DIFFERENCES BETWEEN ELEMENTARY, MIDDLE, AND SECONDARY TEACHERS' PERCEPTIONS AND IMPLEMENTATION OF COOPERATIVE LEARNING STRATEGIES

by

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Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

The purpose of this quantitative, causal-comparative study was to find potential differences in perceptions toward cooperative learning implementation (expectancy of success, perceived value, and perceived cost) and current teaching practices among groups of teachers, using the Cooperative Learning Implementation Questionnaire (CLIQ) instrument developed by Abrami, Poulsen, and Chambers (1998). The participants were part of a convenience sample of elementary teachers, $n = 60$, middle school teachers, $n = 44$, and secondary teachers, $n = 45$ in seven central Ohio public school districts. The research utilized a MANOVA to determine if there was a statistically significant difference in mean CLIQ subscale scores, (a) overall CLIQ scores, (b) expectancy of success, (c) perceived value, (d) perceived cost, and (e) current teaching practices between three groups of teachers (elementary, middle, secondary). The results for the MANOVA indicated that elementary, middle, and secondary teachers have similar perceptions of cooperative learning and similar current teaching practices for cooperative learning $F(2, 148)=1.62$, $p = .10$, $\eta^2=.05$ and no difference was found among the groups. The researcher also provided additional discussion, implications, and suggestions for further research.

Keywords: cooperative learning, perceived value, perceived cost, expectancy of success, current teaching practices

Dedication

This dissertation is dedicated to Shannon, Carter, and Reese. You three have been so supportive during this journey. You are blessings from God!

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List of Abbreviations

Cooperative Learning (CL)

Cooperative Learning Implementation Questionnaire (CLIQ)

Institutional Review Board (IRB)

Multivariate Analysis of Variance (MANOVA)

Ohio Department of Education (ODE)

Peer Assisted Learning Strategies (PALS)

Student Teams Achievement Divisions (STAD)

Team Assisted Individualization (TAI)

Variance Inflation Factor (VIF)

CHAPTER ONE: INTRODUCTION

Background

One focus of education is to prepare students for the future. For American students to be effective participants in the global economy as students and workers, certain skills should be developed in school (Friedman, 2005). Such essential skills for the 21st century include creativity and imagination, critical thinking, problem solving, and collaboration and teamwork (Friedman, 2005). The Partnership for 21st Century Skills (2014) emphasized critical thinking, communication, creativity, and collaboration as necessary skills for innovation. There is a greater need for students to collaborate with others across a wide range of social groups (Wagner, 2014). The importance of student collaboration is emphasized across members of the teaching and learning community and across various academic disciplines. Skills for collaboration can be developed through cooperative learning experiences in the classroom, as Sears and Reagin (2013) found that student collaborative skills improved through cooperative learning experiences.

Cooperative learning can be defined as "an instructional strategy in which students work actively and purposefully together in small groups to enhance both their own and their teammates' learning" (CLIQ, Abrami, Poulsen, & Chambers, 2004). Cooperative learning experiences can be used with a variety of age groups and subject areas. Essential social skills for students, such as active listening, verbal communication, problem solving, and collaboration are developed through cooperative learning experiences (Tarim, 2009). Such social skills also enhance a student's academic experience (Tarim, 2009). The effects of cooperative learning are different in comparison to the teacher-directed learning model. Cooperative learning can have a much greater effect than teacher-directed learning because students learn from peers in addition

to the teacher (Ebrahim, 2011). When cooperative learning is implemented properly, student engagement and achievement greatly increases (Igel & Urquhart, 2012).

Cooperative learning experiences can greatly enhance student learning, yet cooperative learning is a practice that is not implemented by every teacher (Gillies & Boyle, 2009; Hennessey & Dionigi, 2013). There are contributing factors to the implementation of educational practices, such as teacher motivation and proper professional development (Krecic & Grmek, 2007).

Instructional reform has been a continual initiative throughout history as the needs of American students change. The Soviet launch of *Sputnik* in 1957 initiated educational reform for American students, specifically in the fields of math and science (Bybee, 1997). Other educational reforms have been sparked by threats to America's global status. At the end of the 20th century, many experts found American students ill-equipped with the academic, technical, and interpersonal skills necessary for career success in a global economy (Friedman, 2005). The need for students to be equipped with 21st century skills was a driving force for educational reform at the start of the new millennium. Skills such as critical thinking, problem solving, global citizenship, and innovation were considered overarching skills in academic curricula (Bell, 2010). Another very important skill that has been emphasized by proponents of 21st century skills is student collaboration because interpersonal collaborative skills are necessary for success in a global economy (Friedman, 2005; The Partnership for 21st Century Skills, 2014; Wagner, 2014). Student collaboration can be fostered through cooperative learning experiences.

Cooperative learning has been a widely known instructional practice for several decades. Coleman (1961) developed educational settings in which students worked together on assignments in order to eliminate competition among classmates. Cooperative learning activities

have included small group work, partner assignments, peer coaching, and peer tutoring (Beck & Chizhik, 2013). Cooperative learning stemmed from Bandura's social cognitive theory and Deutsch's social interdependence theory. According to Bandura (1971), individuals learn through social interactions with others. Cooperative learning is more than just mimicry of behaviors and skills. Rather, individuals learn from competent and skilled peer models (Bandura, 1971). According to social interdependence theory, individuals achieve goals through the combined actions with a group of peers (Deutsch, 1962; Johnson, 2003; Johnson & Johnson, 2005; Johnson, Johnson, & Roseth, 2010). The entire process of group work is more important than the desired product (Johnson & Johnson, 2009). Later work on cooperative learning was conducted by Slavin (1994), who emphasized students working in small groups to master academic content. Slavin also found that in a review of 67 studies, 61% of the cooperative learning classes achieved significantly higher test scores than traditional classes. Peer tutoring and other forms of collaboration are also regarded as research-based, widely recognized forms of cooperative learning among students (Phelps & Damon, 1989). Other specific strategies such as team assisted individualization (TAI), student teams achievement divisions (STAD), and peer assisted learning strategies (PALS) have been developed and implemented to enhance student learning (Bilgin, Karakuyu, Tatar, & Cetin., 2012). As the aforementioned studies have shown, cooperative learning experiences for students have a positive impact on student learning.

Educational reforms and research-based teaching strategies are only effective if implemented properly, as Krecic and Grmek (2007) noted. Properly implemented instructional strategies can enhance student engagement and achievement (Igel & Urquhart, 2012). The implementation of specific teaching strategies have been linked to both teacher understanding and motivation. Vroom's expectancy theory of motivation (1964) was established to explain

employee motivation on the job. There were three key components to the theory. First, expectancy referred to workers' expectance of success in completion of the task. Second, instrumentality referred to workers' perception of value in the task. Finally, valance referred to the outcomes of task performance. (Vroom, 1964; Wigfield & Eccles, 2000). Employees were motivated when there was a high expectancy of success, high perception of value in the task, and low perception of risk in the task (Vroom, 1964).

Much of the research on teacher implementation of cooperative learning strategies has focused on specific isolated classes, grade levels, or subjects. Studying high school English classes, Hijazi and Al-Natour (2012) found that teacher experience and degree level had an impact on attitudes about cooperative learning. Hennessey and Dionigi (2013) studied elementary teachers' attitudes toward cooperative learning and found that students' age and behavior affect the teachers' attitudes toward implementation. Teacher knowledge of cooperative learning strategies has also been a contributing factor to teacher attitudes toward implementation (Hennessey & Dionigi, 2013; Pescarmona, 2011). Teacher professional development was another contributing factor to perceptions and implementation of cooperative learning. Law (2011) stated that there was a need for well-planned teacher guidance through professional development experiences and teacher cooperation. Research on teacher perceptions of cooperative learning can be used to contribute to the body of knowledge on teacher professional development (Abrami et al., 2004). A school's culture toward innovative practices and professional development have also impacted implementation of cooperative learning strategies (Pescarmona, 2011). Jablonsky (2010) noted that teacher motivation was a major contributing factor to implementation of cooperative learning, which provided stimuli for further research on teacher motivation.

Summary

The literature emphasized the importance of cooperative learning experiences for students, though most of the studies focused on elementary classrooms (Tarim & Akdeniz, 2008). Students gained not just academically, but also socially when involved in cooperative learning experiences. The literature also produced conflicting findings on teacher implementation of cooperative learning. Gillies and Haynes (2009) found that though cooperative learning provided valuable experience for students, many teachers fail to implement it in their classrooms. Jablonsky (2010) emphasized the importance of determining both teacher and student interest in cooperative learning. Abrami et al. (2004) found that many teachers implemented cooperative learning in their classrooms because they found value in the strategy. Studies have also determined the need for proper professional development for a greater teacher understanding of cooperative learning principles (Ebrahim, 2011). This study seeks to broaden the research on teacher implementation of cooperative learning strategies by examining perceptions and implementation among various teacher groups. Researchers and educators can gain insight into professional development needs for educators should differences in perceptions among various teacher groups exist.

Problem Statement

The literature addressed the benefits of teacher implementation of cooperative learning strategies. Cooperative learning experiences enhance the academic, social, and language experiences of young children (Burton, 2010; Tarim, 2009). Students explore flexible thinking models while taking other viewpoints into account (Allen, 2012). Higher level thinking skills are fostered through teacher and student interactions in cooperative learning situations (Gillies & Haynes, 2011). Specific cooperative learning techniques coupled with quality instruction can

produce significant academic gains for students (Bilgin et al., 2012; Chizhik, 2013; Jacobs, 2012). Problem-solving and collaborative skills necessary for 21st century learning are also developed through cooperative learning experiences (Griffin, McGaw, & Care, 2012). The classroom teacher has the greatest impact on student learning through the proper implementation and facilitation of cooperative learning experiences (Gillies & Haynes, 2011; Jalilifar, 2010). Though effective strategies were discussed in the literature, one recommendation for further research targeted teacher implementation of cooperative learning strategies (Hennessey & Dionigi, 2013).

The implementation of specific teaching strategies depends on a teacher's motivation, which is affected by attitudes about such strategies (Hijazi & Al-Natour, 2012). Cooperative learning in the classroom requires the teacher to act as a facilitator rather than a lecturer, which is a concept with which many educators may not be familiar (Farzaneh & Nejadansari, 2014). Educators must find value in a specific teaching strategy to become motivated to use the strategy (Abrami et al., 2004; Thanh, 2009). Studies have shown that a teachers' attitudes about cooperative learning affect the extent to which it is actually implemented (Abrami et al., 2004; Ruys et al., 2010). Moreover, failure of implementation of cooperative learning among teachers is present(Hennessey & Dionigi, 2013). "Cooperative learning promotes academic achievement and socialization, yet many teachers struggle with implementing this in their class" (Gillies & Boyle, 2009, p. 933).

Studies on teacher attitudes toward cooperative learning have shown that a teacher's perceptions affect the implementation of such strategies, but there are areas for further research. Using a broad range of teachers in their study, Abrami et al. (2004) developed the Cooperative Learning Implementation Questionnaire (CLIQ), which is an instrument that determined the

predictive relationship between teachers' perceptions and professional practices. Ruys et al. (2010) used the same instrument to assess the relationship between student teachers' perceptions of cooperative learning and implementation of cooperative learning teaching practices.. In both studies the authors suggested expanding research to other groups of teachers, such as those who work with specific age groups (Abrami et al., 2004; Ruys et al., 2010). One problem that exists is the lack of empirical research investigating the implementation of cooperative learning across academic disciplines and various grade levels (Bilgin et al., 2012; Ebrahim, 2011; Gillies & Haynes, 2011; Hennessey & Dionigi, 2013; Jalilifar, 2010; Law, 2011; Wu, 2013). Another problem that exists is the lack of depth in research on both the perceptions of cooperative learning and implementation of cooperative learning across a diverse population of teachers (Ahmad & Mahmood, 2010; Barczi, 2013; Hennessey & Dionigi, 2013; Ruys et al., 2010; Surian & Damini, 2014).

