Fall 2016

Examining Teacher Practices Related to Student-to-Student Discourse in the Middle School Classroom

April Dawn Craft
Western Kentucky University, april.craft@allen.kyschools.us

EXAMINING TEACHER PRACTICES RELATED TO STUDENT-TO-STUDENT DISCOURSE IN THE MIDDLE SCHOOL CLASSROOM

A Dissertation Presented to
The Faculty of the Educational Leadership Doctoral Program
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Doctor of Education

By
April Craft

December 2016

EXAMINING TEACHER PRACTICES RELATED TO STUDENT-TO-STUDENT DISCOURSE IN A MIDDLE SCHOOL CLASSROOM

Date Recommended 10-14-2016

Tony Norman, Director of Dissertation

Pamela Petty

Barbara Burch

11/14/16

Dean, The Graduate School Date

This dissertation is dedicated to my mother, Shelia, for always believing in me, instilling in me a "be the best you possibly can" attitude, and encouraging my love for learning. I will be forever grateful. Thank you for teaching me what it means to love unconditionally. The person I am today is a reflection of your example of hard work, unselfishness, and love for others.

ACKNOWLEDGMENTS

There are so many people who have encouraged, inspired, and supported me throughout this journey; I appreciate each of you.

Specifically, I would like to thank....

Dr. Tony Norman, your outstanding guidance and leadership was just what I needed to make this dream a reality.

Dr. Pam Petty, your positive, timely feedback was instrumental in helping me persevere through this experience. I will always appreciate your willingness to meet me where I was and your ability to push me to make my situation the best it could be.

Dr. Barbara Burch, I appreciate all of your support and dedication. The wealth of your knowledge and experiences inspire me to continue to be a lifelong learner.

Mr. Rick Fisher, your example of what it means to lead others is aspiring. As a young teacher, you fostered my confidence and gave me opportunities to grow, both personally and professionally. Thank you for seeing potential in me before I had the courage to see it in myself.

My former students, I have learned so much from you. Each year of my teaching career has been an inspiration for me to become better in my practice. I have enjoyed watching my students grow, learn, and achieve their dreams. Each of them makes me proud!

Finally, I would like to thank Jason. Thank you for inspiring me to challenge the status quo. This dream would not have been possible without your continued love and support. I am amazed by you.

CONTENTS

EXAMINING TEACHER PRACTICES RELATED TO STUDENT-TO-STUDENT DISCOURSE IN THE MIDDLE SCHOOL CLASSROOM

April Craft December 2016 82 Pages

Directed by: Tony Norman, Barbara Burch, and Pamela Petty

Educational Leadership Doctoral Program Western Kentucky University

As schools strive to develop 21st century learners equipped with skills in critical thinking and communication, the use of research-based teaching strategies, such as student-to-student discourse, is a necessary component of highly effective instruction. Research has shown that the way in which a teacher facilitates discourse in the classroom has a powerful impact on student learning and achievement. This case study examines the beliefs and instructional practices of a middle grades science teacher as they pertain to the use of student-to-student discourse, or students' use of a set of common language patterns in order to construct meaning or to develop understanding by communicating with other students in the same educational setting. The teacher participant of the study is a member of the SKyTeach teacher preparation program at Western Kentucky University and serves as mentor teacher for students currently participating in the program. As such, the teacher was trained to incorporate student-to-student discourse in her daily instruction. The purpose of this case study is to identify the beliefs of the teacher participant regarding the use of student-to-student discourse, to describe the strategies used to implement student-to-student discourse, and to describe the teacher's facilitation learning during student-to-student discourse.

CHAPTER I: INTRODUCTION

Statement of the Problem

As schools strive to meet the needs of the 21st century learners who occupy their classrooms, the use of student talk, or classroom discourse, plays an important role in developing critical thinkers who can collaborate and communicate with others effectively. The link between oral language and learning begins in early childhood when children are provided ample opportunities to develop a rich vocabulary through listening and speaking. As children gain experiences with oral language, it becomes the eventual foundation for developing future academic literacy skills, such as reading and writing. For this reason, classroom discourse has become an integral component of teaching and learning. In Danielson's (2007) *Enhancing Professional Practice: A Framework for Teaching*, she stated, "a teacher's skill in leading discussions makes a powerful contribution to student learning and is valuable for many instructional purposes" (p. 79). Additionally, the Common Core Standards (Common Core Standards Initiative, 2010) include specifications for speaking and listening as an element of the English/Language Arts standards beginning as early as kindergarten.

Teachers' use of appropriate academic discourse during instruction appears crucial for students to learn at high levels. However, Fisher and Frey (2011) suggested that students also must use academic discourse with their peers in order to obtain meaning. Engaging in academic discourse with the teacher alone is insufficient for students to master its use. Teachers must provide authentic opportunities for students to engage in meaningful discussions during instruction in order for them to synthesize the content they are learning. Yet, a large scale study by Pianta, Belsky, Houts, and Morrison's (2007) of

elementary classrooms found that nearly all (91%) of the instructional minutes were devoted to whole-class instruction or individual work time, rather than providing opportunities to work in collaborative groups to solve problems. This finding exemplifies the need for student-to-student discourse to be included as a fundamental instructional practice in classrooms across grade levels and disciplines.

In order to ensure that teachers incorporate speaking and listening (student-to-student discourse) in their language arts curriculum, the Common Core Standards Initiative (CCS, 2010), includes standards for speaking and listening. Also, CCS require teachers of students in grades 6 through 12 to supplement their content instruction in history/social studies, science, and technical subjects with content-specific literacy instruction that includes speaking and listening. Teachers are expected to use their content expertise to guide students' literacy development through reading, writing, speaking, listening, and other language tasks specific to the disciplines they teach. Students are expected to engage in collaborative discussions about a variety of topics on their grade level in multiple disciplines. The inclusion of these standards attempts to ensure that students develop skills in reading, writing, speaking, and listening that are foundational for the creative and purposeful expression of language across multiple disciplines.

Regardless of the pedagogic approach they employ in the classroom, teachers' beliefs and their classroom discourse behaviors have implications on the teaching and learning that occurs in the classroom (Malamah-Thomas, 1987). Classrooms are unique from most other social institutions in that their sole purpose of learning is achieved through the use of communication (Cazden, 2001). The social context of the classroom

creates a unique pattern of interactions or discourse behaviors that are based on the way in which the teacher and students use language. The language or talk that occurs in a classroom serves as a concrete representation of the learning that is occurring, as such, teachers are required to procure skills in both initiating and facilitating student-to-student discourse. While classroom discourse has several purposes, including building rapport, maintaining a positive classroom atmosphere, and carrying out organizational tasks, the primary purpose of language in the classroom is pedagogical (Malamah-Thomas, 1987); and it can be used to enhance learning, to engage students, and to motivate them to explore new ideas.

Many researchers have studied the relationship between classroom discourse and learning, but the work of Cazden (2001) is considered foundational in the field of classroom discourse. In addition to identifying the patterns of communication that are prevalent in classrooms, Cazden also sought to explain the effect of those patterns on the equality, or lack thereof, of students' educational opportunities. Perhaps more important, Cazden examined that which the common patterns of discourse presumed about students and the outcomes that these common language experiences might encourage. Cazden found that, although educational standards have shifted from a focus on recalling knowledge to a more focused emphasis on strategies for learning, thinking, and doing, traditional classroom discourse patterns have remained the most common sequence of talk. The result of this continued dependence on traditional patterns, such as "teacher Initiation, student Response, teacher Evaluation" (IRE) (Cazden, 2001, p. 30), is a large discrepancy between the language skills students need to be successful in the modern workplace and the skills that schools promote and teach. Cazden also emphasized the

importance of teachers becoming "reflective practitioners" (p. 6) and understanding how and when specific patterns of discourse are appropriate to meet desired learning outcomes. In addition to implementing a variety of researched-based strategies, teachers have a responsibility to create classroom discourse conditions that are conducive for *all* students to develop both academic and linguistic competencies interdependently (Cazden, 2001). Without the intentional use of strategies inclusive to all learners, students whose home language experiences (or those acquired prior to schooling) are different from the mainstream are at an increased risk of missing language lessons that are integral to creating unique classroom cultures.

As communication is easiest with those who have the most in common, students who do not share common language or cultural experiences with teachers often are labeled as having weak language skills (Au, 1993); as a result, they become at-risk for academic achievement. Cazden (2001) suggested that the importance of using classroom discourse to improve schools comes not from substituting nontraditional for traditional lessons, but rather from teachers having a repertoire of lesson structures and teaching styles from which to draw, accompanied by an understanding of the structures and styles that are most appropriate to meet particular educational goals and objectives. Examining classroom discourse behaviors provides insight into the manner in which effective teachers use strategies to help students navigate rigorous learning tasks.

Purpose of the Study

The skillful use of classroom discourse as an instructional tool is a complex process and involves multiple insights in order to create a safe space for students to participate and engage. Danielson (2007) asserted that a distinguished teacher:

*poses uniformly high quality questions,

*allows adequate wait time for students to respond,

*allows students to formulate questions,

*has students assume considerable responsibility for the success of discussions,

*allows students to initiate topics and make unsolicited contributions, and

*allows students themselves to ensure that everyone is heard in the discussion. (p. 82)

In order for teachers to progress toward this level of competency in the classroom, a need exists to examine the beliefs and the instructional practices of highly qualified teachers as they pertain to the use of classroom discourse.

The analysis of a highly qualified teacher who had been trained to implement classroom discourse into the instruction was integral to this study. Therefore, the teacher participant selected had completed the SKyTeach program at Western Kentucky University (2014). The SKyTeach program is the only replica in the state of Kentucky of the highly successful UTeach program at the University of Texas at Austin. The program, largely supported by a grant from the National Science and Math Initiative (NMSI), recruits, prepares, and supports undergraduate students who plan to enter math and science education. The program is unique to teacher education in that it provides support and guidance by mentor and master teachers, provides students first-hand teaching preparation and co-teaching experiences upon entry into the program, and represents a collaborative effort between the schools of teacher education and several science and engineering departments to provide high quality instruction in both teacher preparation and in the content area that pre-service teachers desire to teach. According to its webpage

(https://www.wku.edu/skyteach/), the intent of SKyTeach is to develop outstanding teachers in order to improve math and science instruction in Kentucky. As an innovative alternative to the traditional track of teacher programs in math and science, SKyTeach's intent is to produce teachers who are highly qualified and equipped to readily use researched-based strategies during instruction.

Research Questions

This qualitative applied research study employs a case study approach to investigate the way in which a teacher uses student-to-student discourse during instruction in a middle school science classroom. The central research questions are:

1. What beliefs does a middle school teacher have about the use of student-to-student discourse as an instructional strategy?
2. What strategies does a middle school teacher employ during instruction to utilize student-to-student discourse?
3. How does a middle school teacher facilitate learning during student-to-student discourse?

General Methodology

The applied research questions addressed by this qualitative study serve to guide data collection using a case study approach. According to Patton (2002), qualitative research "facilitates [the] study of issues in depth and detail" (p. 14). This study focuses on the relationship between the beliefs and instructional practices of a middle school science teacher who uses student-to-student discourse (interaction) during instruction. In order to identify whether the underlying beliefs the teacher has influenced the instructional strategies selected for use in the classroom, a rich description of both the

teacher and the classroom is necessary. Case studies are dedicated to situations in which researchers intend to get as close as possible to whatever is occurring in the setting being studied.

Creswell (1998) identified the case study as one of the traditions of qualitative inquiry. They are appropriate when the setting being studied is individualized, and the purpose is to capture and understand differences among the participants, diversity in their experiences, and the way the setting is unique from others (Patton, 2002). The classroom naturally includes a mixture of individuals, each with their own culture and nuances, working together to achieve a common underlying goal. Additionally, case studies purport to holistically describe the depth, detail, and context of the subject being investigated. The purpose of this study is to examine the beliefs and instructional practices of a teacher who facilitates learning and responds to students both as a group and as individuals. These objectives align with the purposes of a case study.

Significance of the Study

Discourse is a fundamental component of teaching and learning in the classroom. Most studies in the field of classroom discourse focus on discourse analysis from a sociolinguistic perspective, the role of discourse in culturally responsive teaching, and the importance of teaching children how to engage in the discourse within the culture of power (Au, 1993; Cazden, 2001; Delpit, 1988; Gee, 2008; Heath, 1983). While each of these contributions and their implications are significant in the field of education, little is known about teachers' actual use of classroom discourse during instruction. According to J. J. Gumperz (1985), "the classroom experience plays an important role in determining

what is learned. This suggests a need for studies of schooling processes that can provide a better understanding of the role of language in educational achievement" (p. 51).

