the day. Additionally, the nonverbal signal system would not used for only two of the subject areas, it would be implemented and used throughout the entire school day, which would make the system more effective due to its more frequent and interrupted usage.

If I were to do this study again, I would want a research assistant to help tally and classify the interruptions and to time transitions. It was a difficult task juggling teaching and answering student requests using the signals with collecting data regarding interruptions. I wonder if asking a few student volunteers to act as research assistants and help collect data would be a good idea. To ensure that students were tallying correctly and accurately, I would have a few students collect data at the same time. I could then compare their data, and if their totals and types of interruptions were close in number, then their data would be determined as reliable. However, having students collect data may take them away from what they are learning, which would be detrimental.

Closing Thoughts

After researching classroom management and implementing a nonverbal signal system into my cooperating teacher's classroom, I feel competent as an action researcher. I am confident that I could create and perform additional action research studies in the future to improve my teaching practice and be successful in doing so. I am pleased to have learned the process of creating and implementing a teacher research study while student teaching. Now as I enter the teaching profession, I have the skills and tools I need to complete a successful action research study in my own classroom. Additionally, with this action research study, I have become more confident in my classroom management skills and believe that with a few modifications to how and when I implement the nonverbal signal system, it will be a very effective way to combat the ever-present, and now avoidable, noise in the classroom.

REFERENCES

Anderson, L. (1979). Dimensions in classroom management derived from recent research. *Texas Univ. Austin, Research and Development Center for Teacher Education*, 3-36.

Anderson, L., Evertson, C., & Brophy, J. (1979). An experimental study of effective teaching in first-grade reading groups. *Elementary School Journal*, 79, 193-223.

Anderson, L. (1976). An Empirical Investigation of Individual Differences in Time to Learn. *Journal of Educational Psychology*, 68 (April), 224-33.

Arlin, M. and Roth, G. (1978). Pupils' Use of Time While Reading Comics and Books. *American Educational Research Journal*, 15 (Spring), 201-16.

Arlin, M. (1979). Teacher Transition Can Disrupt Time Flow in Classrooms. *American Educational Research Journal*, 16 (Winter), 42-56.

Berliner, D.C. (1985). The clinical educational psychologist: Scientist and practitioner. J.R. Bergan (Ed.), *School psychology in contemporary society* (pp.328-43). Columbus, OH: C.E. Merrill.

Berliner, D.C. (1990). What's All the Fuss About Instructional Time? *The Nature of time in Schools Theoretical Concepts, Practitioner Perceptions*. Arizona State University.

Brophy, J., & Evertson, C. Learning from teaching! A developmental perspective. Boston, Mass.: Allyn and Bacon, Inc., 1976.

Brophy, J., & Putnam, J. (1979). Classroom management in the elementary grades: A literature review. In D. Duke (Ed.), *Classroom management, seventy-eighth yearbook of the national society for the study of education.* Chicago, Illinois: University of Chicago Press.

Cochran-Smith, M. & Lytle, S. L. (2009). *Inquiry as Stance: Practitioner Research for the Next Generation.* New York, New York: Teachers College Press.

Cruickshank, D.R., & Haefele, D. (2001). Good Teachers, plural. *Educational Leadership*, 58 (5), 26-30.

Curwin, R. L., & Mendler, A. (1997). "Discipline with dignity": Beyond obedience. *Education Digest, 63(4),* 11-15.

Erickson, G., Hawkhead, K. & Moody, P. (1980). Dealing with Classroom Distractions. *The Elementary School Journal*, Vol. 81, No. 1 (Sep., 1980), pp. 40-45. The University of Chicago Press.

Gutloff, K. (1998, September). "Start smart!" *NEA Today,* pp. 4-5.

Hubbard, R. S. & Power, B. M. (1999). *Living the Questions: A Guide for Teacher-Researchers*. Portland, Maine: Stenhouse Publishers.

Konza, D. (2001). *Classroom Management: A Survival Guide.* Social Science Press: Australia.

Orlich, D., Harder, R., Callahan, R. Trevisan, M., Brown, A. (2007). *Teaching Strategies: A Guide to Effective Instruction.* Boston, Mass.: Cengage Learning.

Partin, (2009). *The Classroom Teacher's Survival Guide: Practical Strategies, Management Techniques, and Reproducibles for New and Experienced Teachers.* Center for Applied Research in Education.

Rademacher, J.A., & Callahan, K. (1998). How does your classroom measure up? *Intervention in School & Clinic, 33(5),* 284-290.

Rosenshine, B., & Berliner, D. Academic engaged time (1978). *British Journal of Teacher Education*, 4, 3-16.

Sprick, R., Garrison, M., & Howard, L. (1998). CHAMPs: A proactive and positive approach to classroom management. Longmont, CO: Sopris West.

Stone, R. (2005) *Best Classroom Management Practices for Reaching All Learners: What Award-Winning Classroom Teachers Do.*

Stronge, J., Tucker, P., & Hindman, J. (2004). *Handbook for Qualities of Effective Teachers.* Alexandria, VA: Association for Supervision and Curriculum Development.

Thompson, J. (1973). *Beyond Words: Nonverbal Communication in the Classroom.* Citation Press: New York.

Thorndike, E.L. (1913). *Educational Psychology: The Psychology of Learning* (vol. 2). New York: Teachers College.

Wiley, D., & Harnischfeger (1974). A. Explosion of a myth; Quantity of schooling and exposure to instruction, major educational vehicles. *Educational Researcher*, 3, 7-12.

Wong, H. (2004). *First Days of School: How to be an Effective Teacher.* Harry K. Wong Publications.