Suggestions for further research on teacher implementation of cooperative learning provided the impetus for this study. Abrami et al. (2004), the authors of the Cooperative Learning Implementation Questionnaire (CLIQ) used for this study, suggested further testing of Expectancy Theory as it applies to other areas of teaching and learning. There was a present need for further research to investigate how teachers with different experience, backgrounds, and areas of expertise use research on cooperative learning for implementation (Law, 2011). Hennessey and Dionigi (2013) suggested further research into the differences in implementation among age groups because they found many elementary teacher participants in their study chose not to implement cooperative learning because of the age of their students. This study was conducted in order to determine if there was a significant difference between three different groups of teachers as it applied to the implementation of CL and CL strategies.

Purpose Statement

The purpose of this causal comparative study was to examine both perceptions and implementation of cooperative learning against teachers' grade levels with which they teach, respectively. A convenience sample of 152 teachers was selected from seven public school districts central Ohio during the spring semester of the 2015-2016 school year. Participants were invited to complete the Cooperative Learning Implementation Questionnaire (CLIQ, Abrami et al., 1998) to rate both perceptions of cooperative learning and current teaching practices of cooperative learning strategies within the classroom. Perceptions of cooperative learning is defined as a teacher's views on the implementation of cooperative learning in terms of expected success, perceived value, and perceived cost (Abrami et al., 2004). Current teaching practices of cooperative learning is defined as a teacher's rating of the extent to which cooperative learning is utilized as a teaching strategy (Abrami et al., 2004). The dependent variable was measured through teachers' scores for perceptions and implementation of cooperative learning, which were categorized into four subscales: expectancy of success, perceived value, perceived cost, and current professional practices. The independent variable was the grade level at which a teacher teaches, organized into three categories: elementary, middle, and secondary.

Significance of Study

The interest in cooperative learning experiences for students is high among educators who are interested in implementing quality pedagogical practices because of the academic, social, and psychological benefit for the student (Slavin, 2011). Students benefit from the instruction of peers in addition to that of a teacher (Allen, 2012). Gillies (2014) stated that cooperative learning experiences promote "achievements in reading and writing, conceptual development in science, problem-solving in mathematics, and higher level thinking and

reasoning" (p. 125). Cooperative learning experiences in the classroom provide students with the opportunities to develop global citizenship skills, which will only strengthen U.S. international competitiveness (Griffin et al., 2012). This study focused on teacher practices in terms of the implementation of cooperative learning techniques.

Gillies and Haynes (2011) indicated that direct instruction and facilitation by the teacher is necessary for the effectiveness of any instructional strategy. For cooperative learning experiences to be effective within the classroom, teachers must be motivated to implement the strategy; teacher engagement in professional learning experiences and sense of self-efficacy was a powerful predictor of teaching practices (Thoonen et al., 2014). Studies have shown that cooperative learning is effective, yet "Many teachers struggle with implementing this in their class" (Gillies & Boyle, 2009, p. 933). Additionally, studies on teacher motivational factors to the implementation of cooperative learning strategies in the classroom have been conducted, but sample populations were very broad (Abrami et al., 2004; Ruys et al., 2010). The effectiveness of cooperative learning experiences was examined through the lens of specific subjects, classes, and grade levels (Jao, 2012; Tarim, 2009). However, teacher perceptions of the implementation of cooperative learning have not been viewed through such a lens (Abrami et al., 2004; Krecic & Grmek, 2007; Ruys et al., 2010).

This study focused on differences in both perceptions of cooperative learning and professional practices for implementation between three groups of teachers. Because a curriculum varies at each developmental stage, teaching strategies are not always the same among elementary, middle, and secondary faculty (Manning & Bucher, 2012). The intent of this study was to add to the body of knowledge by determining if there is a significant difference

between elementary, middle, and secondary teachers' perceptions about cooperative learning and current teaching practices.

Research Question

The following research question was proposed:

RQ1: Is there a difference between the overall *perceptions of cooperative learning* and *current teaching practices* of elementary, middle, and secondary teachers as measured by the Cooperative Learning Implementation Questionnaire?

Null Hypothesis

The following null hypothesis was proposed:

H_o1: The overall scores of *perception of cooperative learning, expectancy of success, perceived value, perceived cost,* and *current teaching practices* do not differ significantly between elementary, middle, and secondary school teachers.

Definitions

The following definitions used for this study:

1. *Complementary grouping*- a grouping strategy in which students with similar academic abilities and interests are placed in the same group for study (Wu, 2013).
2. *Cooperative learning*- "An instructional strategy in which students work actively and purposefully together in small groups to enhance both their own and their teammates' learning" (CLIQ, Abrami et al., 1998, p. 1).
3. *Current teaching practices* refer to teachers' ratings regarding the extent to which they implement cooperative learning strategies in the classroom (CLIQ, Abrami et al., 1998).
4. *Elementary teacher*- a teacher who teaches students within the grades kindergarten through fifth (CLIQ, Abrami et al., 1998)

5. *Expectancy of success* describes a teacher's perceived expectations of the success or failure of an intended classroom initiative (Abrami et al., 2004). In this study, the intended initiative is cooperative learning.
6. *Face-to-face collaboration*- the interaction between group members in-person (Oner, 2013).
7. *Individualistic learning*- a learning experience in which a student participates in class, studies, and completes homework individually. Individualistic learning is the opposite of cooperative learning (Hsiung, 2012).
8. *Middle school teacher*- a teacher who teaches students within the grades sixth through eighth. (CLIQ, Abrami et al., 1998)
9. *Modeling*- the process of individuals learning from the example provided by a competent model (Bandura, 1971).
10. *Multivariate analysis of variance (MANOVA)* - a data analysis method in which there is one independent variable and multiple dependent variables. The method involves the analysis of variance between group means (Gall, Gall, & Borg, 2007).
11. *Mutual learning*- a learning experience in which students are placed into small groups to learn content together (Wu, 2013).
12. *Perceived cost* describes a teacher's perceived drawbacks of an intended classroom initiative (Abrami et al., 2004). In this study, the intended initiative is cooperative learning.
13. *Perceived value* describes a teacher's perceived benefits of an intended classroom initiative (Abrami et al., 2004). In this study, the intended initiative is cooperative learning.

14. *Secondary teacher*- a teacher who teaches students within the grades ninth through twelfth (CLIQ, Abrami et al., 1998)
15. *Student teams achievement divisions (STAD)*- a cooperative learning strategy in which students work in heterogeneous groups of up to five and complete the following cycle: (a) teach, (b) team study, (c) test, and (d) recognition (Bilgin et al., 2012).
16. *Team assisted individualization (TAI)*- a cooperative learning strategy that includes groups of two or three students completing an assignment, peer grading, and a final assessment taken individually (Bilgin et al., 2012).
17. *Traditional learning*- a learning experience that includes a detailed teacher presentation followed by student questions and discussion (Ahmad & Mahmood, 2010).
18. *Peer assisted learning strategies (PALS)* - a cooperative learning strategy in which student peers are strategically paired to provide tutoring for one another (Bilgin et al., 2012).

CHAPTER TWO: LITERATURE REVIEW

Introduction

This chapter is a review of the research and literature on cooperative learning and cooperative learning implementation by teachers. The review of the literature begins by examining the theoretical constructs that influence cooperative learning. Both social cognitive theory (Bandura, 1971, 1986, 2001) and social interdependence theory (Deutsch, 1949, 1962; Johnson & Johnson, 2002) establish a framework for cooperative learning as an effective teaching practice, while expectancy value theory (Wigfield & Eccles, 2000) establishes contributing factors to teacher motivation. These theoretical constructs influence both cooperative learning instructional practices and teacher motivation.

Literature on the relationship between cooperative learning and student academic achievement is included. A review of studies indicating both the academic and social benefits to cooperative learning experiences for students in diverse educational settings is also discussed. The academic and social benefits to cooperative learning outlined in this literature review further establish the credibility and usefulness of the instructional practice.

Teacher implementation of cooperative learning is included within the reviewed studies. Specifically, the lack of teacher implementation of cooperative learning is included, which solidifies a problem and raises apparent gaps in the literature. Limitations, suggestions for further research, and gaps in the literature to support the current study are also included within this review.

Theoretical Background

Three primary theoretical constructs relate to this review of literature and current study; they provide a foundation for both cooperative learning as a teaching strategy and for teacher

motivation. Social cognitive theory states that individuals learn from the modeling and influence of others (Bandura, 1971, 1986, 2001). Social interdependence theory states that groups are effective because each member is dependent upon the efforts of the other members and because a common goal is shared (Deutsch, 1949, 1962). Expectancy value theory states that individuals are motivated to complete tasks and try initiatives when there is a high expectancy of success and a strong value for the task or initiative (Wigfield & Eccles, 2000). The relationship between the theoretical constructs and cooperative learning is discussed because the effectiveness of cooperative learning is widely established among educational professionals.

Social Cognitive Theory

Social cognitive theory is rooted in the work Albert Bandura. The premise of the theory is that humans are social beings and gain knowledge through social interactions. Children learn through the words and actions communicated with others. Individuals can learn from witnessed behaviors, though social learning is more than just mimicry (Bandura, 2011). Within this theoretical framework, human functioning is socially interdependent (Bandura, 2001).

It is apparent that social cognitive theory also supports the premise that learning is influenced through modeling. "Most of the behaviors that people display are learned, either deliberately or inadvertently, through the influence of example" (Bandura, 1971, p. 5). Modeling has a positive effect for several reasons. First, new modes of learning can develop through observation of a competent model in the event of a mistake, eliminating the need for repetitive and unnecessary errors (Bandura, 1971). This point may be illustrated by a shared reading in which two students read a story together. A struggling reader can master a difficult word by reading with a competent peer. Second, complex behaviors, such as speech, would never be acquired by children without adequate modeling (Bandura, 1971). Number skills such as

counting and computing can also be developed through the observation of a competent model. Third, modeling shortens the process of acquiring a new concept for the learner (Bandura, 1971).

Bandura (1971) also stated through social cognitive theory that the influence of learning through observation of an adequate example is dependent upon the retention of the learner. The level to which a leaner commits the observed task to memory is highly important. Modeling includes two types of representations, imaginal and verbal (Bandura, 1971). This is true in the academic setting, as students are provided with both visual and auditory stimuli from teachers and peers.

Social cognitive theory is an essential theoretical construct for the current study because it forms the basis of cooperative learning, which is the teaching practice of interest (Bandura, 1971; Slavin, 1994). Cooperative learning is related to social cognitive theory because students expand their learning experience through exposure to new ideas and concepts from individuals with whom they learn (Bilgin et al., 2012). As students participate in groups they are exposed to multiple competent models while also learning from various perspectives (Bilgin et al., 2012; Slavin, 1994). Studies on the effectiveness of cooperative learning include a review of the social cognitive theoretical construct (Allen, 2012; Awofala, Fatade, & Ola-Oluwa, 2012; Beck & Chizhik, 2013; Zakaria, Solfitri, Daud, & Abidin, 2013).

Social Interdependence Theory

Social interdependence theory forms the basis for cooperative learning (Johnson & Johnson, 2009). The idea that humans develop more meaningful and organized views of the world by viewing events as integrated wholes instead of as isolated parts was first postulated in Gestalt psychology in the early 1900s (Deutsch, 1962). More specifically, groups were determined to be dynamic wholes in which the interdependence among members changes

(Deutsch, 1962). Deutsch (1949) determined that two types of social interdependence exist. Positive interdependence refers to the notion that an individual's perceive goals can be attained when fellow group members also attain the same goal (Deutsch, 1949). Negative interdependence refers to the notion that an individual's perceived goals can be attained when competitors fail to achieve their goals (Deutsch, 1949). The structure of participants' goals determines their interactions and outcomes (Deutsch, 1949).

There are three essential components to social interdependence theory: interdependence, interaction, and outcomes (Deutsch, 1962). Interdependence refers to the need within the group to reach mutual goals. Interaction refers to the process by which group members interact while engaging in the task. Outcomes refer to the influence of goal attainment on the motivation of each group member.