This study provides both practical and theoretical insight into a teacher's beliefs and the use of discourse in a middle school science classroom. Identifying the beliefs and instructional practices of the teacher participant in the study allows educational leaders and teachers to evaluate their own and others' practices in order to develop a deliberate plan to incorporate discourse for a variety of purposes within instruction, more specifically as a means of increasing learning in the middle school classroom. Additionally, this study suggests implications for teachers as they plan lessons that include the use of discourse for multiple purposes and meet the CCS for speaking and listening, as well as literacy standards in science. Theoretically, this study also has implications in the field of teaching and learning, as it provides insights into the value of using discourse in a variety of ways in the science classroom.

Limitations

As a qualitative study, the primary limitation of this investigation is the transferability of the findings to other classrooms. Qualitative research naturally is case-dependent and situational. As a component of the classroom culture, the discourse practices that occur within are unique to each situation and classroom. Also, classroom cultures are defined by a variety of factors that cannot be replicated easily. However, by examining the beliefs and practices of a teacher who is purposeful in the use of discourse, those who are seeking to investigate the value of the discourse within the classroom will be provided with an information-rich case study. As Patton (2002) pointed out, qualitative research is dedicated to creating an accurate representation of that which is

happening in the setting being studied. Another limitation to this study is the sample size. In this case, the researcher's intent was to examine the classroom culture and teacher's instructional practices during the use of student-to-student discourse. The purposeful selection of a middle school science teacher, who participated in the SKyTeach program and who implemented student-to-student discourse as a common classroom practice, supports the use of a single setting in order to fulfill the intent of the study.

Assumptions

This study is based on the following assumptions common to applied research:

1. Human and societal problems can be understood and solved with knowledge (Patton, 2002).
2. The researcher/observer's point of view emerged during the data collection.
3. The observed lessons were representative of the daily classroom culture.
4. The participant provided truthful responses to interview questions.

Summary

Beginning in early childhood, speaking and listening are important facets of literacy. From their earliest exposure to oral language, children begin to develop their vocabulary and a foundation for academic literacy skills, such as reading and writing. In the classroom setting, opportunities for speaking and listening to their peers, and not only the teacher, is an important component of the literacy curriculum. In addition to simply using research-based strategies, such as classroom discourse (student-to-student discourse) to deliver instruction, teachers also need to implement classroom discourse behaviors that promote student engagement and create learning conditions conducive to all. Studying the use of student-to-student discourse practices in the classroom setting

provides clues to gain a better understanding of the role of language in student achievement.

Organization of the Study

This study is composed of five chapters, including references and appendices. Chapter I introduces the study, provides the purpose and research questions, general methodology, significance, limitations, and underlying assumptions. Chapter II is a review of literature that outlines the theoretical framework and foundational research base of the study. Chapter III describes the methodology utilized in the study. Chapter IV provides a content-analysis of the collected data; and Chapter V discusses the findings, implications, and suggestions for future research.

CHAPTER II: REVIEW OF LITERATURE

Introduction

As described in Chapter I, classroom discourse plays a crucial role in teaching and learning. The implications of oral language on academic skills, such as reading and writing, are clear. In addition to engaging in rigorous academic discourse with teachers, students also need opportunities to participate in student-to-student discourse in order to learn at the highest levels. In order to ensure that student-to-student discourse is included as a regular component of classroom instruction, CCS (2010) incorporate standards for speaking and listening for students as early as kindergarten. With the implementation of CCS, teachers are expected to provide students with ample opportunities to express themselves creatively and purposefully across academic disciplines.

Malamah-Thomas (1987), Cazden (2001), and Danielson (2007) suggested that both teacher beliefs and classroom discourse behaviors play major roles in the teaching and learning that occurs in the classroom. In her foundational work related to classroom discourse, Cazden (2001) not only identified prevalent patterns of classroom communication, but also examined that which these patterns presumed about students and the outcomes they encouraged. Emphasizing the importance of teachers becoming "reflective practitioners" (p. 6), she argued that teachers also have a responsibility to create classroom discourse conditions that are conducive for *all* students to develop both academic and linguistic competencies interdependently.

Studying classroom discourse is multi-faceted and requires an examination of the way in which language is studied, the role language plays in student learning, the use of discourse in classrooms, and the barriers that prevent students from actively participating

in classroom discourse. In the following literature review, the historical framework of the sociolinguistic approach to studying classroom discourse is followed by an examination of the importance of including diverse learners through culturally responsive instruction. Next, the best practices in the use of classroom discourse and researched-based strategies currently in use by teachers are individually examined in order to describe the impact of effective use of classroom discourse on educational achievement. Last, the impact of CCS on the prevalence of speaking and listening as an instructional strategy is explored.

Sociolinguistics

Gee (2008), a scholar in the field of sociolinguistics, has argued extensively during his career that the study of language only can be appreciated when it is investigated within a social context, such as a home or a classroom. Within these social experiences we acquire the "Discourses" (p. 2), distinctive ways of participating in language events needed in order to make sense of the language and conversations that occur. Additionally, he suggested that the most transparent way in which to see how language and literacy work is to remove them from the forefront and to refocus the attention on society, culture, and values.

Hymes (1972), another notable sociolinguist, described the study of the function of language in the classroom as a special case. He suggested that, in order to understand the language that is occurring, one must begin by understanding the context in which it occurs. When individuals better understand the use of language within a context, they can we begin to change that which occurs. Hymes emphasized the need for participants, not simply outside observers, to identify the meanings of their context and the problems that lie therein, and implement ideas and information that can be useful to address them.

According to Malamah-Thomas (1987), a teacher with the knowledge of what to do and what to communicate to students is important; however, actually achieving true communication requires considerable practice and expertise. Teachers often convey rejection or acceptance unconsciously in the classroom using accustomed cues for gaining and giving attention. For this reason, classroom ethnography is a necessary part of analyzing discourse (Hymes, 1972). The importance of being aware of what is actually occurring in the classroom is a critical first step to studying classroom discourse.

J. C. Gumperz (1985) also examined literacy acquisition from a social perspective, specifically in context of the evolving role of schools. J. C. Gumperz argued that, while historically the role of schools was to acquire literacy (ability to read and write), the focus recently has shifted to the acquisition of literacy as a means of economic well-being. Rather than conducting additional studies describing occurrences in the classrooms, J. C. Gumperz suggested that a lack of studies exist that have better understanding of the ways in which language enters into the school environment, thus impacting the educational achievement of the students. "Schooled literacy" (J. C. Gumperz, 1985, p. 2), the product of classroom exchanges, learning groups, and evaluative procedures students experience in their everyday life in the classroom, should be studied as a function of that which is being communicated in an effort to determine how and by what mechanisms students are acquiring literacy skills. Additionally, teaching and learning must be treated as an interactive process that requires the active participation of both parties in order to convey information necessary for learning.

Cazden (2001) described the study of classroom discourse as “applied linguistics” (p. 3), or the study of a situated language used in one social setting. One purpose for

studying classroom discourse, according to Cazden, is that words (language) are evidence of learning, which typically is an abstract concept. In order to address the recent changes, the workplace and civil society now demand of students as they transition from P-12 education to college or career, teachers are required to assess students' learning of effective oral and written communication skills to ensure they are able to work with a variety of individuals from diverse backgrounds. This shift has driven a significant change in interaction in the classroom. The traditional classroom discourse format of initiation/response/evaluation (IRE), once the most common pattern across grade levels, gradually is being replaced by a nontraditional discussion format intended to stimulate higher-order thinking and improved communication skills with those from diverse backgrounds (Cazden, 2001).

The challenge faced by teachers with implementing this nontraditional approach is ensuring that *all* students have equal access to the classroom discourse. Students from diverse backgrounds often struggle with the language differences in their informal interactions with family and peers and the formal interactions that occur in the classroom. This struggle often results in students becoming "at risk." When the conventions of language serve as a barrier to student learning, teachers should be equipped with a range of lesson structures and teaching styles that are most appropriate for the situation and allow all students to successfully participate in classroom discourse. The inclusion of all learners during discourse is an essential practice in order to create a community of learners in which common knowledge develops extensively with the sharing of experiences (Cazden, 2001).

Culturally Responsive Instruction

While creating a community of learners who share common knowledge is an ideal learning environment for students, this condition in the classroom can be challenging for teachers to achieve and to maintain, particularly with diverse learners. Diverse learners are those students who differ from the dominant group in the classroom in their language, race, ethnicity, or social background (Neito & Bode, 2012). Several theories have been offered to explain the reason diverse students sometimes experience difficulty in the classroom, including the practice of subtractive schooling. Subtractive schooling, a concept identified and described by Valenzuela (1999), is instruction that seeks to separate or to fracture students' cultural and ethnic identities from the learning process in order to promote assimilation. Valenzuela suggested that schools create an attitude of disrespect for diverse students and, in doing so, prevent the teachers and staff from forming meaningful connections with students, resulting in mistrust that promotes students' vulnerability to academic failure. Understanding the impact of practices such as subtractive schooling on learning is crucial for diminishing resistance to instruction and promoting the success of diverse learners in mainstream classrooms.

While diverse students possess many intellectual abilities, often they go unnoticed in the classroom due to cultural differences (Gay, 2000). The key to overcoming these differences and to promoting student learning is demonstrating an ethic of care (Noddings, 2005). By engaging in culturally responsive teaching practices that demonstrate caring, teachers bridge the gap between the school and the students and construct a learning community that is conducive to all learners.

Au (1993) described culturally responsive teaching as instruction consistent with the values of students' individual cultures with the purpose of improving academic learning. Gay (2000) defined culturally responsive teaching as "using the cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant and effective for them" (p. 29). Using a culturally responsive approach validates, facilitates, liberates, and empowers diverse students in the classroom by integrating their cultural identity, individual abilities, and academic success (Gay, 2000). Therefore, teaching is most effective when teachers recognize the importance of their students' identities, cultures, prior experiences, and the community in which they live. In order for culturally responsive teaching to occur in the classroom, Delpit (2006) suggested that schools must address three particular areas. First, the amount of student talk in the classroom must outweigh the amount of teacher talk. Second, the primary method of instruction, worksheets and textbooks, must be replaced with materials that reflect experiences to which students can relate; and, finally, students whose language use may not be considered "standard" cannot be viewed as substandard. Each of these changes can occur with the appropriate implementation of student discourse during classroom instruction.

Classroom Discourse

Although teachers possessing a repertoire of strategies and a culturally responsive approach to instruction are important considerations within the study of classroom discourse, Cazden (2001) also suggested that attention must be paid to the specific features of classroom discourse that can be manipulated in order to increase the effectiveness of classroom talk. Speaking rights and listening responsibilities, teacher

questioning, and purposes of discourse are among these features. These features influence the individual who has access to equitable learning opportunities and indicate those who actually are participating in classroom discourse.

Speaking rights and responsibilities refer to the regulation of classroom discourse. In traditional classrooms the teacher regulates who, when, and how students talk. Kochman (1981) labeled this discourse style as "passive-receptive" (p. 23). Students from diverse backgrounds often struggle with this format because their communication style is participatory-interactive. This difference can lead to misunderstandings about the intent of a student's participation. Teachers must be careful not to reject students' communication styles, while at the same time create opportunities for students to experience situations of self-regulation, teacher selection, and other turn-taking strategies (Cazden, 2001). Equally important to speaking, listening habits also are critical to classroom discourse. Teachers are responsible for listening to students but, more important, for teaching students the way to listen to their peers (Cazden, 2001).

The manner in which teachers pose questions to their students is another feature of classroom discourse that has been examined in research. In her ethnography of two communities, Roadville and Trackton, Heath (1983) examined the manner in which the children in each community learned to talk through questioning. In Trackton, an African-American community, the most common type of question asked of preschoolers was analogy, questions that require a nonspecific comparison of two items. In Roadville, a Caucasian community, Heath found that children most often were asked questions in which the answer was already known by the questioner. Heath concluded that the students from Trackton experience difficulty because the diverse discourse style with

which they were accustomed at home varied drastically from that which they experienced at school. After working with Heath, teachers adjusted their curriculum to modify the manner of asking questions, and the results were profound. Variation in the frequency, placement, and type of questions teachers pose in the classroom is critical to both assist and to assess student learning appropriately (Cazden, 2001). The pace and sequence of questions also are significant factors that affect classroom discourse. Monitoring the characteristics of questions that occur during instruction is a vital piece of understanding discourse.

The established routines and classroom curriculum and assessment also influence classroom discourse. Effective teachers are in tune with their students (Au, 1993). This harmony involves knowing and understanding the rules that govern the classroom and the curriculum that is to be learned and assessed. How teachers balance the amount of discourse they spend on classroom management, curriculum, and assessment influences their effectiveness. Marzano (2003) identified classroom management and curriculum design as two of the teacher-level factors that enhance student achievement and increase school effectiveness. When teachers have routines and structures in place and students can predict the operation of the classroom, the discourse can be focused on curriculum and learning (Cazden, 2001). By using discourse to identify the specific type of knowledge that students are expected to acquire from their lessons, teachers become more effective (Marzano, 2003). In addition to discourse as a means of instruction, it is important for teachers to incorporate the discourse of testing. Discourse as a means of assessment is very different from that of learning. Students need to experience discourse for a variety of purposes, and teachers must balance their use of it accordingly (Cazden,

2001). While discourse is necessary to establish and maintain classroom management strategies as well as other purposes, the classroom curriculum (student learning) should be the focus of teacher and student talk.