Interdependence. Additional research by Johnson and Johnson (2009) expanded social interdependence theory to focus on five variables of interdependence: positive interdependence, individual accountability, promotive interaction, appropriate social skills, and group processing. Johnson and Johnson (2009) defined these five variables:

- Positive interdependence is the sharing of a common learning goal by a group of students.
- Individual accountability involves equal contributions by each group member because success depends on the performance of every individual.
- Promotive interaction describes the behaviors between group members that enhance the work of the collective group.
- Appropriate social skills are established norms and behaviors within each group.

- Group processing refers to the acceptance and understanding of each group member of roles and responsibilities within the group (p. 367).

Interaction

Johnson and Johnson (2009) stated that social interdependence theory relates to the effective instructional strategy of cooperative learning. Successful cooperative work is reliant upon the contributions of every group member rather than the contributions of an individual. Within an instructional group, the students work as an integrated whole (Johnson & Johnson, 2009) toward a common goal. Group tasks are typically planned and centered on a common learning outcome for the entire group, while each group member exerts effort to reach the shared goal. Groups are successful with an existence of interdependence between each member to perform the necessary tasks for success (Johnson, 2003). Studies on the effectiveness of cooperative learning for student learning include social interdependence theory as a guiding theoretical construct (Ahmad & Mahmood, 2010; Barczi, 2013; Geier & Bogner, 2011; Gillies & Haynes, 2011; Igel & Urquhart, 2012; Law, 2011) because group dynamics were the focus of such studies.

Outcomes

Further validating the theory by testing CL among middle school students, Johnson, Johnson, and Roseth (2010) stated that "the basic premise of social interdependence theory is that way goals are structured determines how individuals interact, which determines outcomes" (p. 14). Established roles and norms influence the interactions and productivity of all group members. Peer interactions accounted for 33 to 45% of the variance in middle school students' achievement (Johnson et al., 2010). Peer influence is evident as a contributing factor to student behavior. Such outcomes are expected when there is "positive interdependence, individual

accountability, promotive interaction, appropriate use of social skills, and group processing" (Johnson et al., 2010, p. 14). In the field of education, procedures for cooperative formal, informal, and base groups have been developed from social interdependence theory and widely used (Johnson & Johnson, 2009). The components of social interdependence theory are present in literature that presents the benefits of cooperative learning experiences for students.

Expectancy Value Theory

This theory was developed to explain student achievement and individual course choices (Wigfield & Eccles, 2000). Student motivation is influenced by teacher-student relationships in addition to peer relationships and individual values (Fan, 2011). Student motivation also can be connected to adult-learning motivation (Gorges & Kandler, 2012). This theoretical model includes two components, as indicated by Wigfield (1994). First, a learner's expectancy of success refers to beliefs about one's own abilities and chances for success (Wigfield, 1994). Learners who believe that success is attainable for a specific task are more likely to execute the task. Second, value refers to the amount of importance a learner places on the task (Wigfield, 1994). Learners who place a high level of importance on a task are more likely to execute the task. In an interview by Bembenutty (2012), Wigfield also referred to the components of expectancy value theory as interest value, attainment value, and utility value. Interest value is the enjoyment one gains from a particular activity (Bembenutty, 2012). Attainment value is the importance one places on the activity and utility value is the usefulness of the activity (Bembenutty, 2012). This theory also relates to the motivation related to personal choice. Wigfield-and Eccles (2000) argued that "Individuals' choice, persistence, and performance can be explained by their beliefs about how well they will do on the activity and the extent to which they value the activity" (p. 68).

Wigfield and Eccles (2000) include two fundamental questions within expectancy-value theory: “Can I do the task?” and “Do I want to do the task?” These questions are appropriate for both student and teacher motivation (Wigfield & Eccles, 2000). If a teacher feels confident in his or her abilities to accomplish a task, task completion is greater (Wigfield & Eccles, 2000). Likewise, if a teacher is confident that a student is able to accomplish a task, the likelihood is greater that the teacher will assign the task. Both teacher and student interest are contributing factors to the implementation of teaching practices and assignment of student learning activities (Wigfield & Eccles, 2000). Expectancy-value models have acted as a strong predictor of motivation for participation in a variety of achievement domains (Bembenutty, 2012). Beliefs and values embedded into the components of the theory are influenced by socializers such as parents, teachers, and peers (Bembenutty, 2012). The components of this theory influence questioning techniques used by teachers to motivate students in addition to a teacher’s own personal motivation (Green, 2002). Barriers to cooperative learning implementation discussed later in this review are related to components of expectancy-value theory of teacher motivation.

Relationship of Multiple Theoretical Constructs to the Current Study

The current study focused on a theoretical construct related to expectancy-value theory that focuses on adult motivation. Two factors influence teacher motivation: competence and expectancy (Bandura, 1997; Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998). Competence refers to an individual’s belief in the ability to complete a task (Firestone, 2014); expectancy refers to an individual’s estimate of the probability of success with the task (Vroom, 1964).

The expectancy-value theory is related to the study because components of this theory are indicators included within the intended instrument. Abrami et al. (2004) developed the Cooperative Learning Implementation Questionnaire (CLIQ, Abrami et al., 1998) for users to

rate the contributing motivation factors from the expectancy-value theoretical construct in relation to the quality and quantity of cooperative learning implementation. Hancock (1996) determined that the three components of expectancy-value theory — likelihood of success, likelihood that the behavior will result in certain outcomes, and value placed on the outcome - directly influence a teacher's motivation to implement practice. The expectancy-value theory construct supports studies on teacher motivation and efficacy (Abrami et al., 2004; Gorges & Kandler, 2012; Ruys et al., 2010, Thoonen et al., 2013).

The expectancy of success component of expectancy-value theory relates to teacher implementation of cooperative learning strategies (Abrami et al., 2004). Perceived cost; however, has a less significant impact on implementation (Abrami et al., 2004). A high value placed on cooperative learning can develop through increased pedagogical knowledge and training on teaching skills (Ruys et al., 2010). However, Green (2002), found that value of academic tasks is an under-utilized component of the theory in educational practice. The cost of planning for cooperative learning experiences can hinder teacher implementation (Abrami et al., 2004; Ruys et al., 2010). Motivational components such as success expectancy, perceptions of value, and perceptions of cost are crucial to a teacher's decision to implement a strategy, as interest in professional learning and self-efficacy influence teaching practices (Thoonen et al., 2013). Likewise, Green (2002) mentioned that further exploration into expectancy-value theory can "enhance teachers' instructional practices and student learning outcomes" (p. 1004). Further research will add to the body of knowledge by enabling educational professionals to combat the nonuse of an accepted instructional practice with professional engagement.

Cooperative Learning

Cooperative learning is a learning experience that has several interpretations and meanings. Nattiv (1994) defined cooperative learning as "a method of instruction, which includes over 80 strategies, in which students work tougher in small teams toward a common goal" (p. 285). Abrami et al. (2004) defined cooperative learning as "an instructional strategy in which students work actively and purposefully together in small groups to enhance both their own and their teammates' learning" (p. 1). Hijazi and Al-Natour (2012) established the main purpose of cooperative learning, which is "actively involving students in the learning process: a level of student empowerment which is not possible in a lecture format" (p. 444) and noted that "Learning takes place through dialog among students in a social setting" (p. 444). Cooperative learning will also be identified using the acronym CL.

One key feature to cooperative learning includes the individual accountability of every group member to learn the material (Nattiv, 1994). Gillies (2014) referred to this as positive goal independence. Additionally, interdependence of the reward, task, instructional materials, and learners' role are included within the instructional method (Nattiv, 1994). Abrami et al. (2004) discussed key features of cooperative learning that differ from other types of group work and traditional learning :

- Students are encouraged to function interdependently, whereas students function independently in traditional learning.
- When one group member attains a goal, the likelihood of other group members attaining the goal increases.
- The degree and quality of student interaction differs from other methods of learning (p. 201).

Other key elements to cooperative learning include promotive interaction, active participation of all group members, and group processing (Gillies, 2014).

Earlier studies support the effectiveness of cooperative learning experiences for students. Researchers established that the process of discussion among students improved through student participation and practice with cooperative learning (Hijazi & Al-Natour, 2012; Nattiv, 1994; Ross, 1995). Cooperative learning improved students' skills for asking and giving help as well as enhanced the self-efficacy of student participants (Ross, 1995). Nattiv (1994) concluded that the helping behaviors associated with cooperative learning had a significant impact on student achievement. Cooperative learning has been deemed effective because it is an instructional strategy that is based on the human instinct of cooperation (Hijazi & Al-Natour, 2012). A cooperative classroom also emphasizes mediated learning, which refers to the facilitation, modeling, and coaching of learned concepts and behaviors (Hijazi & Al-Natour, 2012). Cooperative learning experiences enhance the educational process as much as the product for students (Ross, 1995).

Student Academic Benefits from Cooperative Learning Experiences

One advantage to cooperative learning experiences includes the effect that the instructional practice has on student academic achievement. Benefits are present in a variety of educational settings and academic disciplines. Academic benefits are shown through various measures of student achievement and academic growth. This review of literature includes findings from studies about the effects of cooperative learning experiences on academic achievement across various age groups and academic disciplines. Connections to cooperative learning and the problem-solving process for students further solidify cooperative learning (CL) as an effective practice. Gains in student achievement related to CL in higher learning illustrate

its benefits beyond the K-12 classroom. Comparisons of cooperative learning to independent learning and effects of cooperative learning on student achievement in higher education are also included.

Academic achievement. Academic achievement testing allows educators and school officials to measure student achievement and academic growth. The aforementioned academic achievement testing has been used in relation to cooperative learning, as numerous studies have concluded that student learning improved through cooperative learning experiences, with achievement test scores providing an indicator of improved academic achievement (Barczi, 2013; Nunnery, Chappell, & Arnold, 2013; Thurston, Christie, Murray, Tolmie, & Topping, 2010; Zakaria et al., 2013). Student achievement attributed to cooperative learning was noted in various academic disciplines and grade levels. Students who received science instruction through cooperative learning exhibited greater cognitive gains than students who received science instruction through independent learning (Thurston et al., 2010). Achievement testing in math has also indicated improvement through cooperative learning. Zakaria et al. (2013) discovered a significant difference in mean math achievement scores between students receiving cooperative learning instruction and students receiving traditional instruction. The process of cooperative learning has also contributed to student academic achievement, as results from various studies have indicated (Barczi, 2013; Nunnery, Chappell, & Arnold, 2013; Thurston et al., 2010; Zakaria et al., 2013). Key components of cooperative learning contributing to student math achievement included collaborative problem solving, discussion, and the sharing of ideas (Zakaria et al., 2013). Zakaria et al. (2013) noted that incorporating cooperative learning in the mathematics classroom would "enhance the learning of mathematics in secondary schools" (p. 100).

Cooperative learning experiences enhance student achievement in science and mathematical problem solving.

Cooperative learning experiences also positively affect fundamental academic skills such as mathematics and reading comprehension. Improvement in math problem solving was noted as more diverse solutions to math problems were present among students participating in cooperative groups (Barczi, 2013). Likewise, overall math achievement improved from instruction focused on cooperative learning (Isik & Tarim, 2009). Academic gains were inconsistent among various grade levels, as Nunnery, Chappell, and Arnold (2013) noted that math achievement gains among cooperative student groups were more significant among adolescents than primary students. Reading comprehension can also improve through student participation in cooperative learning. The fundamental skill of reading comprehension is essential for success in all academic disciplines. Students in cooperative learning groups were shown to gain more understanding of written text through the process of re-reading passages with peers and engaging in peer discussion (Law, 2011). Because of the established academic advantages afforded to students through cooperative learning, this instructional strategy is regarded as an effective practice.

A comparison to independent learning. Methods in which students work independently have been referred to as traditional learning, individualistic learning, and independent learning. For the purpose of this review the method in which students work independently will be referred to as independent learning. Independent learning tasks are commonly employed by teachers in classrooms. While many studies illustrated the benefits of CL for students (Barczi, 2013; Nunnery et al., 2013; Thurston et al., 2012), other studies (Beck & Chizhik, 2013; Ghorbani, 2012; Hsiung, 2012; Jalilifar, 2012; Wu, 2013) went so far as to

compare cooperative learning experiences to independent learning experiences. Hsiung (2012) found cooperative learning to be more effective for students than individualistic learning, as students in cooperative groups achieved higher scores on homework and unit tests than independent workers. Cooperative learning experiences also allow for differentiated instruction and are effective for a variety of learners. Ghorbani (2012) found that cooperative learning experiences benefited both gifted and struggling students in addition to students who were English language learners. Jalilifar's (2010) study supports the fact that carefully planned cooperative learning experiences enhance reading comprehension strategies for English language learners. Wu (2013) attributed the effects of mutual learning to a student's engagement in discussion with a peer possessing complementary abilities. Cooperative learning experiences vary; many strategies contribute to productive group learning. Beck and Chizhik (2013) noted that students working in pairs performed higher on exams than independent workers. Group tasks can enhance learning for student participants at a level comparable with independent learning, if not at a level that exceeds independent learning. Though not every study has definitely shown that cooperative learning is the superior educational practice, many studies have indicated that students show significant improvement as a result of cooperative learning experiences (Beck & Chizhik, 2013; Ghorbani, 2012; Hsiung, 2012; Jalilifar, 2012; Wu, 2013).

Mathematical problem solving. Problem solving skills can be fostered through cooperative learning experiences. Student discussions in groups allow students to talk about solutions to math problems (Jao, 2012). Through discussion, students gain exposure to new concepts and mathematical material by seeing and hearing their peers' solutions to problems (Jao, 2012). Additionally, student misunderstandings are clarified through cooperative work and discussion (Jao, 2012). Problem solving skills have been enhanced through cooperative learning

among various grade levels. Tarim (2009) noted that mathematical problem solving skills could be fostered through cooperative learning in a preschool setting, while cooperative middle school learners demonstrated higher problem solving achievement than independent middle school learners (Awofala, Fatade, & Ola-Oluwa, 2012). Cooperative learning experiences also contributed to enhanced mastery of mathematical content at the comprehension and application levels of knowledge (Awofala, Fatade, & Ola-Oluwa, 2012). These levels of knowledge are commensurate with critical thinking and problem solving. Cooperative learning experiences are among the many effective learning experiences that foster problem-solving skills in students.

Benefits in higher education. Cooperative learning is beneficial to students beyond the K-12 classroom. Wang (2012) found that the academic achievement in female college students was enhanced through cooperative learning experiences. The structure in which cooperative learning is used in the classroom also has an impact on student achievement in the collegiate setting. Beck and Chizhik (2013) noted that cooperative group work followed by teacher debriefing positively impacted student achievement on the final exam scores of undergraduate computer design students. Because of the collegial interactions with peers, cooperative learning experiences are also beneficial for education students and pre-service student teachers (Ahmad & Mahmood, 2010). This type of instruction creates a rich, enjoyable, interactive learning experience for education students (Ahmad & Mahmood, 2010). Cooperative learning experiences are beneficial for students of various backgrounds, ages, grade levels, and in various academic disciplines.

Student Social and Emotional Benefits from Cooperative Learning Experiences

Another advantage to cooperative learning is the effect on students' social and emotional welfare. The whole child is comprised of both academic and social and emotional needs. This

section of the review of literature examines the benefits of cooperative learning (CL) experiences on social interaction, interpersonal skills, and collaborative problem solving among students. Additionally, student attitudes toward cooperative learning experiences are discussed.

Social interaction. Cooperative learning has been shown to have an impact on students' social and emotional skills in several studies. Student participation in cooperative learning experiences led to improved social interactions. Thurston et al. (2010) concluded that cooperative learning affected students' social connectedness and improved social interactions between students. Students are more comfortable in a school in which they are connected to peers. Additionally, cooperative learning improved students' transitions from elementary to high school (Thurston et al., 2010). Improved social interactions lead to students who are comfortable in new educational settings. Cooperative learning techniques have also resulted in more in-class participation from students (Herrmann, 2013). When students are comfortable and familiar with discussion and peer interaction, they are motivated to participate (Herrmann, 2013). Tarim (2009) found that preschoolers' skills in cooperation, sharing, listening, and responsibility greatly improved through participation in cooperative learning experiences. The need to fulfill individual responsibilities to contribute to the group resulted in improved group work because every member contributed to group tasks (Tarim, 2009). Jao (2012) concluded that the use of cooperative learning produces more successful students in the multicultural classroom, improving the interactions between students of various cultural backgrounds. Established interpersonal relationships between students also remained intact and were not negatively affected by the cooperative learning experiences (Kaldi, Filippatou, & Anthopoulou, 2014).

Interpersonal skills. Interpersonal skills between students can be fostered through CL experiences. The social tone is set by the classroom teacher, as "A relatively simple intervention involving carefully chosen comments may have the potential to make an important contribution to the social text of a lesson" (Green, 2002, p. 1004). The teacher is a facilitator of effective cooperative learning experiences. Effective face-to-face collaboration between students requires proper content-related resources, relational resources, and effective coordination between group members (Oner, 2013). Equal importance is placed on the related academic content and the social interactions that occur during cooperative learning experiences. Oner (2013) also determined that coordination among group members requires three necessary dimensions.

- Mutuality is the degree to which all members could potentially contribute to the group task and make their voices heard.
- Joint attention is the notion of all group members working separately, but maintaining focus on the goals of the collective group.
- Shared task alignment refers to the degree of establishing a collaborative approach to problem solving instead of separate individual approaches (p. 15).

Oner's findings indicated that the successful face-to-face collaboration of the participants in the study that included valuable input from each group member contributed to successful completion of the group task. The dynamics of cooperative learning contribute to academic and social enhancements for students. Cooperative learning experiences also provide students with opportunities to evaluate their own work and the work of others, which contributes to increased confidence in both interpersonal and academic skills (Hijazi & Al-Natour, 2012).

Cooperative learning improves student behaviors and decreases the likelihood of interpersonal conflicts (Bilgin et al., 2012; Magnesio & Davis, 2010). The frequency of

disruptive behaviors among students decreased after six weeks of student participation in cooperative learning (Magnesio & Davis, 2010). Additionally, the frequency of positive social skills among targeted students with known behavioral issues greatly increased over the 6-week timeframe of cooperative learning implementation (Magnesio & Davis, 2010). Student behavioral problems and aggressive behaviors also decreased as students strengthened conflict resolution skills through cooperative learning, because students help each other, discuss potential solutions to problems, and reach consensus through discussion (Bilgin et al., 2012). When students work together they have the opportunity to practice solving interpersonal problems. In addition to enhancing the academic experience, cooperative learning can improve social conflict-resolution among participants. Cooperative learning experiences enhance students' interpersonal conflict-resolution skills; thus, further solidifying this instructional practice as an effective one.

Collaborative problem solving. Cooperative learning can have an impact on students' collaborative problem-solving skills. Collaborative tasks, completed by multiple participants, contributed to improved collaborative problem solving skills, though not among advanced learners (Sears & Reagin, 2013). Cooperative learning experiences also contributed to students' positive feelings toward collaborating with fellow group members (Mehta & Kulshrestha, 2014). Students enjoy collaborating with other students and solving authentic tasks with competent peers.

Student attitudes toward cooperative learning. Attitudes toward a learning experience are crucial to student participation and engagement. The effectiveness of cooperative learning experiences is also determined through student attitudes (Farzaneh & Nejadansai, 2014; Law, 2011; Magnesio & Davis, 2010; Zakaria et al., 2013). Once attitudes are formed, they can shape

the way students think and learn (Farzaneh & Nejadansai, 2014). Students have much to gain from cooperative learning experiences, including learning, socialization, opportunities for interaction, opportunities to listen, the sharing of ideas, and problem-solving experiences (Gillies, 2014). Positive attitudes toward cooperative learning and group work attributed to student engagement. In small groups, students were more alert, focused, and engaged in assigned tasks (Goran & Braude, 2007). Through cooperative group work, students developed necessary skills for group work and developed positive attitudes toward the work (Kaldi et al., 2014). Students also possessed a positive attitude toward cooperative learning because "When students work in groups they feel that they can depend on others for help and this gives them the confidence to solve problems and enjoy learning" (Farzaneh & Najadansai, 2014, p. 291). Students have indicated strong positive perceptions and efficacy of cooperative learning, as receiving explanations from others improved students' self-retention of content knowledge (Zakaria et al., 2013). Cooperative learning also promoted the learning of all members of the group (Zakaria et al., 2013). Learners from diverse backgrounds benefited from cooperative learning because it offered active learning experiences, equal access to learning experiences, and an increased social experience for all students (Alexander & van Wyk, 2014). Participation in cooperative learning also contributed to positive self-esteem in students (Magnesio & Davis, 2010). Overall student satisfaction with cooperative learning relates to student satisfaction with the quality of education provided by the teacher as well. Law (2011) concluded that students who participated in a jigsaw cooperative learning group were "more likely to agree that their teachers provided them with challenging tasks, stimulated their curiosity, linked their learning activities to real-life experience, granted them autonomy and recognized their efforts" (p. 416).

Cooperative learning strategies can create an enjoyable, meaningful, and challenging learning experience for the student (Farzaneh & Nejadansai, 2014; Law, 2011; Zakaria et al., 2013).

There are known benefits to students' social and emotional well-being through participation in cooperative learning experiences. Interactions between students improved from the experience of cooperative learning (Herrmann, 2013). Interpersonal skills were developed through the interactions included within cooperative learning experiences (Oner, 2013). Because interpersonal skills and engagement improved, student behaviors also improved (Magnesio & Davis, 2010). Conflict resolution skills were developed and practiced through cooperative learning (Bilgin et al., 2012). Cooperative learning experiences have also contributed to positive feelings toward school and the learning process (Law, 2011). Due to the known academic and social benefits, facilitating cooperative learning experiences is regarded as an effective teaching practice (Hennessey & Dionigi, 2013). There is also additional research on current teacher implementation of cooperative learning classroom experiences and present barriers that inhibit implementation of the instructional practice (Gillies & Haynes, 2011; Igel & Urquhart, 2012; Thanh, 2011).

Barriers to Teacher Implementation of Cooperative Learning

The teacher plays a critical role in the implementation and facilitation of cooperative learning experiences in the classroom. Teachers play a key role in promoting interactional behaviors that challenge student thinking and scaffold understanding (Gillies & Haynes, 2011). The teacher's role in implementing cooperative learning differs from traditional learning because the learning objectives are set in conjunction with the student group members (Abrami et al., 2004). Though widely known as an effective teaching strategy, cooperative learning has been reported as rarely used among teachers in both K-12 and higher education classrooms, as

discussed in the following section. Cooperative learning experiences benefit students both socially and academically; yet, many teachers still struggle with implementing cooperative learning experiences (Gillies & Boyle, 2009). Many empirical studies have examined contributing factors to the problematic lack of teacher motivation to implement cooperative learning (CL). Specifically, these factors include pedagogical barriers, student-related barriers, and school-related barriers.

Pedagogical barriers. Many teacher participants in a variety of studies reported pedagogical issues with implementation of cooperative learning. One fundamental barrier to teacher implementation of CL is the teacher's lack of knowledge about CL principles, components, and strategies (Alexander & van Wyk, 2014; Junko & Howard, 2010). Junko and Howard (2010) believe nonuse of cooperative learning strategies in the classroom can also stem from both poor past experience and lack of knowledge of CL . Teachers often seek information on group structures to maximize learning, group composition, and the types of tasks that are engaging to students (Gillies, 2014).

Some barriers to implementing cooperative learning teaching strategies involve teacher planning and preparation. Though teachers maintain positive attitudes toward CL, many teachers have difficulties with implementation of CL strategies due to undesired student responses and the complexity of planning for appropriate group tasks (Gillies & Boyle, 2010). Although teachers agree with the benefits of cooperative learning, they have difficulties sustaining the practice over time (Gillies & Boyle, 2011). Igel and Urquhart (2012) suggested that teachers often have difficulties planning for cooperative goal structures while maintaining individual student accountability.