Classroom Discourse Strategies

The use of classroom discourse to advance the understanding of the curriculum can assume forms. As such, the use of strategies to engage students in discourse also varies, depending upon the goal of the teacher and the needs of the students. Discourse can range from informal to formal, small to large group, and from conversation to giving a speech. Therefore, understanding classroom talk and the strategies used to engage students is essential to effective practice. While teachers often use questioning, modeling, and explaining to assist students in learning, dialogue is a necessary requirement for students to develop thinking skills (Tharp & Gallimore, 1991). In addition to developing thinking skills, discussion is helpful in improving social interactions, increasing student engagement, and promoting comprehension (Ganske & Jocius, 2013). Researching teachers' use of strategies to promote discussion in the classroom provides those who seek to learn with a place to begin. Often teachers replicate and modify these strategies in order to address the needs of the diverse learners in their classrooms.

One method of integrating dialogue in the classroom is the Instructional Conversation (IC). IC is a dialogue that occurs between a teacher and learners and provides the teacher with information to tailor the discussion to meet the needs of the learners. Goldenberg (1991) described the way IC compares to direct instruction and created a model that includes both the instructional and conversational elements of IC. Using the model, Goldenberg insisted that teachers can use this strategy to expand their

repertoire and to enhance student learning. He found that students who participate in a lesson about friendship using IC, as opposed to direct instruction, possess a more sophisticated understanding of the topic. Ganske and Jocius (2013) found that 3rd and 4th grade students are more engaged in word study activities when the teachers' explanation and elaborations are built on student talk. This type of interaction also encourages more student participation. While IC should not be a replacement for direct instruction in all cases, when used appropriately it can provide an alternative for teachers to increase student participation and to make conversations more meaningful.

Another strategy to incorporate discussion in classrooms is the use of a discussion web, which is a graphic organizer that allows students to examine both sides of an issue before they draw an inference/conclusion. According to Alvermann (1991), the purpose of the discussion web is to foster students' listening attitude, or openness to the ideas of others. This strategy is beneficial, as it provides all students with multiple opportunities to participate in classroom discourse with a partner, in small groups, and in whole class discussions. The discussion web incorporates the use of all four literacy components: reading, writing, speaking, and listening. This structured approach is founded on the principle that group discussions stimulate thinking and can provide students with a skill set that allows them to develop tolerance for points of view different from their own. The most valuable aspect of the discussion web may be the struggle with ideas that it creates for students and teachers.

Socratic seminar is another classroom discourse strategy. The Socratic seminar is a technique designed to engage students in discussion that develops ethics and promotes critical thinking. Teachers use this model to involve students in active learning and to

enhance their skill with intellectual discourse. Socratic seminars allow them to confront conflicts and to develop solutions, testing their ideas against those of their peers. As a result of participating in this type of active learning and cooperation, self-esteem often increases. Tredway (2011) also described Socratic seminars as a method of developing vocabulary, interpretative and comparative reading, text analysis, synthesis, and evaluation. Tanner and Casados (1998) described the benefits of using Socratic seminars in math class. In addition to the improvement of students' attitudes toward reading and mathematics, student participation in lessons also increases significantly. Socratic seminars are a method for teachers to provide students with opportunities to interact with both the teacher and their classmates in ways that require the student to use academic language and to think critically.

While classroom discourse is an important component of instruction across grade levels and disciplines, scientific argumentation is a form of classroom discourse (discussion) especially beneficial in science education. Different from general discussion, scientific argumentation requires students to investigate, consider, and synthesize empirical evidence in order to support or to refute existing hypotheses or theories. As a structure for discourse, argumentation calls on students to explain not only what they think, but also to provide evidence to justify their thinking. According to Shemwell and Furtak (2010), three essential properties of discussion must be met for scientific argumentation to occur. First, established claims and theories are based on evidence. Second, scientific argumentation in a social process that deals with differences in contested or contestable issues; and last, it has the purpose of building and refining generalizations. Learning science through argumentation develops students' reasoning

and problem-solving skills. Nevertheless, scientific argumentation has limitations. Shemwell and Furtak found that focusing scientific arguments around evidence inhibited conceptually rich talk (talk in which the speaker elaborates important concepts as well as casual relationships pertaining to scientific theories) in middle school students. However, when used to address specific educational goals, scientific argumentation can become a useful tool for science educators.

Speaking and Listening in Common Core Standards

Subsequent the release of CCS in 2010, speaking and listening have returned to the forefront as part of a comprehensive, balanced approach to literacy education. In the CSS for English/Language Arts, students are expected to arrive at discussions prepared, to interact with a wide range of individuals, and to build upon the ideas of others while expressing themselves clearly and persuasively (Fisher & Frey, 2014). While fewer in number than previous reforms, CCS aim to raise the rigor in American classrooms, provide students with opportunities to develop 21st century skills that benefit them as they enter the workforce, and move toward depth and understanding of content, rather than breadth and coverage. (Billings & Roberts, 2012; Larmer & Mergendoller, 2013; Neuman, 2012). Crucial to the implementation of the standards in the classroom is that teachers devote daily class time for students to engage in discussions and to use academic language. Fisher and Frey (2014) suggest as much as 50% of all content area instructional minutes should be used for student-to-student discourse (collaborative conversations with peers).

In order for collaborative peer discussions to have the greatest impact on student learning and meet CCS, teachers should combine the discussion with a challenging piece

of text, teach students effective presentation skills, and expect students to use elaboration. When student-to-student discourse is paired with a challenging text with which all students have engaged, they have the freedom to express their own thoughts and voice, often reaching a deeper level of understanding that is evident in their writing (Billings & Roberts, 2012). Another key component to meeting CCS is teaching students the way in which to make effective presentations. Larmer and Mergendoller (2013) emphasized that it is insufficient for teachers to simply make students explain their work or create media projects. In order to reach the level CCS for speaking and listening desire, teachers should discuss that which makes an effective presentation, create a rubric for effective presentations with the class, provide planning guides, and offer feedback during practice sessions in order for them to make revisions. In order to make the most of their learning, students must know how to follow and make sense of the information contained in a presentation, how to write and perform in a presentation, and how to use videographer techniques to create visually interesting and compelling presentations (Neuman, 2012). Finally, in order for collaborative discussions to meet CCS, elaboration of ideas is necessary. Barker (2015) described four tools that teachers can implement to encourage elaboration during discussions: use a common anchor text; provide structured, small group talks prior to large group discussions; model explicitly that which elaboration looks and sounds like; and facilitate talk moves that require students to respond directly to one another.

When speaking and listening CCS are being addressed by classroom teachers, the academic achievement of students, particularly those who are English language learners, is improved. Frey, Fisher, and Nelson (2013) found that academic achievement of

Hispanic/Latino students improved as a result of teachers' focused, collective efforts to increase the rigor of academic language across disciplines and grade levels. Additionally, they found that students' use of metacognitive language is essential in developing classroom language patterns necessary for learning. When student-to-student discourse is valued by teachers and students as tool for thinking and learning, students learn more about topics, comprehend more complex texts, and gain confidence in their oral presentation skills (Mercer & Dawes, 2010). In order for teachers to use the CCS to develop effective lessons promoting speaking and listening, they need to understand students' use of language to learn, believe in the power of spoken language, and provide time for their students to practice and to work collaboratively with their peers (Coultas, 2010). Regardless of the strategy or approach used to promote student-to-student discourse, the key to increasing academic achievement with speaking and listening hinges on the construct that students simply must be provided daily time in classrooms to talk (Fisher & Frey, 2014).

Summary

Classroom discourse is a phenomenon that impacts every learner and every educator. Therefore, understanding its role in the classroom setting is crucially important to improve education. Developing an understanding of classroom discourse is not possible without considering the work of sociolinguists such as Hymes (1972) and Cazden (2001). Their contributions allow other researchers and educators to describe the function of discourse in the classroom. From this theory, the integral nature of classroom discourse was established. Likewise, the proponents of culturally responsive instruction, such as Au (1993), Heath (1983), Gay (2000), and Delpit (1998, 2006), have emphasized

the need for educators to appreciate how, when, and why classroom discourse either creates or eliminates opportunities for all students to participate in learning equitably. This issue is complex, and each component is critical to ensuring that students receive the best educational experience possible. Educators have a responsibility to learn, grow, and reflect on their practices continually in order to become a more effective professional. This includes learning new techniques and strategies from the research community, other educators, and from students. As they continually monitor that which works and does not, educators must modify their practice in order to develop expertise and excellence to benefit all students.

CHAPTER III: METHODOLOGY

Overview

In order to examine the way in which a middle school science teacher utilized student-to-student discourse during her classroom instruction, a qualitative research design was implemented in this study. This chapter chronicles the research methodology and procedures for collecting data, to include the following sections: research questions, research design, procedures, data management and analysis, role of the researcher, and trustworthiness. For the remainder of the dissertation, the study participant who was the focus of this research is identified as the teacher participant.

Research Questions

This qualitative applied research study used a case study approach to investigate a teacher's utilization of student-to-student discourse during instruction in a middle school science classroom. The central research questions were:

1. What beliefs does a middle school teacher have about the use of student-to-student discourse as an instructional strategy?
2. What strategies does a middle school teacher employ during instruction to utilize student-to-student discourse?
3. How does a middle school teacher facilitate learning during student-to-student discourse?

Research Design

Case Study Methodology

One of the most distinct characteristics of a qualitative research design is the researcher's selection of the sample to be studied. In qualitative research case studies,

selecting a sample is both purposeful and intentional. According to Patton (2002), many strategies exist for selecting a sample, including intensity, typical case, and convenience sampling. In this study, extreme/deviant sampling was used, which is based on "learning from unusual manifestations of the phenomenon of interest" (p. 243); e.g., an exemplary teacher who exceeds the expectations of administrators and teacher educators (Patton, 2002).

Once a sample has been selected, the next step is to determine the method of data collection. Data collected during a case study are descriptive in nature, and can include interviews, ethnography, focus groups, and direct observation. As qualitative data are words rather than numbers, they generate longer data sets that are more detailed and more challenging to analyze (Patton, 2002). In order to obtain the most accurate depiction of the case study sample, the researcher in this study collected data from two sources, an open-ended interview and direct observation.

After data collection, the next stage is analysis and interpretation, which transforms the data into findings that synthesize patterns and themes (Patton, 2002). The nature of qualitative data (large amounts, detailed, and specific) often makes analysis more challenging. While no formula or specific method exists for analyzing qualitative data collected in case studies, the purpose of this method is to provide the most in-depth, accurate portrayal of the phenomenon, setting, or participant; therefore, the purpose determines the method of analysis. The analyses used in this qualitative research were confirmatory (whether the teacher's beliefs matched her behaviors) and criterion comparison (whether the teacher's behaviors matched the targeted behaviors on a pre-established reference).

The last step of qualitative research case studies is to organize the data for reporting purposes. Similar to the analysis step, no best way is available to report the findings of a case study; therefore, the researcher must allow the study to guide the way the findings are communicated. In order to make the vast amount of data that were collected both applicable and meaningful, the researcher gave heavy consideration to the setting in which the study was conducted. In Kentucky, in which the study was conducted, educators are evaluated using Kentucky's Framework for Teaching, which is based on Danielson's Framework for Teaching (2007). Additionally, educators are required to teach and to assess their students based on CCS. Considering that these structures were already in place, and are common to all public schools in Kentucky, the researcher used the criteria from each as a guide to report the findings of the study.

Setting

This study took place in a rural, county middle school in Southcentral Kentucky. The school population consisted of 625 seventh and eighth graders, 75% who identified as white/non-Hispanic students, while 25% identified as other minorities. Forty-four percent of the student body was eligible for the federal free and reduced lunch program. The teacher participant's instructional day consisted of seven periods: five science classes, one planning period, and one exploratory class described by the teacher as Crime Scene Investigations. The first six periods were 50 minutes in length. The exploratory class, held during seventh period, was 40 minutes. Class size ranged from 27 to 36 students. Two of the observed science classes included students with Individual Education Plans (IEPs); during those classes an exceptional education teacher was available for collaboration with the teacher participant. One class included a student with

a hearing impairment. An interpreter was present during that class.

The teacher's classroom was set up in a "typical" science lab arrangement. Around the back two walls were storage cabinets for science equipment. Included with the cabinets were five sink areas accessible for student use. On one side of the classroom, there was a demonstration table (cabinet) also equipped with a sink. Students primarily sat at tables, with a small number of desks available for supplemental seating as needed. The tables were grouped in threes in the center of the classroom space. The teacher's desk was positioned in the front of the room near the electronic white board that was used for projection, as well as a dry erase and bulletin board on the wall behind the demonstration board.

During class changes the teacher was positioned outside of the classroom door. Students entered, usually talking socially with their classmates, to find a daily agenda posted on the white board. Typically, the first item on the agenda was for students to fill out their planner for the day. The planned activity for each day of the week was written in the corner of the dry erase board. Some students carried out this procedure, while others moved around the room socializing with their classmates. When the teacher entered the room, the students moved to their seats without a verbal reminder from the teacher. Occasionally during the observation period, one or two students would receive a verbal reminder to find their seats. Next, the teacher would read orally the posted agenda for the day. During this time some students who had not already done so would write the daily activity in their student planner.

Many traditional methods of classroom management were observed. The teacher called students by name and provided directions to correct their behavior, changed her

proximity to be near students who were off task and/or disruptive, and raised her hand and waited for students to stop talking and to direct their attention to her. The students appeared at ease and were comfortable in the classroom. Many shared personal stories and anecdotes with the teacher, asked questions, and moved around the classroom freely. Students were observed acquiring and using classroom materials (iPads, art supplies, notebooks, teacher provided handouts, reference books, etc.) efficiently.

Participant

The participant for this study was a seventh-grade science teacher, who graduated from Western Kentucky University's (2014) SKyTeach program with a Bachelor of Science degree in Biology, Middle Grade Science, and Science and Math Education. The SKyTeach program offers a non-traditional path for math and science majors at the university level to dually obtain teacher certification while perusing a degree in the math or science discipline of their choice. The program allows students to obtain their Bachelor of Science degree while also exploring the possibility of a career in education within a traditional four-year timeline for completion. According to the SKyTeach website (www.wku.edu/skyteach/), the program is both "innovative and provides outstanding preparation for the next generation of Kentucky's math and science teachers." The program is unique from other teacher preparation programs offered in Kentucky for three primary reasons. First, the program requires graduates to complete 21 course hours in the Science and Math Education Department. These courses focus on inquiry-based learning, project-based learning, research methods, diversity within the classroom, and classroom interaction. Second, the SKyTeach program requires that students begin observing, designing, and implementing lessons in middle grades classrooms within their first

education course, using Master and mentor teachers to guide and to assist in lesson planning, implementation, and reflection throughout the process. Last, the SKyTeach program is designed for students to develop expertise in their content area by requiring them to take higher level courses in science resulting in a degree in their chosen content area (e.g., biology or chemistry), as well as education. Since the program began, more than 100 middle and secondary mathematics, chemistry, physics, biology, and earth/space science teachers have completed the SKyTeach program (www.wku.edu/skyteach/). The participant's background in SKyTeach is important to understand, as this is part of the criteria used to categorize this teacher as an "expert" and an appropriate participant for this case study.

The observation period was conducted during the teacher's second year of teaching experience. Subsequent to graduating from the university and beginning her teaching career, the teacher served as a mentor teacher for current SKyTeach students. The role of the mentor teacher includes modeling teaching strategies, assisting students with planning lessons, and co-teaching with the students in the classroom on a recurring basis. As a former participant in the SKyTeach program and through continued support for the program by serving as a mentor teacher, this teacher was expected to utilize the effective teaching strategies, taught as a component of the program, routinely in her classroom. Considering that the teacher was selected to be a mentor teacher for current SKyTeach participants, the researcher expected to observe a variety of teaching strategies, integral to the SKyTeach program, implemented on a recurring basis.

Instruments

Semi-structured interview. In a qualitative study such as this, interviewing was

a crucial component as it allowed the researcher to obtain information from the participant about the feelings, thoughts, and intentions that cannot be observed directly. In order to understand the way in which individuals organize their world and to what they attach meaning, asking questions is necessary. Those things cannot be observed (Slavin, 2007). The purpose of the semi-structured interview in this study was to learn about the perspective of the participant, so in order that the story can be told in a meaningful, knowledgeable, explicit way. The semi-structured interview questions can be found in Appendix A.

Field observation instrument. According to Slavin (2007), field notes are the most important data that can be collected during most types of observational research. Field notes should contain "a description of the key individuals being observed and the physical setting and other contextual features, a running record of what happened during the observation period, and the observer's comments on the meanings of particular events" (p. 132). In this study, the researcher recorded field notes using a field observation instrument template (Appendix B) on a laptop computer during each classroom observation.

Discourse observation protocol. The discourse observation protocol statements were based on Domains 2 and 3 of Danielson's Framework for Teaching (2007), The Classroom Environment and Instruction. The Likert-based survey ranged from 1, strongly agree, to 4, strongly disagree, and included a marker of 5 for not applicable. The ranking for each standard of evidence was based on the number of independent examples documented by the researcher during the course of one daily observation period. Behaviors that were repeated during multiple classes were counted as only one

independent example. The Discourse Observation Protocol is included in Appendix C.

Procedures

The data in this study were collected over an eight-week time frame during the fall semester of the 2014-2015 academic year. The use of multiple data sources "strengthens a study" (Patton, 2002, p. 247). Data triangulation is possible when a variety of data sources are used in a study. Therefore, the data sources for this study included a semi-structured, one-on-one interview with the teacher and 40 hours of non-participant classroom observations with documenting field notes. A description of each method of data collection follows.

Participant Selection Process

As observing the use of effective teaching strategies was crucial to the study, the teacher selected had participated in the SKyTeach program at Western Kentucky University. In order to identify potential participants, an interview with SKyTeach's co-director was conducted. During the interview she described the goals and mission of the SKyTeach program, described the common experiences of students enrolled in the program, and identified the characteristics she uses to define exceptional teachers who had been part of SKyTeach program. She emphasized the routine use of classroom discourse, inquiry-based learning strategies, and the 5E model for lesson development as imperative structures for the program's success. The co-director was asked to identify three successful teachers who had completed the program that she had observed that subscribed to the ideology and regularly used the strategies and techniques that were integral to the program. Additionally, she provided specific details about the strengths of each teacher and the way they exemplified the SKyTeach model classroom. Of the three

potential participants, two were teaching in a school district near the research university. Each was contacted via email to determine interest in participating in the study and to obtain permission to observe them in the classroom. During the observations, field notes were collected and used to document whether the characteristics described by the interviewee were present in the classroom. After initial observations were conducted, one of the potential participants shared their intention to change teaching positions (from middle grades to high school) for the following academic year. Therefore, the final participant was chosen based on the recommendation of the co-director, location at which she taught, her level of interest in participation, approval of both school and district leadership, and a preliminary observation conducted by the researcher to confirm the use of strategies identified by the co-director.

Data Collected Prior to Observation

A semi-structured interview with the participant was conducted prior to classroom observations in an attempt to elicit the teacher's understanding of student-to-student discourse and its value in her classroom. The interview was held in a neutral site that was convenient for the participant and was approximately 45 minutes in length. The purpose of the semi-structured interview was to provide the participant with an opportunity to describe student-to-student discourse as a component of her classroom. The questions were open-ended in nature to allowed the teacher to elaborate and share at length, yet specific to student-to-student discourse in order to maintain focus on the subject of the study. The semi-structured interview questions used for this study are included in Appendix A.

Classroom Observation and Coding Process

One day each week for eight weeks the teacher participant was observed teaching her seventh-grade science classes using a non-participant observation method for a total of 40 hours. At five-minute time intervals throughout the class period, the researcher documented the teacher's behavior using the field observation instrument (Appendix B). At the conclusion of each instructional day (five class periods), the researcher completed a discourse observation protocol assessment (Appendix C) to deduct the purposes of the teacher's discourse behaviors throughout the day.

Data Management and Analysis

A semi-structured interview (Appendix A) was administered to determine the beliefs of the participant. A content analysis was performed to determine the emerging themes from the responses to the interview questions; e.g., while responding to each question, the teacher participant included the use of student-to-student discourse as a means of assessment. In order to identify the types of strategies the teacher utilized during instruction with student-to-student discourse and the facilitation of learning, evidence of the participant's behaviors was collected during 40 hours of observation over the course of eight weeks using the field observation instrument (Appendix B) and the discourse observation protocol (Appendix C). The nature of the questions was to explore the number of, variations in, and the purposes of the discourse that occurred during classroom instruction. As a participant of the SKyTeach program and a mentor teacher for current students, the participant was expected to implement lessons based on the 5E model (engagement, exploration, explanation, elaboration, and evaluation) of lesson planning. An integral part of the SKyTeach teacher preparation program, the 5E model,

requires teachers to plan lessons that spark students' interest and lead to questions (engagement), explore concepts using hands-on/minds-on activities, generate explanations that require students to make connections and to justify their understanding, elaborate about application of the knowledge gained to daily life, and evaluate students' progress toward the lesson objective (throughout and at the end). It was expected that student-to-student discourse would be observed during each stage of a 5E lesson.

After documenting the teacher participant's behaviors in the field observation instrument during each class period, the discourse observation protocol was used to categorize the data according to the component of Danielson's (2007) Framework for Teaching that it best addressed. When the teacher participant inquired whether the student wearing his football jersey felt confident that the team would win its game that afternoon, the exchange was counted as evidence for the use of discourse for the purpose of building rapport, Danielson's component 2a: Creating an Environment of Respect and Rapport. At the end of each daily observation, the number of examples demonstrated for each standard on the Discourse Observation Protocol was tallied. The total number of documented independent (exchanges that were not repeated over the course of the daily observation) examples was used to determine the indicator that was marked on the Likert-based Discourse Observation Protocol. Five or more examples resulted in strongly agree, while three or four examples received an agree indication. If the data indicated two examples per day, the marker indication was disagree. Only one cited example over the course of the instructional day led to a strongly disagree indication. Not applicable was used only when the opportunity for that descriptor was not obvious as part of the instruction; e.g., during one observed lesson, the students were engaged in a peer

teaching activity. The purpose of the lesson was for students to share their learning with one another, so the teacher posing questions to students in a variety of ways was marked not applicable because it was not a component of the lesson. Utilizing the Discourse Observation Protocol to summarize the evidence from each day of observation allowed the themes/patterns of discourse use to emerge concretely and evidence-based.

The most appropriate method of data analysis for this study was the use of triangulation using researched-based practices, the teacher's beliefs, and the observed behaviors. As a teacher trained in the SKyTeach program, the participant was expected to implement lessons based on the 5E model that includes research-based strategies that promote classroom discourse. In this case, the researcher compared best practices in the use of classroom discourse, the results of the semi-structured interview, and the data collected during the observations to develop a theory about whether and how a teacher's beliefs might influence her discourse/classroom conversation behaviors. The theme of discourse for the purpose of assessment emerged during every question during the interview. As a result, the researcher expected to find substantial support in the data for the theory that student-to-student discourse would be used by the teacher participant for the purpose of assessment. Additionally, the researcher identified two domains of Danielson's (2007) Framework for Teaching (Domain 2: The Classroom Environment and Domain 3: Instruction), as areas of interest. Examining these research-based practices demonstrated the degree of awareness and implementation of the teacher participant about culturally responsive instruction, which is an essential part of increasing student achievement (Gay, 2000). During post observation analysis, the researcher studied the interview notes and the field notes and coded the frequency with which the evidence

appeared according to Domains 2 and 3 of Danielson's Framework for Teaching (2007).

Role of Researcher

The role of the researcher in this case study was that of a non-participant observer. While in some cases a participant observer would be advantageous in order to collect more insightful data, the researcher entered the setting as a non-participant primarily for two reasons. First, serving as a non-participant observer would allow the researcher to record the data more easily and without distraction. Second, acting as a non-participant reduced the risk that the students in the teacher's classroom would be affected by the researcher's presence.

Trustworthiness

One of the common criticisms of qualitative research is the issue of trustworthiness. The nature and defining characteristics of qualitative research methods and designs prevent studies from withstanding the traditional forms of scrutiny that typically occur. The purpose of using random sampling to reduce bias in quantitative studies is contradictory to the intentional, purposeful sampling associated with qualitative research. In order to establish trustworthiness within qualitative research studies, Shenton (2004) suggested researchers use a combination of strategies: triangulation, background qualifications and experiences of the investigator, and member checks.

Triangulation is the use of multiple methods or data to strengthen a study (Patton, 2002). In this study, the triangulation of multiple sources of data was used to obtain background information that may serve to explain the reason the teacher participant behaved in particular ways. Prior to any observations, the teacher was interviewed. The

information gleaned from this source helped the researcher to confirm and to verify patterns and themes that emerged from the data collected during the observation period.

Another method of establishing trustworthiness implemented in this study was member checks. According to Shenton (2004), member checks require the informants to review and to confirm the accuracy of the data at the time of collection. In the study, the teacher participant had a planning period in the middle of each instructional, observed day. During the teacher's planning period, the researcher would share the collected data with the teacher and ask her to confirm the contents. This review of the content also allowed the teacher participant to explain any unknown extenuating circumstances or request for the researcher to observe for the changes in classes later in the day.