Nunnery et al (2013), in their study with math teachers, noted that proper implementation of cooperative learning was an issue because a significant portion of the math teachers claimed to use cooperative learning, yet implementation of cooperative learning consisted of unstructured group work. Additionally, teachers reported that contributing factors to the difficulties of implementing cooperative learning included extensive teacher planning, preparation needed for students to properly work in groups, and the burden for teachers to explicitly state expectations (Gillies & Boyle, 2011). The need for proper training and professional development may contribute to a lack of implementation despite ideal conditions and opportunities for cooperative learning (Meza-Cascante, Suarez-Valdes-Ayala, & Schmidt-Quesada, 2015). Significant barriers to teacher implementation of cooperative learning include teacher planning, preparation, and training. Further research is needed to determine barriers, motivational factors, and inconsistencies in CL implementation.

Student barriers. Student discipline was another common theme in the research on barriers to cooperative learning implementation. With primary students, the age of the students is a barrier because teachers are confronted with student discipline may not be comfortable with planning cooperative learning experiences for which students are unable to remain on task (Hennessey & Dionigi, 2013). Additionally, Hennessey and Dionigi (2013) concluded that teachers may be hesitant to implement cooperative learning strategies because they may possess limited knowledge of cooperative learning teaching techniques. Students who engage in cooperative learning experiences can experience difficulties paying attention during the initial stages of the experience (Hsiung, 2012). This issue requires substantial patience from the teacher to continue planning cooperative learning experiences despite initial difficulties (Hsiung, 2012). Some teachers are hesitant to implement cooperative learning because of the risk of

student disruptions. Apprehension over student conduct during cooperative learning is a barrier to teacher implementation.

Student engagement in cooperative learning experiences is also a barrier to teacher implementation. Teachers need to be aware that adopting a cooperative learning structure does not guarantee deep student engagement, and CL instruction requires deep planning and consideration of student learning styles. Teachers must also plan instruction with respect to classroom culture, learning objectives, familiarization of students with CL tasks, and the process of strategically grouping students (Lin, 2013). Proper implementation of cooperative learning experiences requires that the teacher invest time in communicating the intention and purpose of cooperative learning experiences (Herrmann, 2013). Cooperative learning can "compensate the personal and social development in the conditions of education and instruction" (Jablonsky, 2010, p. 246), but such experiences require attention to student engagement. A teacher's expectancy of success can contribute to cooperative learning implementation, because teachers expect challenges with engaging students in CL (Wigfield & Eccles, 2000).

School culture. A school's culture for continued learning, professional development, and best practices contributes to teacher implementation of CL methods (Pescarmona, 2011, Slavin, 2013). Cooperative learning implementation requires effort in planning, consistent professional development, and willingness among educators to implement the practice. The school culture is influenced by the attitudes, values and priorities of both teachers and administrators. Rather than individual teacher willingness to implement cooperative learning strategies, the overall culture and organization of professional development and innovation influences the implementation of instructional strategies such as cooperative learning (Pescarmona, 2011). A strong pre-established collaborative culture among educators is

necessary for teachers to properly implement cooperative learning because "Teachers cooperating together also support pupils learning together" (Jolliffee, 2014, p. 1). A teacher's skill set also influences implementation; Hijazi and Al-Natour (2012) found that a teacher's educational level affected their attitudes toward cooperative learning, with the most positive attitudes occurring among teachers with fewer years of teaching experience. Students also influence a school's culture in regards to implementing instructional strategies. Factors such as a student's age or grade in school can have an effect on teacher performance with and attitudes toward cooperative learning (Kyndt et al., 2009). Part of the intent of the current study was to examine differences in schools' settings and cultures in regards to cooperative learning implementation by seeking differences in attitudes and implementation of CL among various groups of teachers.

Other school-related barriers. Though cooperative learning has been shown to be effective, school-related barriers to teacher implementation still exist. Barriers include teacher planning, student behavior, student engagement, and teacher background. Additionally, classroom-related issues inhibit teacher implementation of cooperative learning. Class size, curriculum coverage, and student workload divisions are known barriers to CL implementation (Thanh, 2011). Class size impacts cooperative learning because it can either aid or hinder the size of the groups involved. Curriculum coverage is an issue because teachers are apprehensive about engaging in cooperative learning instruction because they fear that such experiences may slow the pace of teaching. Additionally, fear of inequitable sharing of the student workload and lack of materials were shared as barriers to effective cooperative learning implementation (Thanh, 2011).

The lack of implementation of a well-known effective instructional strategy raises questions regarding barriers to implementation. Barriers exist within teacher attitudes, schools' cultures, and student-related issues. The current study sought to determine differences among educators in various educational settings in attitudes toward CL and implementation, using the components of expectancy-value theory (expectancy of success, perceived value, perceived cost) as assessment criteria.

Gaps in Current Literature

Limitations and suggestions for further research were discussed in each of the studies reviewed. Such noted limitations are important because limitations drive further research into teacher motivation, cooperative learning, and cooperative learning implementation. Such research is important because continuous training and professional development is needed for teachers to be capable and willing to incorporate cooperative learning experiences for students (Zakaria et al., 2013). Research into what motivates teachers to implement or not implement a valuable teaching strategy will add to the body of research and better inform educators. Furthermore, research on differences among teachers in various grade level bands (elelementary, middle, secondary) in perceptions of and professional practices for cooperative learning will add to the body of research by allowing elementary, middle, and secondary school officials to examine professional cultures and practices within their own schools.

Some noted limitations in the literature review concerned teacher motivation to implement certain teaching practices. Teachers influence and motivate students toward participating in cooperative learning experiences; therefore, it is important to understand what motivates teachers to implement cooperative learning into their classrooms (Geier & Bogner, 2011). Surian and Damini (2014) examined significant challenges for teachers in implementing

cooperative learning in the classroom and stated that a limited amount of research exists that examines the difficulties that teachers face with cooperative learning. Furthermore, additional research in student and teacher attitudes toward cooperative learning is needed in the formal educational setting to enhance educational practices and methodologies (Surian & Damini, 2014). There is a need to further examine the acceptance of cooperative learning experiences by both students and teachers (Jablonsky, 2010). Law (2011) suggested a need for further investigation of how teachers with different experiences and knowledge adapt to and implement research-based strategies of cooperative learning and implement such strategies. Further research on motivational factors to cooperative learning implementation will add to the body of knowledge on teacher motivation and implementation by addressing barriers and influencing the development of strategies to motivate teachers to implement cooperative learning.

Limitations and suggestions in the literature also included teacher-related factors to both the implementation and non-implementation of cooperative learning. Ruys et al. (2011) suggested that further research is needed to further explore contextual factors associated with cooperative learning implementation at the student, classroom, and school level. Farzaneh and Nejadansari (2014) discussed the importance of proper implementation of cooperative learning by the teacher, because successful implementation of cooperative learning "requires structurally planned teacher and learning activities" (p. 291). Motivational factors that influence teacher implementation of CL strategies must be examined further (Farzaneh & Nejadansari, 2014). Several contributing factors to the lack of cooperative learning implementation have been discussed, some of which are within the control of the teacher and some are not. Beck and Chizhik (2013) stated that further studies would be useful to focus on instructor-related factors to the implementation of cooperative learning activities. Gorges and Kandler (2012) suggested

further research into individual motivational patterns and their relation to learning opportunities that promote adult learning and professional development. The current study related to this suggestion because the aforementioned motivational patterns were explored.

Researchers also found differences in teacher implementation of cooperative learning experiences between various groups of teachers. A difference in the perceived value of group learning between elementary and secondary teachers was evident (Krecic & Grmek, 2007). Additionally, Krecic and Grmek (2007) found that the teachers who favored group learning the most were those with less than six years of teaching experience. Because of differences in perceptions of cooperative learning among teachers varying in experience, grade level taught, and background, further research is needed to examine additional differences (Krecic & Grmek, 2007).

Limitations and suggestions also included the need to explore larger samples and a wider variety of teacher participants. Mehta and Kulshrestha (2014) suggested that research on cooperative learning should be expanded to various academic disciplines and settings. Broadening the research on cooperative learning implementation to larger samples of teachers will add to the body of knowledge by establishing motivational factors, barriers to implementation, and differences in implementation (Ahmad & Mahmood, 2010). Thanh (2011) suggested further research into the disjunction between expectations for cooperative learning implementation and the overall culture of a variety of schools. The suggestion by Thanh (2011) relates to suggestions to explore implementation of cooperative learning among a variety of teachers because culture varies from school to school and from age group to age group.

Further research was suggested regarding the varied backgrounds of teacher participants. Barczi (2013) suggested that research on cooperative learning effectiveness should be extended

into other groups of students beyond elementary school. Though the components of expectancy value theory (expectancy of success, value, cost) are important to adult-motivation, there are many other contributing factors to adult motivation and learning (Gorges & Kandler, 2012). Therefore, additional research into adult motivational patterns and school-related adult learning experiences is needed (Gorges & Kandler, 2012). Because cooperative learning is not always properly implemented by teachers, further research on teacher orientation and professional development on teachers of different backgrounds and teaching assignments (elementary, middle, secondary) is necessary (Ebrahim, 2011). Ahmad and Mahmood (2010) noted that teachers hesitate to implement cooperative learning because of fear of losing control of the class, lack of teacher self-confidence, time constraints, difficulties with alternative assessments, and fear of unequal participation of students. Research using larger samples of teachers in various educational settings will establish significant relationships between teacher motivation and cooperative learning implementation (Ahmad & Mahmood, 2010). Extending the research on teacher attitudes toward cooperative learning to more diverse groups of teachers in various educational fields will also aid in establishing a relationship between teacher motivation and CL implementation (Hijazi & Al_Natour, 2012). The lack of implementation of CL at the elementary level prompted Hennessey and Dionigi (2013) to suggest further investigation into the differences in CL implementation among various groups of teachers. The broadening of research on cooperative learning implementation will establish significant differences in attitudes toward CL instruction and teacher implementation, which will lead to further professional development to enhance teaching practices.

The suggestions for further research aided this review of literature by providing guidance for future research that would move the body of knowledge on cooperative learning

implementation forward. Suggestions included exploring contributing factors to teacher motivation, investigating other teacher-related factors, testing larger and more diverse samples of teachers, and extending research to various grade levels taught, experience levels, and backgrounds. Apparent gaps in the literature on cooperative learning implementation should also provide guidance for further research.

Summary

Through analysis of the findings from numerous studies on teacher implementation of cooperative learning, gaps and opportunities for further research were found. One gap involves the continued presence of teachers who choose not to use cooperative learning, even though CL has shown to be a highly effective teaching strategy. "Cooperative learning promotes academic achievement and socialization, yet many teachers struggle with implementing this in their class" (Gillies & Boyle, 2009, p. 933). Another apparent gap in the literature is a lack of empirical research investigating the implementation of cooperative learning across academic disciplines and grade levels (Bilgin et al., 2012; Ebrahim, 2011; Gillies & Haynes, 2011; Hennessey & Dionigi, 2013; Jalilifar, 2010; Law, 2011; Wu, 2013). Very little research exists on cooperative learning curriculum in all fields (Jalilifar, 2010). The researcher also noted only a small amount of research on the challenges faced by teachers when implementing cooperative learning strategies, specifically regarding the difficulties that teachers encounter when forming and facilitating cooperative student learning communities (Surian and Damini, 2014).

Based on the research on the effectiveness of cooperative learning and the mixed results of research on cooperative learning implementation, the researcher aimed to study the differences in perceptions of cooperative learning implementation among three groups of teachers: elementary, middle, and secondary. This research was supported by Hennessey and

Dionigi (2013), who suggested expanding research on cooperative learning implementation to a more diverse population of teachers and to examine implementation across various age groups being taught. The population in the current study was diverse in terms of gender, age, experience level, and the age group taught. The settings are also varied, as invited school districts varied in size and demographics. The current study also supported the suggestion of Mehta and Kulshrestha (2014) to expand research on cooperative learning to other academic disciplines and settings. The participants in the current study were elementary, middle, and secondary teachers, some of whom taught all subjects in a self-contained setting, while others taught one specific subject. Further investigation into influential factors into implementation versus non-implementation of cooperative learning at the student, classroom, and school level, as Ruys et al. (2011) suggested, was executed in the current study. The instrument used for the current study determined influential factors regarding implementation versus non-implementation at the school level by measuring teacher perceptions and professional practices. Hijazi and Al-Natour (2012) suggested broadening research on cooperative learning implementation to other educational settings and fields. Because there were teacher participants from multiple schools in the current study, the research was broadened beyond the setting used by Hijazi and Al-Natour (2012). The current study was designed to compare differences among cooperative learning implementation and perceptions among various educational settings, grade levels, and schools. The researcher aimed to determine whether a difference existed in the expectation of success, perceived value, and perceived cost toward cooperative learning implementation while also examining potential differences in the quantity and quality of implementation among elementary, middle school, and secondary teachers.