Finally, trustworthiness was established by the researcher's background qualifications and experiences. This study focused on the behaviors of a middle school science teacher, and the researcher also is a middle school science teacher. Direct observation of one middle school science teacher by another is an important consideration for this study, as it minimized the effect of impact of using content specific equipment, discourse, and methods of instruction. As a science teacher, the researcher recognized the way in which the context of teaching via a lab experience was the most appropriate approach. Without the background knowledge of science teaching pedagogy, the researcher could have misconstrued and misinterpreted the findings of the data.

Summary

Chapter III described the research methodology and design implemented in this study to examine the beliefs and behaviors, related to student-to-student discourse, of a middle school science teacher. Given the need to understand and to investigate the role of

language in academic achievement, this study provides educators with an information-rich, in-depth case study illustrating research-based strategies that promote student-to-student discourse and, as a result, increase both student engagement and access to learning for all students.

CHAPTER IV: RESULTS

Introduction

This study examined the perspectives and instructional practices of a middle grades science teacher as she facilitated student-to-student discourse during her classroom instruction. After using the Danielson's Framework for Teaching (2007) to identify the targeted discourse behaviors teachers are expected to demonstrate in the classroom, the researcher collected data from a semi-structured interview and 40 hours of observation field notes in order to examine whether and how the teacher's reported beliefs influenced the discourse behaviors that were observed over the course of eight weeks of classroom instruction. This chapter is organized by the evidence collected for each of the research questions.

Teacher Beliefs

The first research question was: "What beliefs does a middle school teacher have about the use of student-to-student discourse as an instructional strategy?" To answer this question, the researcher conducted a semi-structured interview prior to any classroom observations. The interview occurred at a neutral location (outside of the teacher participant's classroom) and was approximately 45 minutes in length. The teacher was given a written copy of the interview questions (Appendix A) to use as a reference during the oral conversation. The researcher transcribed the responses using a laptop computer.

When the teacher was asked to describe the purpose of student-to-student discourse in her classroom, she responded that the primary purpose was to stimulate thinking by encouraging students to question one another.

I use student-to-student discourse most of the time in my classroom. To me a quiet classroom means my students are not thinking; they are just sitting there, being passive. They need to be able to ask questions of each other in order to stimulate each other's thinking, especially during cooperative group work, hands-on activities, and labs. They can usually help each other learn the vocabulary and content without much interference from me.

The next question of the interview attempted to elicit that which the teacher desired from student-to-student discourse and the result of its use in the classroom. In response to that which she uses student-to-student discourse to discover, the teacher responded:

*Do they (my students) get it (targeted science content)?;

*Can they use science vocabulary terms appropriately; and

*How much background knowledge students have about a topic?

The teacher also discussed differences she had noticed between teaching a different grade level.

Last year, I taught eighth grade. This is my first year teaching seventh (grade). I have noticed there is a huge gap between what my students last year knew and what my current students know. When I use student-to-student discourse and let the kids talk to each other, it helps me realize those differences, and then I can set my expectations based on what I hear from their conversations. Seventh graders are very different from eighth graders, socially, emotionally, and academically. They have more misconceptions and gaps in understanding than I realized.

Another thing I have noticed is that where they attended elementary school has a huge impact on what they come to seventh grade knowing.

When the teacher participant was asked the way in which she uses what she finds out from student-to-student discourse, she emphasized the importance of student-to-student discourse as a guide for the rest of the lesson.

When I hear the students talking about their work with each other, I can tell if they are ready to move to the next part of the lesson, or if they need some re-teaching. It is easy to tell if they have misconceptions about the topic when they have to talk about it. It is very much a tool for informal formative assessment. With the students I have this year, there is a big difference in what they came to me knowing. Listening to them talk to each other lets me know what they need to learn without them realizing I'm assessing them. They are just talking to their friends, but I am listening to see what I need to go over more, or if they are ready to move on.

The next question in the interview pertained to the influence of student-to-student discourse on students and the classroom culture. Question 4 was: "How do you think students are affected by your use of student-to-student discourse in the classroom?"

I think letting the students talk to each other in my classroom is crucial for a good classroom culture. The kids have good rapport with each other and with me. Things are more generally more positive, and the students seem friendlier with me and each other. I think it helps the students feel more accomplished when they talk more during class. They think what they have

to say is important too. Also, their critical thinking skills have increased. They will try to figure stuff out without me. They have some good discussions, especially when they disagree about something.

One concern expressed by the teacher relative to with this question was a perceived "noticeable" difference between the types of discourse present in the more advanced classes, as opposed to classes that had a large percentage of students with disabilities. When asked to elaborate, the teacher explained:

> My fourth period class is advanced; they have substantial background knowledge and can have discussions that are rich in vocabulary. Also, they are able to add to each other's ideas. In my collaborative classes, where I have a high number of students with Individual Education Plans (IEPs), (in one class I have sixteen), I have to be intentional about when I use student-to-student discourse. They are more likely get off task, talking about other things, and lose focus on their assignment.

The researcher requested elaboration about that which the teacher thought the source of the difference could be between the two classes.

> In my collaborative classes, I have to spend a much larger portion of my instructional time monitoring and correcting unacceptable behaviors, rather than on learning science. This has definitely impacted the quality of student-to-student discourse in those classes. I find myself doing more explaining and redirecting students and less time talking about what they have learned. There is also more talk about procedures and following directions than in my other classes. While I have another teacher to help in those classes, I still feel like I have to deal with

most of the behavior issues, and still try to get the science in. It is also a struggle because I have very large classes (35 students) with those students, and I don't get to spend as much time talking and working with small groups of students.

The last question was: "How does student-to-student discourse make your classroom different from a classroom where student-to-student discourse is not used?" In response to this question, the participant identified several items that distinguish her classroom from others, including:

*students are allowed to bounce ideas off of others,

*the students are more well-rounded and comfortable asking questions,

*students are better equipped to give and to receive feedback from their peers,

*there is more "life" in the classroom, and

*students like the class because of the opportunities to engage in student-to-student discourse.

Strategy Utilization

To address the second research question pertaining to strategies the teacher participant used to promote student-to-student discourse, the researcher conducted a series of classroom observations. Over the course of the study, the teacher was observed using a variety of strategies to utilize student-to-student discourse as a means of instruction: cooperative learning, peer teaching, hands-on learning experiences/demonstrations, creating scientific literature (both lab reports and posters), and roundtable discussions. Many were used on multiple occasions and with a diverse population of student groups.

According to Marzano (2007), cooperative learning is a strategy that has a positive effect on overall learning and promotes the use of student-to-student discourse. During cooperative group work, small groups of students work together to accomplish a common goal of understanding information or completing a task. During this study, students were observed working together to solve problems multiple times. One example was an activity that required them to construct a protective container for a sugar cube. Students were placed in groups of four or five and provided with a different set of materials to use for construction. They discussed the "best" method and then worked collaboratively to build a container. After a short time, each container was tested to see how well they worked to protect the sugar cube. Students then discussed what made each container either a success or a failure. Students also worked collaboratively to solve "atomic math problems" using the number of protons, neutrons, and electrons in an atom. Often they were observed assisting one another and asking questions during class activities when the teacher was occupied. The routine nature and ease with which students worked and talked with partners during classroom activities was interpreted as evidence that the teacher had embedded student-to-student talk structures within the culture of the classroom.

Another strategy used to promote student-to-student discourse was peer teaching. During one observation, the students were peer teaching at lab stations. On day one of the activity, with groups composed of three or four students, they followed a protocol in order to conduct a hands-on demonstration of a principle of energy. On the next three consecutive days, the students took turns remaining at the station to fulfill the role of the teacher as the others rotated through the stations. Prior to being assigned roles, students

were given time with their group to plan their method to teach the concept. Students also had a fill-in-the-blank lab sheet, as well as a student-friendly script they could use for references during their turn as teacher. All were held accountable for learning the material, as they were not told when it would be their turn to teach until the day of the station (except on the last day). The students at each station also had a lab sheet to complete at each rotation, so they were also accountable for listening to their peers.

Hands-on lab experiences/demonstrations were another strategy the teacher used to create opportunities for student-to-student discourse. During one observation, the students followed a multi-step scientific protocol to demonstrate each of Newton's three laws of motion. Although part of the lesson included teacher-led discourse (key ideas about each law written in a foldable) and the use of short video clips to introduce each law, the bulk of the lesson provided time for students to work with a partner to show the way in which the laws work using manipulatives. Students used a paper clip, index card, and a cup to show that an object at rest stays at rest until acted on by an unbalanced force (gravity in this case). After each demonstration, the teacher brought the group back together to form conclusions and to answer questions pertaining to each law.

Students creating scientific literature in the form of lab reports and posters was another strategy implemented to promote student-to-student discourse. During one observed classroom activity, students were creating informative scientific posters about concepts related to energy. One group created a kinetic energy poster, while a different group focused on potential energy. Once the posters were created, each group presented their information orally using the poster as a reference. On another occasion, students were engaged in producing lab reports using the writing process. They read one another's

work and commented on the strengths and areas to be addressed. When writing protocols for conducting the lab, one student shared with his partner that his directions were vague and needed to be clearer. By having students create scientific literature, and then engage in student-to-student discourse using the work products to drive the discussion, they were able to implement multiple components of literacy (reading, writing, speaking, and viewing) interchangeably.

The last strategy used by the teacher participant to promote student-to-student discourse during the observations was roundtable discussions. Roundtable discussions typically were held at the end of class periods and invited student comments on topics of interest (usually not content related). The topics ranged from seasonal celebration questions to current events. Students were encouraged not only to express their own opinions or thoughts, but also to listen to others' perspectives. Students were allowed to ask follow-up questions or to add to another student's answer when they were finished. The use of this strategy ensured that they had the opportunity to participate in student-to-student discourse. The strategy also was helpful in building rapport between the teacher and students and among the student population.

Facilitating Student-to-Student Discourse

Facilitating student-to-student discourse effectively can be a difficult task, even for the most veteran of teachers. Evidence from the classroom observations also was used to answer the third research question: "How does the teacher facilitate learning during student-to-student discourse?" While modeling, practicing, and providing feedback about student-to-student discourse can be time consuming, discourse can be a powerful tool for motivating, engaging, and eliciting information from students. During this study, the

teacher facilitated student-to-student discourse in a variety of ways to include: posing probing questions, providing tools for scaffolding, accepting/encouraging multiple perspectives, monitoring students' participation and holding them accountable, asking for clarification or building on students' responses, and using discourse for a variety of purposes.

One of the idiosyncrasies of facilitating student-to-student discourse is timing, specifically the point at which to become involved by asking questions, as well as to listen to students talking among their peers. During the observation period, often the teacher circulated the room asking probing questions while students worked collaboratively to solve problems and to complete tasks. On one occasion, a student appeared to be dominating the conversation, so the teacher asked an open-ended follow-up question to other students in the group. Later, the teacher returned to check in with the group, and those students were expected to add to the conversation. The teacher was observed many times asking students, "How do you know that?" One observed example of this behavior occurred when students were designing a methodology for and collecting data about the strength of an electromagnet. The teacher posed the question, "What would happen if we changed more than variable at a time?" The students were unable to answer immediately, so they were given a hypothetical situation to consider and to discuss. When the teacher returned, the students shared the results of their conversation. Another strategy that was implemented multiple times by the teacher was to demonstrate active listening by repeating back to the students what an individual shared. The teacher often reminded students to stop talking and to listen when others were talking.

During one observation, the teacher posed a question about the amount of force required to accelerate two boxes with different masses. When the students had difficulty answering, the teacher rephrased the question using two students as the objects rather than boxes. After this reference, the students answered the question correctly. While most of the questions asked during the observed lessons were at the recall and application level of Bloom's taxonomy, the teacher showed flexibility in the way questions were asked. The evidence identified five types of questions the teacher relied heavily upon: "what, how, why, where, and if...then (hypothetical situations). During a lesson on atomic structure, nine of the 12 questions during the instructional sequence began as either "what" or "how" questions, but the teacher generally provided a follow-up question requiring students to justify their thinking or to relate their answer to some other concept. Within the instructional context, the teacher spent much more time asking questions of the students than providing facts/answers.

Another method used to facilitate student-to-student discourse was to provide students with tools for the purpose of scaffolding. This was accomplished by providing a student-friendly script for them during their peer teaching, having them create scientific posters to reference during oral presentations and providing fill-in-the blank lab sheets to complete to ensure they obtained all the necessary information for assessments.