Educators seek instructional strategies that are grounded in sound research that will enhance the learning experience for their students. Cooperative learning is a strategy that has been widely known in the field of education for decades. Influenced by Bandura's (1971) social cognitive theory and social interdependence theory (Deutsch, 1949), cooperative learning has been shown to be effective in fostering both academic and social skills for students. Academic benefits to cooperative learning include improved math achievement (Barczi, 2013; Nunnery et al., 2013; Zakaria et al., 2013), increased problem solving (Jao, 2012; Zakaria et al., 2013), improved reading comprehension (Law, 2011), and gains in assessment scores (Beck & Chizhik, 2013). Social benefits include increased helping behaviors among students (Nattiv, 1994), improved social interaction (Thurston et al., 2010), improved conflict resolution skills (Bilgin et al., 2012), and engagement in the learning experience (Herrmann, 2013; Igel & Urquhart, 2012). Because it is accepted in the field of education as an effective pedagogical strategy, cooperative learning is expected to be widely implemented by teachers.

However, studies have indicated that there are numerous barriers to implementation of cooperative learning. Barriers include weak school cultures that do not promote professional development and ongoing learning; pedagogical barriers such as limited teacher knowledge of cooperative learning; student barriers such as classroom management and engagement concerns from teachers regarding cooperative learning; and other factors such as class size and available resources. It was the researcher's hope that expanding the research on potential barriers to cooperative learning implementation among diverse populations of teachers through the use of a causal comparative study would further inform scholars, educators, and school leaders and initiate improvements in both professional development and pedagogy.

CHAPTER THREE: METHODS

Design

This study will use causal comparative research design, a design which is used to attempt an understanding of cause and effect (Warner, 2013). The researcher aims to determine whether multiple groups differed in response to multiple dependent variables. A key feature of causal-comparative research is the presence of multiple categories within the independent variable (Gall et al., 2007). The independent variable is the grade level with which the teacher worked, elementary, middle, or secondary. This variable is the perceived cause (Gall et al., 2007). The dependent variables are a teacher's perceptions of cooperative learning in the classroom and implementation of cooperative learning, identified as expectancy of success, perceived value, perceived cost, and professional practices for implementation. These variables are the perceived effects (Gall et al., 2007). The Cooperative Learning Implementation Questionnaire (CLIQ, Abrami et al., 1998) was the instrument used to conduct the study.

Research Question

The following research question was proposed:

RQ1: Is there a difference between the overall *perceptions of cooperative learning* and *current teaching practices* of elementary, middle, and secondary teachers?

Null Hypothesis

The following null hypothesis was proposed:

H_o1: The overall scores of *perception of cooperative learning, expectancy of success, perceived value, perceived cost,* and *current teaching practices* do not differ significantly between elementary, middle, and secondary school teachers.

Participants and Setting

The participants consisted of a convenience sample of elementary, middle, and secondary teachers in seven public school districts in central Ohio. Elementary teachers were participants who teach grades kindergarten through fifth grade. Middle school teachers were participants who teach grades sixth through eighth. Secondary teachers were participants who teach grades ninth through twelfth. The schools included in the study were from urban, rural, and suburban settings. School district #1 was an urban district with a student enrollment of approximately 2,200 students. Within this district, teachers from three elementary schools, one middle school, and one high school were invited to participate. School district #2 was a suburban district with a student enrollment of approximately 4,000 students. With the district, teachers from three elementary schools, one middle school, and one high school were invited to participate. School district #3 was a suburban school district with a population of approximately 10,000 students. Within the district, teachers from 16 elementary schools, four middle schools, and three high schools were invited to participate. School district #4 was a rural school district comprised of approximately 3,700 students in four elementary schools, two middle schools, one freshman school, and one high school. School district #5 was a suburban school district comprised of approximately 5,200 students in five elementary schools, two middle schools, and one high school. School district #6 was a rural school district comprised of approximately 3,300 students in four elementary schools, one middle school, and one high school. School district #7 was a suburban school district comprised of approximately 3,900 students in three elementary schools, one middle school, and one high school.

To achieve a statistical power of 0.70, at an alpha of 0.05, and with a medium effect size, a minimum of 126 participants was needed, with 42 participants per group (Warner, 2013). A

power of 0.70 was chosen. A total of 149 teachers participated in this study, exceeding the minimum requirement.

Participant Demographics

The descriptive statistics for the participants' demographics are listed in Table 1. Thirty-two (21%) of the participants were male and 119 (79%) were female. Only two races were represented in the study, with 149 (99%) Caucasian participants and two (1%) African American participants.

Table 1

Descriptive Statistics for Participant Demographics

Demographics	*n*	%
Male	32	21
Female	119	79
No Gender Selected	1	<1
African American	2	1
Asian	0	0
Caucasian	149	99
Latino	0	0
Multiracial	0	0
No Race Selected	1	<1

Participants' Grade Level Bands

The descriptive statistics for the participants' grade level bands (elementary, middle, secondary) are listed in Table 2. Elementary teachers were those teaching grades K-5. Middle school teachers were those teaching grades 6-8. Secondary teachers were those teaching grades 9-12. The largest participant grade band was Elementary with 60 (40%) participants selecting this grade band in the demographics section of the questionnaire. Middle was the smallest participant grade band, with 44 (29%) participants.

Table 2

Descriptive Statistics for Participants' Grade Bands

Grade Bands	*n*	%
Elementary	60	40
Middle	44	29
Secondary	45	31

Participants' Years of Teaching Experience

Participants were also asked about their years of teaching experience. The descriptive statistics for these responses are listed in Table 3. The years of participants' teaching experience varied, with six (4%) of the participants with 0-1 year of teaching experience, 13 (9%) with 2-5 years of teaching experience, 69 (45%) with 6-15 years teaching experience, 52 (34%) with 16-24 years teaching experience, and 12 (8%) with 25 or more years teaching experience.

Table 3

Descriptive Statistics for Participants' Years of Teaching Experience

Experience	*n*	%
0-1 Year	6	4
2-5 Years	13	9
6-15 Years	69	45
16-24 Years	52	34
25 or more Years	12	8

Participants' Educational Levels

Finally, participants were asked about their highest degree completed. The descriptive statistics for these responses are listed in Table 4. Most of the participants (n = 132; 87%) possess a Master's degree, while 17 (11%) participants possess a Bachelor's degree and three (2%) participants possess a Doctorate.

Table 4

Descriptive Statistics for Participants' Highest Degree Completed

Degree	*n*	%
Bachelor's Degree	17	11
Master's Degree	132	87
Doctorate	3	2

Instrumentation

The instrument used for this study was the Cooperative Learning Implementation Questionnaire (CLIQ, Abrami et al., 1998; see Appendix F). Written permission for free use of this instrument was granted by the author, Philip Abrami (See Appendix C). It was administered through the Survey Monkey web platform. Completion of the instrument was expected to take approximately 30 minutes for participants (Ruys et al., 2010). The purpose of this instrument was to determine contributing factors to the implementation and non-implementation of cooperative learning (Abrami et al., 1998). The developers hoped to gain insight into classroom practices in order to improve the quality of classroom instruction (Abrami et al., 1998). This questionnaire was originally used in a study by Abrami et al. (2004) to introduce the instrument and determine the perceptions that best predicted implementation of cooperative learning. In the same study Abrami et al. (2004) also determined if the components of expectancy value theory could be used as predictive components to cooperative learning implementation. Their study included a diverse population of teachers ranging from primary through secondary education. In another study, Ruys et al., (2011) combined this instrument with two others to examine relationships in factors for motivating student teachers. In both studies, further research was suggested for specific areas of specialization, such as grade level or subject (Abrami et al., 2004; Ruys et al., 2010).

Constructs from the Cooperative Learning Implementation Questionnaire (Abrami et al., 1998) are consistent with expectancy value theory (Vroom, 1964; Wigfield & Eccles, 2000) in its terminology, with subscales such as expectancy of success, perceived value, and perceived cost. Expectancy items measure teacher perceptions of the relationship between the use of cooperative learning and the desired outcomes (Abrami et al, 2004). A participant will have a high score in the expectancy of success subscale if cooperative learning is viewed with confidence and efficacy. "Value items assessed the degree to which teachers perceived the innovation or its associated outcomes as worthwhile" (Abrami et al., 2004, p. 203). A participant will have a high score in the value subscale if cooperative learning is viewed as important. Cost items measured the perceived demands on teachers for implementation of cooperative learning (Abrami et al., 2004). A participant will have a high score in the perceived cost subscale if cooperative learning is viewed as risky or difficult (Abrami et al., 2004). Internal reliability of the CLIQ instrument was measured in the most recent study by Ruys et al. (2011) using Cronbach's alpha. The alpha for the composite score was 0.80, expectance of success was 0.74, perceived value was 0.86, and perceived cost was 0.87. Chronbach's alpha levels fall within the reliable range for most sections of the instrument (Rovai, Baker, & Ponton, 2013).

The Cooperative Learning Implementation Questionnaire implements a 5-point Likert scale for participants to rate their perceptions of cooperative learning and professional practices for implementation (CLIQ, Abrami et al., 1998). The response scale for Professional Views on Coopeartive learning includes *Strongly Disagree* (1), *Disagree* (2), *Undecided* (3), *Agree* (4), and *Strongly Agree* (5). The descriptor of *undecided* is present for participants with limited to no knowledge of CL to select and will eliminate the probability of inaccurate bias toward use or nonuse of CL (Gall et al., 2007). The response scale for Current Teacher Practices includes *Not*

at all (1), *Slightly* (2), *Somewhat* (3), *Largely* (4), and *Entirely* (4). In the original development of the instrument, Abrami et al. (2010) treated the data from the Likert scale as interval because "the intervals did not dramatically affect Type I or Type II errors of parametric tests" (p. 204). Greater composite and subscale scores indicate more positive perceptions and greater implementation. The instrument contains 57 questions and the composite scores, which are a combination of subscale scores, range from 57 to 285. Scores for the 20 expectancy of success questions range from 20 to 100. Scores for the 21 perceived value questions range from 21 to 105. Scores for the seven perceived cost questions range from 7 to 35. Scores for the nine current teaching practices questions range from 9 to 45.

The Cooperative Learning Implementation Questionnaire contains a 5-point Likert scale with two sections. First, participants will rate professional views on cooperative learning. Responses range from 1 (strongly disagree) to 5 (strongly agree). Second, participants will rate current professional practices in terms of cooperative learning. Responses range from 1 (not at all) to 5 (entirely). See Appendix F for items from the Cooperative Learning Implementation Questionnaire. Respondents also answered some questions about teaching experience and demographics. Statements from the first section are divided by intended constructs, which included expectancy of success, perceived value, and perceived cost. Likert scale items are coded to one single construct (Abrami et al., 2004). Composite scores range from 57, which indicate low implementation and perception of cooperative learning, to 285, which indicate high implementation and perception of cooperative learning. Each item on the questionnaire is directly linked to a component of expectancy value theory: expectancy of success, perceived value, and perceived cost. Expectancy of success scores range from 20, which indicate low perception, to 100, which indicate a higher perception. A high perception by the respondent

indicates a high level of influence on cooperative learning implementation attributed to the expectation that the instructional practice will be successful. Perceived value scores range from 21, which indicate low perception, to 105, which indicate high perception. A high perception by the respondent indicates a high level of influence on cooperative learning implementation attributed to a perception that the instructional strategy is important and has value. Perceived cost scores range from 7, which indicate low perception, to 35, which indicate high perception. A high perception by the respondent indicates a high level of influence on cooperative learning implementation attributed to a perception that the instructional strategy contains an amount of risk. Finally, professional practice scores range from 9, which indicate low implementation, to 45, which indicate high implementation. See Appendix G for the original means and standard deviations for the instrument. The researcher scored and organized responses according to both subscale and dependent variable categories while entering data into a SPSS spreadsheet.