Accepting/encouraging multiple perspectives was an additional means to facilitate student-to-student discourse in the classroom. First, peer conversation was present not during each observation, but also was an expected practice. Students were asked to share examples and experiences about the way science affected or was present in their life outside the classroom. During a lesson modeling the differences between a mixture and a

solution, after the teacher provided several "real-world examples" such as making homemade biscuits, draining spaghetti, and cleaning a fish tank, students were asked to share their own example. This not only gave the teacher insight about the student's understanding of the concept, but also gave them an opportunity to share their personal experiences with their peers. While they shared their experiences, the teacher was careful to replace misused words by repeating the student's response using the standard practices (or in some cases words were replaced with appropriate science terminology) and asking the student to verify whether the interpretation was accurate. For example, the teacher would say, "In science, we would call creamer a solute because it is dissolved in the coffee or the solution."

Monitoring students' participation and holding them accountable for their discourse behaviors also is an important component of student-to-student discourse. During the peer teaching observation in this study, each student in the group took a turn serving as the peer teacher for that station/activity. This ensured that each person was responsible for learning the content in order to share their information with their classmates. The teacher noted that every student in the group was responsible for learning the content of the lesson because each would be required to take a turn serving as the teacher for the assigned station. This strategy ensured accountability for learning the content and that all students would need to participate in the classroom discourse. The teacher commented during one class, "Yesterday I noticed some people taking over the lead, but everyone has to be the teacher sometime, so make sure all of you know what you are supposed to do." During other times when partners or small group work was expected, the teacher made sure all students had a partner/group with which to work. The

teacher also monitored student participation during roundtable discussions. Each student was required to share an idea, comment on a classmate's idea, or ask a clarifying question about one of their classmate's ideas. Ensuring that all students participate is necessary to create a classroom culture in which student-to-student discourse is prevalent.

Asking for clarification and building on students' responses is another technique used to facilitate student-to-student discourse. The teacher was observed on several occasions asking the class or groups of students if they agreed with or could add to another student's response. One example of this occurred during a lesson about mixture and solution. The teacher asked, "J (student) thinks this is an example of a solution. Is she correct? Why do you agree?" Roundtable discussions also were used to practice clarifying and building on other's ideas. Using discourse for a variety of purposes is important when facilitating student-to-student discourse. In this study, the teacher participant was observed using discourse for a variety of purposes, including building rapport, maintaining a positive classroom environment, classroom management or organizational tasks, and to convey rejection or acceptance.

In addition to the roundtable discussions, the teacher also built rapport with students by sharing her personal experiences, allowing students to share their experiences, and showing interest in the students' lives by asking questions. Students often were observed sharing and talking to the teacher without reservation. This indicated to the researcher that rapport between the teacher and students and with others was present in the classroom. Discourse for the purpose of maintaining a positive classroom environment also was used. Typically, the teacher called attention to students who were modeling the appropriate expectation in order to motivate others. On several occasions

the teacher said, "Thank you M, J, and A (a group of students). Make an observation and tell me what they are doing correctly." The teacher also encouraged students to persevere when tackling difficult tasks. "I see that some of you are getting frustrated. Relax, this is the first time we have done an activity like this, and I am not going to let you fail." Discourse was used to maintain a positive atmosphere with academic standards. The teacher said, "I have several people who have already completed their drawings. By now, the rest of you should have an idea about what happened during the demonstration." Overall, the atmosphere of the classroom was positive and supportive. Even during behavior corrections, the teacher's approach was encouraging and offered students an opportunity to change their behavior to avoid further corrective actions.

Discourse for the purpose of classroom management and carrying organizational tasks was observed on each visit. The teacher began every class by reading the agenda posted on the board and reminding students to record the daily activity in their planner. The teacher was explicit about directing students where to keep or turn in their work, the method to complete assignments correctly, and providing a timeline for work to be done. The teacher was observed distributing materials (iPads, lab materials, students' notebooks, worksheets) to students efficiently and used discourse to ensure they were meeting the established expectations. Based on the amount of classroom discourse spent on organizational strategies and classroom management, this appeared to be a priority for this teacher. Student-to-student discourse also was observed on each occasion as students provided assistance to their classmates while they carried out routine tasks.

Summary of Findings

The purpose of this study was to determine whether the beliefs of a middle school science teacher would influence the instructional practices that were implemented in the classroom. From the initial semi-structured interview, it was evident that the teacher participant valued student-to-student discourse as an instructional strategy in the classroom. She reported that she used student-to-student discourse as a means of increasing learning, building a positive classroom culture, and assessing her students' knowledge about science concepts. Using a case study approach, the researcher investigated the strategies used by the teacher to promote student-to-student discourse, the manner of facilitating learning during student-to-student discourse. After over 40 hours of classroom observation, the researcher found that the teacher used a variety of strategies to promote student-to-student discourse almost daily in her classroom. Additionally, the researcher described various methods used to facilitate the use of the student-to-student discourse to make it an effective tool for instruction. Based on the evidence collected and presented in this chapter, the teacher participant's beliefs about the use of student-to-student discourse in the classroom greatly influenced the instructional practices she implemented.

CHAPTER V: DISCUSSION

This chapter presents a summary of the purpose, the methodology, and the significant findings of this study. After the significant findings, missed opportunities for more effective teaching and learning and recommendations for improved practice are presented using the framework of the CCS. Limitations of the study and implications for future research also are discussed.

Summary of the Purpose of the Study

As the demand for highly-qualified, effective classroom teachers increases, a plan designed to help teachers develop and refine their professional prowess will be a necessary component of teacher education and licensing programs. According to the Center for Public Education (2016), an effective teacher is the single most important factor in learning. While many states like Kentucky (where this study was conducted) have identified the criteria necessary for a teacher to be considered highly-qualified, defining effectiveness has proved to be a more challenging undertaking. Traditional factors, such as years of experience and type of certification a teacher holds, have shown mixed results in student achievement (Center for Public Education, 2016). While they are important in the consideration of whether a teacher is highly-qualified, they do not necessarily correlate with teacher effectiveness. In order to identify that which makes a teacher effective, researchers should examine the beliefs and instructional practices of teachers in the classroom. This is an important first step that will provide understanding about making instructional decisions and carrying them out in the classroom setting. With this type of information available, educational leaders and administrators will be better

equipped to evaluate and to create opportunities for teachers to grow in their professionalism and practice, therefore, increasing their effectiveness.

In order for students to achieve at high levels on existing content standards, teachers must promote student learning using strategies that are have been shown to be effective across grade levels and subject matter. One such strategy is the use of student-to-student discourse. In this study, student-to-student discourse refers to students' use of a set of common language patterns in order to construct meaning or to develop understanding by communicating with other students in the same educational setting. The purpose of this case study was to investigate the beliefs and instructional practices of a middle grades science teacher as they pertain to the use of student-to-student discourse in the classroom.

Methodology

The research design implemented in this investigation was a case study. As such, the researcher attempted to capture the essence of an individual classroom and understand the teacher's use of student-to-student discourse effectively to make her classroom unique. This study addressed three research questions:

1. What beliefs does a middle school teacher have about the use of student-to-student discourse as an instructional strategy?
2. What strategies does a middle school teacher employ during instruction to utilize student-to-student discourse?
3. How does a middle school teacher facilitate learning during student-to-student discourse?

Data were recollected using a semi-structured interview and 40 hours of classroom

observations over the course of eight weeks. During the observations, the researcher collected field notes about the teacher's behaviors that were later organized using the Discourse Observation Protocol and Danielson's Framework for Teaching (2007). Danielson's Framework (2007) defined what teachers should know and be able to do in the classroom. This work synthesized both the theoretical research and empirical studies about effective teacher behaviors. Four areas of teacher effectiveness are discussed in detail: planning and preparation, the classroom environment, instruction, and professional responsibilities.

Discussion of Results

Research Question One: Teacher's Beliefs

To determine the beliefs of the teacher participant regarding the use of student-to-student discourse as an instructional strategy, the researcher conducted a semi-structured interview. During the interview, the teacher identified two themes for the use of student-to-student discourse in her classroom: formative assessment and building a positive classroom culture/relationships. Both "Using Assessment in Instruction" and "Creating an Environment of Respect and Rapport" are components of Danielson's Framework for Teaching (2007). During the 40 hours of classroom observation, the researcher attempted to confirm whether these two themes were prevalent in the teacher's classroom discourse behaviors.

According to Danielson (2007), as teachers design lessons, they should select and prepare specific techniques to elicit evidence of their students' learning. The four elements of "Using Assessment in Instruction" identified by Danielson (2007) include establishing assessment criteria, monitoring of student learning, feedback to students, and

use of student self-assessment and monitoring of progress. Of the four identified elements, only two were documented during the observation period: feedback to students and monitoring of student learning. On several occasions the researcher observed the teacher move among student groups to listen in on their student-to-student discourse. As she moved around the student groups, she asked questions to monitor students' understanding and provided them with feedback about ways to proceed in the activity. On two occasions the teacher was observed following an IRE (teacher initiates, student responds, teacher evaluates) pattern of classroom discourse with the purpose of monitoring student learning and providing feedback. During these occasions, the teacher would pose questions to the whole class, choose a student (with their hand raised) to respond, then affirm or deny their response. Typically, when a student answered incorrectly, the teacher would offer the question to another student and then provide a rationale for the correct answer to the class. The data collected from the classroom observations confirmed that the teacher participant used student-to-student discourse as a means of formative assessment.

Effective teaching requires that students feel comfortable in the classroom. According to Danielson (2007), the quality of the relationships between the individuals within the classroom is a critical aspect of promoting learning; students cannot focus on learning if the classroom environment is negative, fearful, or chaotic. During the interview, the teacher participant indicated that student-to student discourse was an important tool for creating rapport with her students and among the students themselves. This aligned well with Danielson's (2007) elements of "Creating an Environment of Respect and Rapport," which includes teacher interaction with students and students’

interactions with other students. Over the course of the observation period, the researcher documented several incidents of the teacher demonstrating care and respect for the students. While a few occasions occurred in which the teacher corrected students for using inappropriate words (such as "Shut up") with their peers, the classroom environment generally was polite, respectful, and caring in nature. Of the occasions when group work was implemented for instructional purposes, in only one students were assigned or placed in groups by the teacher. All others were student choice. An abundance of evidence was seen to support that the teacher used student-to-student discourse to create a positive, nurturing environment.

Research Question Two: Use of Strategies

Over the course of eight weeks, the researcher observed 40 hours in the teacher's seventh-grade science classroom in order to identify strategies the teacher employed during instruction to utilize student-to-student discourse. The strategies were organized using Danielson's Framework for Teaching (2007). The effective use of discourse, both teacher-to-student and student-to-student, is the basis for the third domain (Instruction) of Danielson's Framework. As such, the Framework essentially is a guide for effective discourse behaviors. With this tool, educational leaders and teachers can be intentional about ways to best improve their practice.

Domain Three: Instruction is described by Danielson (2007) as the "heart of the framework" (p. 77). Discourse is the mechanism teachers use to entice, engage, and elicit student interaction with the content. Domain Three is broken down into five components: communicating with students, using questioning and discussion techniques, engaging students in learning, using assessments in instruction, and demonstrating flexibility and

responsiveness. Each shows a continuum of behaviors from a rating of unsatisfactory to distinguished. Examining the teacher participant's observed discourse behaviors in the context of Danielson's Framework allowed the researcher to identify areas of growth and to make recommendations to improve practice.

Areas of strength identified from the data were communicating with students and using assessment in learning. Communicating with students requires that teachers set expectations for learning, provide clear directions and procedures, explain content using a variety of strategies, and use oral and written language effectively. Over the course of the study the teacher was observed demonstrating effective communication with students on each visit. Observed teacher behaviors that addressed this component include using peer teaching, hands-on labs/demonstrations, and cooperative group work to explain content to students. Video clips and multi-media presentations also were used to demonstrate scientific concepts, e.g., Newton's three laws of motion. Implementing multiple methods of explaining content increased the likelihood that students retained the information they were presented. Having students create scientific literature (lab reports, posters, etc.) based on rubrics and models of student work was another strategy used for communicating with students. When students have a rubric or model to guide their thinking about the teacher's expectations, they are more likely to reach that standard in their own work. When a teacher uses clear, effective communication in her classroom, the students respond by working through learning activities without confusion, producing grade-level appropriate student work samples, and modeling speaking and listening behaviors they are accustomed to seeing and hearing.

Another area of strength for the teacher participant in this study was using assessment in learning. The teacher was observed on every occasion assessing students and monitoring their learning. A variety of strategies were used, including multi-media presentations/games, teacher-led whole group questions and answers, and informal small group or one-on-one verbal feedback. The teacher asked probing questions to elicit students' misconceptions, and provided supportive materials and instruction when necessary. When students completed hands-on experiments and demonstrations, the teacher monitored the outcome of the experience to ensure that their instructional needs were met. Another valuable method of providing feedback for students is through the use of peer assessment. Students in the teacher participant's classroom were observed providing peer feedback on one another's work products, as well as during learning activities. Using assessments to guide learning and provide feedback to students is an integral tool to promote learning. When used thoughtfully, as demonstrated by the teacher in this study, student-to-student discourse for the purpose of assessment plays a critical role in teaching and learning.

Areas of growth in this case study included using questioning and discussion techniques and engaging students in learning. One area was the use of questioning and discussion techniques. A distinguished teacher uses high quality questions and provides adequate wait time for students to answer. Additionally, the teacher created opportunities for the students to actively participate in the lesson by formulating questions and assuming responsibility for the success of the discussion. This included initiating topics and making unsolicited contributions. During these lessons students ensured that all members of the group are heard. In order for students to develop high level discourse

behaviors such as these, teachers must first model and then create structures and activities that promote them. Finally, students also must be held accountable. One strategy that a teacher could implement in the classroom to promote equitable discourse is to present students with a discussion topic in small groups. After a period of time, each student would be required to share a thought from the group that belonged to someone else. This activity ensures that everyone's voice is heard and increases student initiation of discourse. A technique that could be used to support equitable discourse is the use of a discussion protocol, which serves as a structured guide and creates a "safe" time in which students can share their thinking without interruption. Protocols are useful for helping students stay on track during times of discussion by providing time limits and structure. As students gain experience with protocols, the structure can be loosened to allow them the opportunity to increase their proficiency with leading conversations.

Component 3c in Danielson's Framework, engaging students in learning, is another growth area identified in the study. Distinguished teachers in this component create assignments or activities that cognitively engage all students, allow them to initiate or adapt activities to enhance their understanding, and allow time for reflection and closure. Developing tasks that are both appropriate for a wide range of students in a classroom and engaging to all students can be challenging. In order to meet the challenge, teachers should ensure the task has a meaningful purpose (of which students are aware), requires students to learn something, and is complex in nature, so that more than one student's ideas are necessary for completion. Another strategy the teacher participant could implement in the classroom is the process of argumentation, in which students are required to make claims based on scientific evidence, offer counterclaims, seek

clarification, and then either reach a consensus or identify points of contention. Creating cognitively demanding tasks and opportunities for argumentation are two strategies that teachers can use to improve speaking and listening skills, to increase student engagement, and to produce an authentic purpose for student-to-student discourse.

The findings of this evidence are important because they suggest the teacher not only understands the impact of student-to-student discourse as an instructional tool, but also intentionally plans for its inclusion during instructional sequences. The teacher encourages the use of discourse, has structures in place to promote discourse, and provides opportunities for students to develop their competencies with discourse. However, while the teacher has a solid foundation in place as it pertains to student-to-student discourse, the areas of growth imply the need to develop additional strategies in order to maximize the impact of the student discourse in the classroom.

Research Question Three: Teacher as Facilitator

The third research question asked about the teacher's facilitation of learning during student-to-student discourse. To answer this question, the researcher compiled evidence from the field notes at the end of each observation day. The evidence was then organized according to the Discourse Observation Protocol (Appendix C). Using this tool, the researcher identified a variety of methods the teacher used to facilitate learning in her classroom. Not surprising, two themes emerged from this evidence. The frequency in which the teacher used discourse for the purpose of assessment and for the purpose of creating and maintaining a positive classroom environment was significantly higher than other uses. Discourse that includes all learners in the lesson and established speaking and

listening rights and responsibilities for students during discourse were the least represented during the classroom observations.

The findings associated with the Discourse Observation Protocol are important, in that they show a pattern of behaviors consistent with the teacher serving as a facilitator of learning, rather than a traditional deliverer of knowledge. As a facilitator of learning, teachers plan collaborative learning experiences that allow the students to engage actively with others and to construct understanding using their own methods. This data reflected that the teacher participant focused on using classroom discourse to enhance the classroom culture, manage student activities, and assess students' progress. Each of these behaviors demonstrates the way in which the teacher served as facilitator of learning. A variety of student activities were implemented including peer teaching, the jigsaw method (reciprocal teaching), and small groups working to solve problems. In order to ensure equitable opportunities for all learners to participate in these activities, the teacher should develop a plan to establish speaking and listening rights for students during discourse. The intentional focus on this issue will increase the number of students who are engaged in the learning activities and, thus, improve student achievement.

Summary

The purpose of this study was to investigate whether the beliefs of the teacher participant regarding the use of student-to-student discourse influenced the instructional practices that were observed during their classroom instruction. The data collected support the theory that a teacher's beliefs impact instructional practices in the classroom. The participant identified two primary themes associated with student-to-student discourse during the semi-structured interview. The evidence collected in the researcher's

field notes indicate that those themes persisted throughout the study. These data are beneficial to educational leaders and other administrators because, in order for classroom teachers to incorporate discourse into their instructional toolbox as a means of increasing rigor, they first must believe it will affect change. Once that belief is established, developing a deliberate plan of action to improve practice should be an obtainable goal.

Implications of the Results

The researcher's purpose for this study was to gather data to illustrate the instructional practices of a teacher who promoted student-to-student discourse in a middle school classroom. As a mentor teacher for current students enrolled in the SKyTeach program at Western Kentucky University, the beliefs and instructional practices of the teacher participant in this study are worthy of examination. The teacher's instructional decisions and practices not only impact the students in her classroom, but also they potentially affect the instructional practices of the pre-service teachers she mentors. For this reason, the cumulative influence of the teacher participant was an important consideration for the researcher.

One implication from the results is that the beliefs of a teacher regarding instructional practices impacts the frequency with which they use it. The results show that, if a teacher believes that an instructional practice, such as student-to-student discourse, is valuable for a particular purpose, they implement the strategy on a recurring basis. In a broader application, if educational leaders desire that teachers implement specific strategies on a regular basis, they must consider the beliefs of teachers regarding that strategy. Before time and energy is spent presenting a strategy to teachers, it worthwhile to assess their mindset about the strategy and plan accordingly.

Another implication for the results of this study is directly related to the teacher participant. As a teacher with only a few years of experience, the teacher undoubtedly will continue to grow professionally and to develop a more sophisticated repertoire of instructional strategies to implement in her classroom. Using the results of this study, the teacher can become a "reflective practitioner" and develop a strategic plan for increasing her use of student-to-student discourse for purposes other than those currently used in order to become even more effective.

Missed Opportunities and Recommendations

Common Core Standards

While classroom discourse analysis, along with its implications on learning, has been a field of study in educational research for many decades, it recently came to the forefront with the release of Common Core Standards (CCS) in 2010. In addition to developing proficiency in reading and writing, students are expected to meet high standards in speaking and listening, as well as to engage in student-to-student discourse on a variety of age-appropriate topics. From as early as kindergarten, students are required to participate in discourse with their peers and to follow agreed upon conventions of discussion. With experience, students should develop an increasing understanding of engaging in discourse in meaningful ways, eventually preparing them for college and/or a career. As a component of the CCS, teachers are accountable for ensuring that students both practice and master discourse skills appropriate for their grade level.

The evidence in this study clearly shows that the teacher participant possesses a willingness to use student-to-student discourse as a means of instruction in the science

classroom. This is evident from the number of opportunities the teacher provided for students to engage in discourse with their peers. Although they had many opportunities to participate in student-to-student discourse, the CCS for speaking and listening were inadequately addressed during the observation period. With some minor revisions to the lesson plans already in place, students could develop their competency in speaking and listening (discourse behaviors) while learning science content. With the appropriate professional development in place for teachers, missed opportunities could be rehabilitated and student learning could be maximized across content.

According to the CCS, seventh-grade students should develop the ability to come to a discussion prepared, having read or researched the material under study, and then refer to the evidence they gathered. During the observation period, one lesson required students to collect information about a topic (related to energy) from a textbook and work collaboratively with a partner to create a shared work product (a scientific poster). While this lesson included students talking with one another for the purpose of learning, the task did little to promote the use of authentic scientific talk. One alternative the teacher could have used to enhance student learning with this activity would be to allot time for each student to read the required material, and then bring the pair together to discuss a series of guiding questions based on the reading. After the students discussed the content, they could use the evidence they collected from their reading to create an informative poster to share with their classmates. With a more authentic purpose for student-to-student discourse, the power of this lesson would grow exponentially.

Presenting claims and findings is another standard for seventh-grade students according to CCS. During the presentation, students should emphasize the salient points

in a focused, coherent manner. In order to address this speaking standard, the teacher could have adapted the observed energy lab lesson. In the original lesson, students were provided with a lab protocol to follow. After following the protocol, the students completed a standard fill-in-the-blanks worksheet to record their observations. After developing their "expertise" with the activity, the students took turns sharing their experience with others who, in turn, completed their worksheet. To enhance student learning in this exercise, the teacher could have incorporated the speaking skill of presenting and justifying a claim. After following the protocol and experiencing the phenomenon, the group of students could have discussed and agreed upon a claim that would be supported by their observations (scientific evidence). Rather than students reading from a script or retelling the steps of the protocol and the results to their classmates, each group member could report the group's claim and have the other students validate or challenge the claim with their own observations.

Summary

Of the many criticisms faced by educational leaders and teachers in the United States, implementing reform is not one. With each yearly release of the way in which American school children compare to other countries on standardized tests scores, "new" ideas and initiatives about improving learning invade teachers' classrooms from almost every angle. Despite these many reforms, overall student achievement remains stagnant. Rather than overwhelming educators with more "new" programs and initiatives, some researchers (Marzano, 2003; Odden, 2009; Schmoker, 2011) suggested that schools simplify their approach. Educators should do what will work from the research and, more important, persist in that which works. Schmoker (2011) suggested that, rather than

continuing the existing broken cycle of school improvement, educators focus on what they teach, how they teach, and authentic literacy (reading, writing, and talking with purpose).

During the course of this study, the researcher identified several lessons in which the teacher provided students authentic literacy experiences in science. Students were observed reading, writing, and/or talking about science topics during all of the observations. This indicated that the teacher is aware of the importance of these skills. Unfortunately, awareness alone is insufficient for teachers to plan and to implement the types of lessons students need in order to master CCS. Based on the results of study, the researcher recommends that existing teacher education programs (both traditional and non-traditional) include authentic literacy as a component of teacher training. This is particularly important for programs designed for middle and high school teachers who emphasize content knowledge rather than pedagogy. In addition, educational leaders should provide and support current teachers in the development of authentic literacy experiences for their classrooms. This could be accomplished with coaching by literacy or curriculum specialists, or through professional development sessions.

Limitations

Several limitations were acknowledged when considering the findings of this study. First, the intent of the study was to investigate the impact of the teacher's beliefs about the use of student-to-student discourse on her use of the strategy. As this study focused solely on the instructional practices of the teacher, no student level data was found concerning the use of the discourse. The absence of student level data prevented the researcher from analyzing the nature and quality of the discourse that occurred during

the observation period. Another limitation of the results was that it did not include data about the amount of time students spent in discourse with their peers, as opposed to time spent in discourse with the teacher. Without student level data, the findings were limited to the teacher's beliefs and instructional practices.

Suggestions for Future Research

As a result of this study, many potential avenues of future research that could be explored. First, additional research to examine whether a relationship exists between a teacher's self-efficacy (beliefs) and classroom behaviors could provide educational leaders an advantage when developing professional growth plans with teachers. This research would allow leaders to assess a teacher's beliefs to determine steps that should be taken to increase teacher effectiveness.

Second, research to compare the beliefs and behaviors of a SKyTeach program graduate with those of a graduate from traditional middle grades education program would help to identify whether the experiences with the SKyTeach program are an influential factor in the types of discourse behaviors employed by a teacher. If a difference is found to exist, this research could serve to promote the expansion of the SKyTeach and similar programs.

Finally, during the semi-structured interview, the teacher participant expressed the opinion that students enjoy their class more than others due to their use of student-to-student discourse. Do students prefer learning via student-to-student discourse? A comparison between teachers who implement student-to-student discourse routinely as a function of their classroom and those who do not could answer this question. Additionally, researchers could examine whether the quality of learning a student

acquires from discourse with others is equivalent, better, or inferior to than learning from the teacher. This research could influence the development of teacher education courses and/or result in changes to existing courses.

Summary Statement

Improving the quality of education begins and ends with an investment in the single greatest predicator of a student's success or failure: a teacher. The measure of a teacher's effectiveness (or lack thereof) in the classroom is clear and convincing in research, such as the work of Danielson (2007). The cause of effectiveness is less clear. This study examined whether the beliefs of a middle school science teacher regarding the use of student-to-student discourse during instruction influence the behaviors they employ in the classroom. The results of this study indicate that beliefs matter. The themes identified by the teacher at the onset of the study were observed consistently, while curricular standards for discourse were not addressed. While the teacher possessed some background knowledge about the importance of student-to-student discourse as an instructional strategy and implemented it as a result, a lack of understanding appeared to be present relative to implementing discourse curriculum standards within the science content. As a result, this study indicates that teachers need specific, intentional training in using discourse as a tool of effectiveness.