Within the Survey Monkey web platform, participants received instructions to complete the items from the instrument by pointing and clicking on one of five bubbles for each item. See Appendix E for instructions. See Appendix D for an image of the instrument on the Survey Monkey web platform.

Procedures

The researcher began the process by submitting a research proposal to the Institutional Review Board (IRB). The proposal included sampling details, communications, procedures, and data analysis. See Appendix A for IRB approval. Upon IRB approval, the researcher contacted superintendents of seven rural, suburban, and urban school districts in central Ohio to discuss the intention of the study and request permission to contact teachers. Contact information for district superintendents came from the Ohio Department of Education (ODE). The researcher kept a

communications log to indicate superintendent contact information and approval status. See Appendix H for the communications log. Upon receiving the district superintendents' approval, the researcher utilized school district websites to access e-mail addresses and created an e-mail distribution list entitled Cooperative Learning Implementation Questionnaire Participants. The researcher sent an e-mail to potential participants including a welcome letter and hyperlink to the Cooperative Learning Implementation Questionnaire through the Survey Monkey website platform. The letter included a brief message outlining the intent and details of the study. Additionally, the researcher informed the participants that they have the option to not participate in the study. The researcher also expressed to participants that identities will be protected and individual responses will not be shared with district superintendents. See Appendix A for the welcome letter and hyperlink to the instrument. An initial invitation was sent on January 29, 2016 with a deadline of April 30, 2016. Additional follow-up e-mails were sent to participants on Feburary 15, 2016; March 1, 2016; March 15, 2016; April 1, 2016; and April 15, 2016. Responses slowly came in, as the researcher requested changes to IRB protocol twice to extend follow-up email dates and include additional school districts.

Participants opened the link to the Cooperative Learning Implementation Questionnaire from the e-mail, which directed them to the Survey Monkey web platform. The survey began with an informed consent explaining the nature of the study and the option to discontinue participation will be presented. Participants received directions to make a selection for each statement by clicking on a circle to align with the self-reported rating on the Likert scale. See Appendix E for an image of the online instrument. Upon completion of all items, participants were then directed to complete and submit the questionnaire. Data were stored in Survey Monkey for the researcher's retrieval.

Data from Survey Monkey were imported to an Excel spreadsheet. Participant identifying information was eliminated and replaced with an assigned number for the purposes of organization and data retrieval. The Excel spreadsheet included archived anonymous teacher data with disaggregating data based on gender, years of experience, highest degree completed, grade level range taught, and CLIQ responses with respect to subscales (expectancy, value, cost, current teaching practices). Excel data were imported into SPSS for statistical analysis.

Data Analysis

The research question and hypothesis indicate a need to find a difference between mean perceptions of cooperative learning scores (dependent variable) among three groups of participants (independent variables). The dependent variable of perceptions of cooperative learning scores was divided into three subscales, expectancy of success, perceived value, and perceived cost. Additionally, a second dependent variable, current teaching practices scores, was compared between each of the three groups. The researcher used SPSS software to analyze those data. Initial descriptive statistics including groups means and standards deviations were provided (Gall et al., 2007).

Data screening was conducted prior to analysis. Incomplete submissions, especially questionnaires missing a response for current use of CL, were eliminated from statistical testing and data analysis because incomplete information would provide inconsistent data and skew results. Boxplots were created to test for extreme outliers. Extreme outliers were eliminated from statistical testing. Kolmogorov-Smirnov was used to test the assumption of normality of group means. To test the assumption of linearity between each pair of dependent variables, a scatterplot matrix for each group within the independent variable was created. Box's M test was used to test homogeneity of covariance. Pillai's trace was used as a robust correction to the

violation of homogeneity (Warner, 2013). The assumption of independence was met because participants were randomly sampled and scores for one participant were independent from the scores of any other participants. Finally, Pearson's product-moment correlation was used to determine associations between variables.

Using the Bonferroni correction, the significance level was established at $p < .05$ because there was one null hypothesis (Rovai et al., 2013). This significance level is used to reject the null hypotheses (Warner, 2013). The Bonferroni correction is a conservative approach to reduce the chance of a Type I error (Warner, 2013). Effect size was determined using a partial Eta squared statistic. The statistical testing will be used to determine if there was a statistically significant difference in scores on the CLIQ instrument between three groups of participants. The mean cooperative learning scores for each group (elementary, middle, and secondary) were analyzed and compared for each section of the instrument (expectancy of success, perceived value, perceived cost, and professional practices for implementation). The groups of teachers are the perceived cause and the scores for each category of the CLIQ instrument are the perceived effect.

A multivariate analysis of variance (MANOVA) was chosen for inferential data analysis and statistical testing for this study. This technique has been determined useful when "determining whether groups differ on more than one dependent variable" (Gall et al., p. 321). The research question was tested using a between subjects multivariate analysis of variance (MANOVA). MANOVA was appropriate because the researcher wanted to compare the means of three or more groups on multiple dependent variables (Rovai et al., 2013).

CHAPTER FOUR: FINDINGS

The purpose of this causal-comparative study was to compare perceptions and implementation of cooperative learning between three groups of teachers by determining a statistically significant difference in perceptions (expectancy of success, perceived value, perceived cost) and implementation (current teaching practices) of cooperative learning between elementary, middle, and secondary teachers.

This chapter will present results of the statistical analysis of the comparison of teachers' perceptions and implementation of cooperative learning as measured by the Cooperative Learning Implementation Questionnaire (CLIQ; Abrami et al., 1998) by teacher group (elementary, middle, secondary), including descriptive statistics, assumption testing, and statistical results.

Research Question

A causal-comparative research design and a MANOVA were used for the following research question:

RQ1: Is there a difference between the overall *perceptions of cooperative learning* and *current teaching practices* of elementary, middle, and secondary teachers?

Null Hypothesis

A causal-comparative research design and a MANOVA were used for the following hypothesis:

H_o1: The overall scores of *perception of cooperative learning, expectancy of success, perceived value, perceived cost,* and *current teaching practices* do not differ significantly between elementary, middle, and secondary school teachers.

Descriptive Statistics

The Cooperative Learning Implementation Questionnaire (CLIQ, Abrami et al., 1998) was distributed to 1,600 teachers from seven Central Ohio school districts in January 2016. By the end of April 2016, 152 participants completed the questionnaire and 149 responses were utilized for statistical analysis. Table 8 shows descriptive results for each teacher group on the dependent variables.

Table 5

Means and Standard Deviations on the Dependent Variables for the Three Groups of Teachers

		Expectancy of Success		Perceived Value		Perceived Cost		Current Teaching Practices	
Grade Band	*n*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Elementary	60	51.82	5.66	62.05	4.17	17.92	3.02	30.83	5.65
Middle	44	53.00	5.61	63.95	5.23	17.43	3.82	31.84	4.81
Secondary	45	54.33	6.65	62.76	4.39	18.33	3.36	28.76	5.20

Results

The results of this causal comparative study include initial data screening, tests of the hypothesis including assumption tests, and statistical analysis.

Initial Data Screening

Data collected from the completion of the Cooperative Learning Implementation Questionnaire (CLIQ) was screened for the presence of outliers using boxplots. Figure 1 shows the boxplots for overall CLIQ scores.

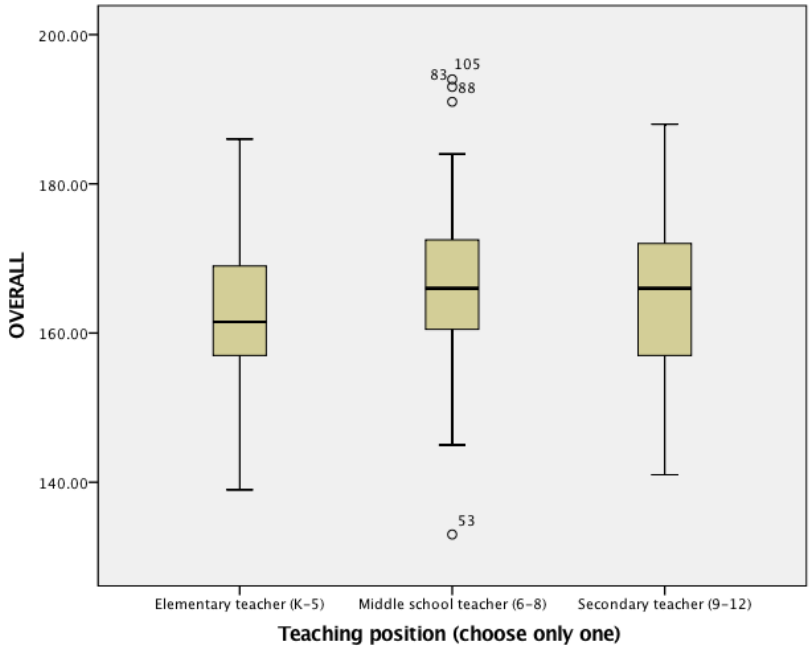

Figure 1: Boxplots for overall CLIQ scores. This figure shows extreme values for overall CLIQ items.

Figure 2 shows the boxplots for *expectancy of success* scores.

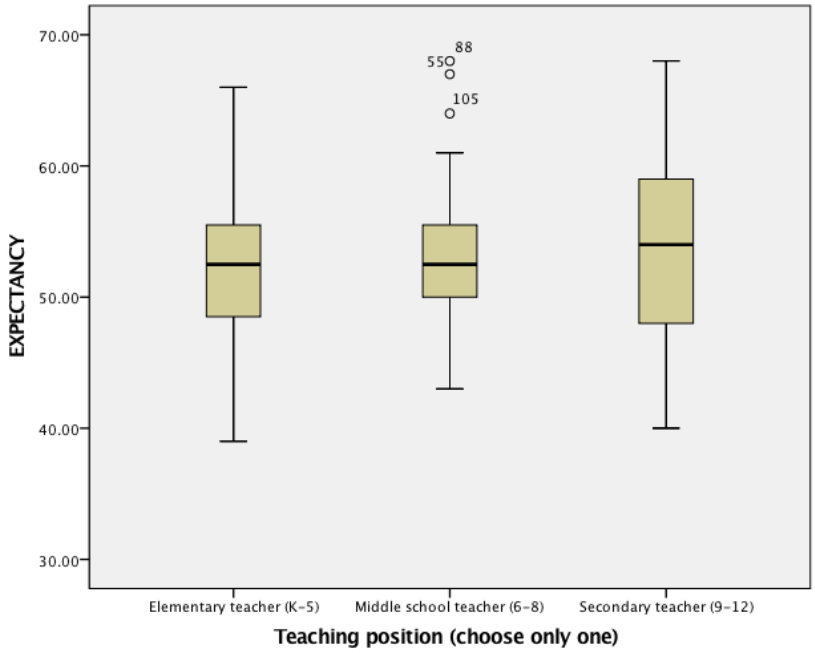

Figure 2: Boxplots for *expectancy of success* scores. This figure shows extreme values for *expectancy of success.*

Figure 3 shows boxplots for *perceived value* scores.