REFERENCES

Alvermann, D. E. (1991). The discussion web: A graphic aid for learning across the curriculum. *The Reading Teacher, 45*, 92-99.

Au, K. H. (1993). *Literacy instruction in multicultural settings*. Fort Worth, TX: Harcourt Brace.

Barker, L. M. (2015). Under discussion: Teaching speaking and listening. *English Journal, 104*(3), 97-100.

Billings, L., & Roberts, T. (2012). Think like a seminar. *Educational Leadership, 70*(4), 68-72.

Cazden, C. B. (2001). *Classroom discourse: The language of teaching and learning* (2nd ed.). Portsmouth, NH: Heinemann.

Center for Public Education. (2016). *Teacher quality and student achievement: Research review*. Retrieved from http://www.centerforpubliceducation.org/Main-Menu/Staffingstudents/Teacher-quality-and-student-achievement-At-a-glance/Teacher-quality-and-student-achievement-Research-review.html

Common Core Standards Initiative. (2010). *Common Core State Standards for English language arts & literacy in history/social studies, science, and technical subjects*. Retrieved from http://www.corestandards.org/ELA-Literacy/

Coultas, V. (2010). A revival of talk: The challenge of oracy in schools now. *English Drama Media, 16*, 15-18.

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among the five traditions*. Thousand Oaks, CA: Sage.

Danielson, C. (2007). *Enhancing professional practice: A framework for teaching* (2nd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.

Delpit, L. (1988). The silenced dialogue: Power and pedagogy in educating other people's children. *Harvard Educational Review, 58,* 280-297.

Delpit, L. (2006). *Other people's children: Cultural conflict in the classroom* (2nd ed.). New York: The New Press.

Fisher, D., & Frey, N. (2011). *Academic language in the secondary classroom*. Retrieved from fisherandfrey.com/uploads/posts/Academic_Lang_NASSP.pdf

Fisher, D., & Frey, N. (2014). Speaking and listening in content area learning. *Reading Teacher, 68*(1), 64-69.

Frey, N., Fisher, D., & Nelson, J. (2013). It's all about the talk. *Kappan, 94*(6), 8-13.

Ganske, K., & Jocius, R. (2013). Small-group word study: Instructional conversations or mini-interrogations. *Language Arts*, *91*(1), 23-40.

Gay, G. (2000). *Culturally responsive teaching: Theory, research, and practice*. New York: Teachers College Press.

Gee, J. P. (2008). *Social linguistics and literacies* (3rd ed.). London: Falmer Press.

Goldenberg, C. (1991). *Instructional conversations and their classroom applications*. Washington, DC: National Center for Research on Cultural Diversity and Second Language Learning.

Gumperz, J. C. (Ed.). (1985). *The social construction of literacy*. Cambridge, MA: Cambridge University Press.

Gumperz, J. J. (1985). Interactional sociolinguistics in the study of schooling. In J. C. Gumperz (Ed.), *The social construction of literacy* (pp. 45-68). Cambridge, MA: Cambridge University Press.

Heath, S. B. (1983). *Ways with words: Language, life, and work in communities and classrooms*. Cambridge, MA: Cambridge University Press.

Hymes, D. (1972). Models of the interactions of language and social life. In J. J. Gumperz & D. Hymes (Eds.). *Directions in Sociolinguistics: The ethnography of communication* (pp.35-71). New York: Holt, Reinhart.

Kochman, T. (1981). *Black and white styles in conflict*. Chicago: University of Chicago Press.

Larmer, J., & Mergendoller, J. R. (2013). Speaking of speaking. *Educational Leadership, 70*(4), 74-76.

Malamah-Thomas, A. (1987). *Classroom interaction*. New York: Oxford University Press.

Marzano, R. (2003). *What works in schools: Translating research into action*. Alexandria, VA: Association for Supervision and Curriculum Development.

Marzano, R. (2007). *Nine instructional strategies for effective teaching and learning*. Retrieved from www.ntuaft.com/.../marzanos 9 strategies.pdf

Mercer, N., & Dawes, L. (2010). Making the most of talk: Dialogue in the classroom. *English Drama Media*, *16*, 19-25.

Neito, S., & Bode, P. (2012). *Affirming diversity: The sociopolitical context of multicultural education* (6th ed.). Boston: Pearson Education.

Neuman, D. (2012). Here comes the future: Information is the building block for learning. *Knowledge Quest, 40*(3), 24-28.

Noddings, N. (2005). *The challenge to care in schools: An alternative approach to education* (2nd ed.). New York: Teachers College Press.

Odden, A. (2009). We know how to turn schools around--we just haven't done it. *Education Week, 45*(1), 4-8.

Patton, M. Q. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, CA: Sage.

Pianta, R. C., Belsky, J., Houts, R., & Morrison, F. (2007). Teaching: Opportunities to learn in America's elementary classrooms. *Science, 315*(5820), 1795-1796.

Schmoker, M. (2011). *Focus: Elevating the essentials to radically improve student learning*. Alexandria, VA: Association for Supervision and Curriculum Development.

Shemwell, J. T., & Furtak, E. M. (2010). Science classroom discussion as scientific argumentation: A study of conceptually rich (and poor) student talk. *Educational Assessment*, *15*(3-4), 222-250. doi:10.1080/10627197.2010.530563

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22,* 63-75.

Slavin, R. E. (2007). *Educational research in the age of accountability*. Boston, MA: Pearson.

Tanner, M. L., & Casados, L. (1998). Promoting and studying discussions in math classes. *Journal of Adolescent & Adult Literacy, 41*(5), 342-350.

Tharp, R. G., & Gallimore, R. (1991). *The instructional conversational: Teaching and learning in social activity* (Research Report No. 2). Washington, DC: National Center for Research on Cultural Diversity and Second Language Learning.

Tredway, L. (2011). *Socratic seminars: Engaging students in intellectual discourse*. Retrieved from http://www.middleweb.com/Socratic.html

Valenzuela, A. (1999). *U.S.-Mexican youth and the politics of caring*. Albany, NY: State University of New York Press.

Western Kentucky University. (2014). *Welcome to SKyTeach*. Retrieved from http://www.wku.edu/skyteach/

APPENDIX A

Semi-structured Interview Questions

1. What is the purpose of student-to-student discourse in your classroom?

2. What do you try to discover or find out through student-to-student discourse?

3. How do you use what you find out from student-to-student discourse?

4. How do you think students are affected by your use of student-to-student discourse in the classroom?

5. How does student-to-student discourse make your classroom different from a classroom where student-to-student discourse is not used?

APPENDIX B

Field Observation Instrument

Date: _____ Teacher: _____ Observer: _____
Observation #: _____ Start time: _____ End time: _____
# of Students: _____ Lesson topic: _____ Grade level: _____

Beginning Time Interval:		Type Notes Below Starting at Numbered Line.
1		
Beginning Time Interval:		Type Notes Below Starting at Numbered Line.
2		
Beginning Time Interval:		Type Notes Below Starting at Numbered Line.
3		
Beginning Time Interval:		Type Notes Below Starting at Numbered Line.
4		
Beginning Time Interval:		Type Notes Below Starting at Numbered Line.
5		
Beginning Time Interval:		Type Notes Below Starting at Numbered Line.
6		
Beginning Time Interval:		Type Notes Below Starting at Numbered Line.
7		
Beginning Time Interval:		Type Notes Below Starting at Numbered Line.
8		
Beginning Time Interval:		Type Notes Below Starting at Numbered Line.
9		
Beginning Time Interval:		Type Notes Below Starting at Numbered Line.
10		
Beginning Time Interval:		Type Notes Below Starting at Numbered Line.
11		

APPENDIX C

Discourse Observation Protocol

District: _____ Teacher: _____
Number of Students: _____ Date of Observation:_____
Start Time of Observation: _____ End Time of Observation: _____
Free/Reduced Lunch: _____ Lesson Topic: _____
Observer: _____ Grade Level: _____

Directions: Read the following statements, and circle the response that best represents the observation of the teacher.

1. The teacher uses discourse for the purpose of building rapport between students or between themselves and the student(s).

Strongly Agree	Agree	Disagree	Strongly Disagree	N/A
1	2	3	4	5

2. The teacher uses discourse for the purpose of maintaining a positive classroom environment.

Strongly Agree	Agree	Disagree	Strongly Disagree	N/A
1	2	3	4	5

3. The teacher uses discourse for the purpose of classroom management or carrying out an organizational task.

Strongly Agree	Agree	Disagree	Strongly Disagree	N/A
1	2	3	4	5

4. The teacher uses discourse for the purpose of assessment.

Strongly Agree	Agree	Disagree	Strongly Disagree	N/A
1	2	3	4	5

5. The teacher poses questions to students in a variety of ways.

Strongly Agree	Agree	Disagree	Strongly Disagree	N/A
1	2	3	4	5

6. The teacher uses discourse for the purpose of teaching (pedagogical).

Strongly Strongly

Strongly Agree | Agree | Disagree | Strongly Disagree | N/A
1----------2----------3----------4----------5

7. The teacher has established speaking rights and responsibilities for students during discourse.

Strongly Agree | Agree | Disagree | Strongly Disagree | N/A
1----------2----------3----------4----------5

8. The teacher has established listening rights and responsibilities for students during discourse.

Strongly Agree | Agree | Disagree | Strongly Disagree | N/A
1----------2----------3----------4----------5

9. The teacher uses classroom discourse to include all learners in the lesson.

Strongly Agree | Agree | Disagree | Strongly Disagree | N/A
1----------2----------3----------4----------5

10. The teacher uses classroom discourse to convey rejection or acceptance.

Strongly Agree | Agree | Disagree | Strongly Disagree | N/A
1----------2----------3----------4----------

APPENDIX D

IRB Approval Letter

INFORMED CONSENT DOCUMENT

Project Title: Examining the Use of Student-to-Student Discourse in the Middle School Classroom

Investigator: April Craft, Western Kentucky University, 615-388-5864

You are being asked to participate in a project conducted through Western Kentucky University. The University requires that you give your signed agreement to participate in this project.

The investigator will explain to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. You may ask any questions you have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and discuss with the researcher any questions you may have.

If you then decide to participate in the project, please sign this form in the presence of the person who explained the project to you. You should be given a copy of this form to keep.

1. **Nature and Purpose of the Project:**
Examining the Use of Student-to-Student Discourse in the Middle School Classroom is a qualitative applied research study that will use a case study approach to investigate how a teacher uses student-to-student discourse during instruction in a middle school science classroom.

2. **Explanation of Procedures:**
The researcher will meet with the participant to conduct a semi-structured one-on-one interview, ask the participant to complete a self-reporting teacher efficacy survey, and create a schedule for future observations. Once a schedule has been set, the researcher will observe the teacher participant up to 5 hours per day, one to two days a week for eight-weeks. During the observations, the researcher will collect field notes using the Discourse Observation Instrument and the field observation instrument.

3. **Discomfort and Risks:**
While there are no anticipated risks for the participant, the study requires the researcher to observe in the participant's classroom for at least 40 hours. Some people may experience discomfort due to this amount of observation. Additionally, the participant and/or the researcher may need to modify the original schedule of observations which would require the participant to engage in two-way communication with the researcher.

4. **Benefits:**
While there are no direct benefits to participating in this study, the knowledge that is expected to be gained will allow educational leaders and teachers, including the study participant, to evaluate their own and the practices of others and develop a deliberate plan for how to incorporate discourse for a variety of purposes in their instruction as a means of increasing rigor in the

WKU IRB# 15-035
Approval - 10/17/2014
End Date - 11/30/2014
Expedited
Original - 8/26/2014

middle school classroom. In addition to the practical applications, this study also has theoretical implications in the field of teaching and learning. This study will provide theoretical insights into the value of using discourse in a variety of ways in the science classroom. Finally, this study will suggest implications for teachers as they plan lessons that include using discourse for multiple purposes and meet the CCS for speaking and listening and literacy in science.

5. **Confidentiality:**
The confidentiality of the data collected will be maintained by identifying the name of the teacher and the school using pseudonyms. The data will be stored in a secure electronic file at WKU for a minimum of 3 years.

6. **Refusal/Withdrawal:**
Refusal to participate in this study will have no effect on any future services you may be entitled to from the University. Anyone who agrees to participate in this study is free to withdraw from the study at any time with no penalty.

You understand also that it is not possible to identify all potential risks in an experimental procedure, and you believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.

_____ _____
Signature of Participant Date

_____ _____
Witness Date

THE DATED APPROVAL ON THIS CONSENT FORM INDICATES THAT
THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY
THE WESTERN KENTUCKY UNIVERSITY INSTITUTIONAL REVIEW BOARD
Paul Mooney, Human Protections Administrator
TELEPHONE: (270) 745-2129

WKU IRB# 15-035
Approval - 10/17/2014
End Date - 11/30/2014
Expedited
Original - 8/26/2014