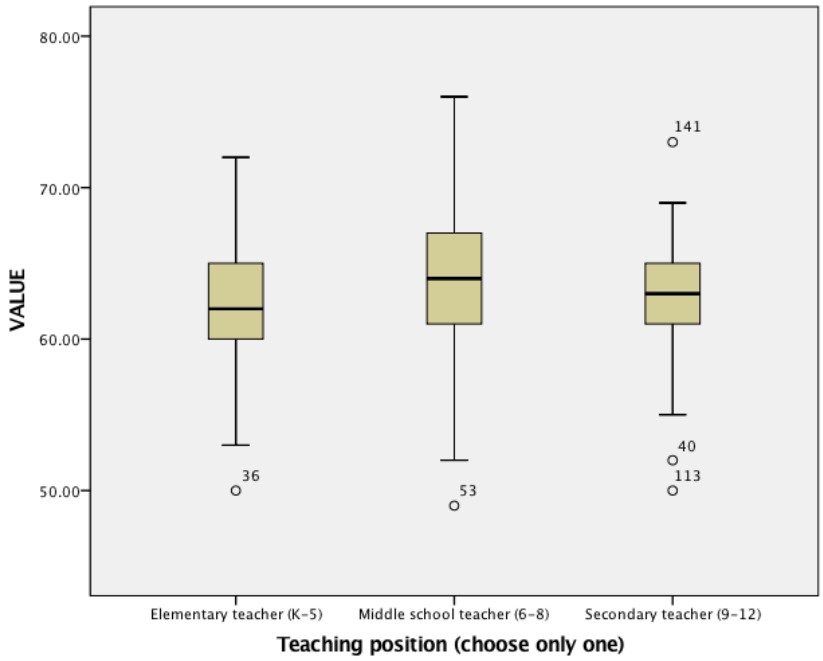

Figure 3: Boxplots for *perceived value* scores. This figure shows extreme values for *perceived value*.

Figure 4 shows boxplots for *perceived cost* scores.

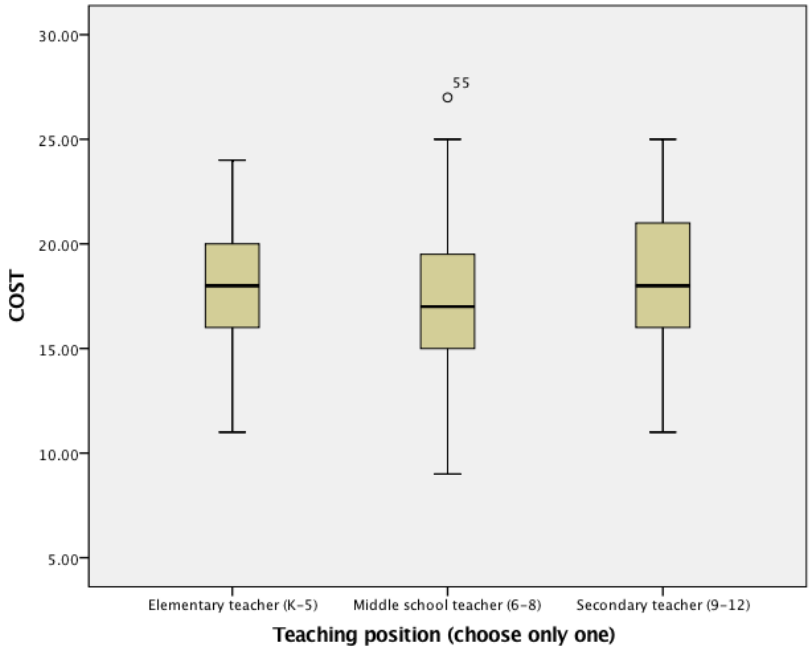

Figure 4: Boxplots for *perceived cost* scores. This figure shows extreme values for *perceived cost.*

Figure 5 shows boxplots for *current teaching practices* scores.

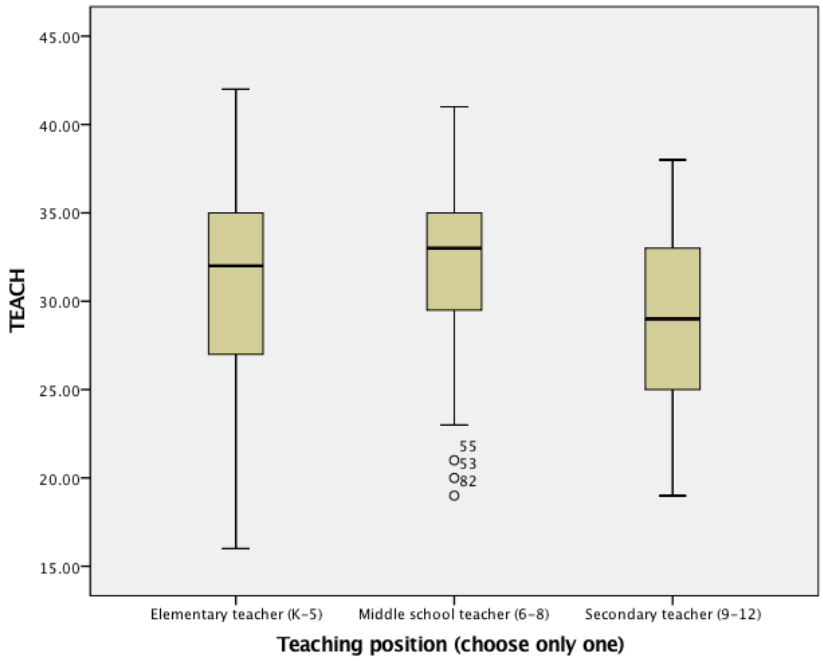

Figure 5: Boxplots for *current teaching practices* scores. This figure shows extreme values for *current teaching practices.*

There were 21 extreme values present. Of the 21 outliers, a total of three cases were removed. Two cases (Cases #53 and #55) were eliminated from the data because it appeared that both participants repeatedly selected extreme values on the questionnaire (1 for strongly disagree, 5 for strongly agree). The researcher assumed that participants for cases #53 and #55 did not complete the questionnaire in a serious manner. Additionally, one participant (Case #75) was eliminated from analysis because numerous responses were not completed. The researcher assumed the participant for case #75 did not thoroughly complete the questionnaire and considered the responses incomplete. Other extreme values were Winsorized, or recoded as adjacent values in the distribution to reduce the effect of the extreme values on the mean (Warner, 2013). A total of 18 extreme values were Winsorized.

Assumption Tests

Assumptions had to be met in order for the calculations of the MANOVA to be accurate. The normality of group means was tested using histograms and the Kolmogorov-Smirnov test. Results of the Kolmogorov Smirnoff test indicated that the assumption of normality was met for Overall Scores. Scatterplots were used to test the assumption of linearity and the assumption of linearity was met. Participants were randomly sampled for this study. Each participant's score was independent from every other participant's score therefore the assumption of independence was met.

Pearson's product moment correlations were used to test associations between variables. Table 6 shows Pearson's correlations between variables. Correlations ranged from medium negative associations to large positive associations, though no variables were correlated at the 0.80 or 0.90. Thus the assumption of multicollinearity was met.

Table 6

Pearson's Correlations for Overall CLIQ Scores, Expectancy of Success, Perceived Value, Perceived Cost, and Current Teaching Practices

	Overall	Expectancy	Value	Cost	Teach
Overall					
Expectancy	.63				
Value	.76	.22			
Cost	.53	.54	.19		
Teach	.30	-.39	.30	-.33	

Because variables were correlated but not dependent on each other, a one-way multivariate analysis of variance (MANOVA) was determined the appropriate method of statistical analysis. The hypothesis was tested using MANOVA to determine difference in perceptions of cooperative learning (expectancy of success, perceived value, perceived cost) and cooperative learning implementation (current teaching practices) between three independent variables

(elementary, middle, secondary). *Box's M* test was used to test homogeneity of variances. The results of *Box's M* (239.59) was significant, ($p < .001$), indicating a violation of homogeneity of variances; therefore, Pillai's Trace was used for MANOVA as a more robust correction to the violation.

Analysis

The MANOVA was not statistically significant, Pillais' Trace = .10, $F(2, 148) = 1.62$, $p = .10$. The groups of teachers did not statistically differ for any of the dependent variables. The effect size of the MANOVA was .05 (medium) with an observed power of .78.

CHAPTER FIVE: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Discussion

The purpose of this quantitative causal comparative study was to determine whether there was a significant statistical difference in perception and implementation of cooperative learning scores between three groups of teachers (elementary, middle, and secondary). The participants were public school teachers in seven public school districts in central Ohio. After IRB approval and with the permission of district superintendents, teachers were contacted via e-mail with a link to the Cooperative Learning Implementation Questionnaire (CLIQ, Abrami et al., 1998) through the Survey Monkey web platform. A total of 152 teachers responded to the questionnaire by the deadline; however, three questionnaires were removed from the study, which made a final sample size of 149. Data from the questionnaire were analyzed through SPSS software.

The hypothesis examined overall differences in the perception and implementation of cooperative learning between the three groups of teachers. It aimed to determine whether or not teachers in three different grade-level bands (elementary, middle, and secondary) possessed different perceptions of cooperative learning and implemented cooperative learning differently.

A one-way MANOVA was conducted for hypothesis testing. Results from the MANOVA revealed no significant differences in overall CLIQ scores between elementary, middle, and secondary teachers, $F(2, 148) = 1.62$, $p = .10$, $\eta^2 = .03$. The analysis did not show significant differences in perceptions and implementation of cooperative learning between any of the three groups of teachers.

Though significant differences between variables did not exist, the results of this study indicated that the participants ($n = 149$) *were* mostly users of cooperative learning ($M = 30.47$,

SD = 5.22), with 78% of participants reporting that they either somewhat, largely, or entirely implemented CL. This appeared to be a generous percentage in comparison to the findings of Abrami, Poulsen, and Chambers (2004) in the original implementation of CLIQ. In their study 61% of participants were classified as users of cooperative learning (Abrami et al., 2004). Overall lower ratings for *expectancy of success* (*M* = 52.92, *SD* = 6.01) coupled with 78% of participants reporting use of cooperative learning was not consistent with Abrami, Poulsen, and Chambers' (2004) findings attributing use of cooperative learning to teachers' expectancy of success. Because one's expectancy of success relates to the implementation of a practice (Wigfield, 1994), the findings in the current study were surprising. Low *expectancy of success* was present alongside a relatively higher rating of cooperative learning use.

Participants' ratings were lower for *perceived cost* (*M* = 17.89, *SD* = 2.55), indicating that most participants disagreed with statements about barriers to cooperative learning implementation. Several studies indicated barriers to implementation of CL in the classroom. Gillies and Haynes (2011) identified the burden on teachers for additional planning for strategic questioning as a deterrent for some. Teachers' lack of cooperative learning understanding contributed to nonuse of the educational practice (Hennessey & Dionigi, 2013). Igel and Urquhart (2012) noted that nonuse of cooperative learning among teachers was due to not all teachers fully understanding best instructional practices. Thanh's (2011) findings suggested barriers such as class size, teacher workload division, and curriculum coverage were deterrents to cooperative learning implementation among teachers. Correlations made between variables using Pearson's product moment during assumption testing revealed medium negative correlations between current teaching practices and both expectancy of success (*r* = -.39) and perceived cost (*r* = -.33). Though not statistically significant, this finding agreed with the

findings of Ruys, Van Keer, and Aelterman (2010), who found that lower ratings of cost attributed to greater use of cooperative learning practices. This finding implies that a teacher's perception of cost moderately affects the implementation of CL, indicating a need for further research on the risks associated with cooperative learning implementation.

Conclusion

The researcher predicted that there would be significant differences in the perceptions and implementation of cooperative learning (CL) at the beginning of the study. After analysis of the data, it was discovered that no significant difference existed in the perceptions and implementation of cooperative learning between the three groups of teachers. Though no statistically significant differences existed between the three groups in expectancy of success, perceived value, and perceived cost, it remains clear that barriers to implementation of CL exist, as stated in previous literature. Teachers' preparation (Gillies & Boyle, 2010; Igel & Urquhart, 2011) along with lack of knowledge on CL (Alexandar & van Wyk, 2014; Junko & Howard, 2010) contribute to nonuse of pedagogical practices involving cooperative learning. The argument for professional development was also supported by the creators of the CLIQ instrument. Abrami, Poulsen, and Chambers (2004) suggested that teacher training for CL is essential for sustained implementation of the practice. The need for professional development on CL contributes to the use or nonuse of CL practices (Meza-Cascante et al., 2015). Further analysis of individual items on the CLIQ instrument would provide information related to the literature on barriers to cooperative learning implementation.

Implications

This study examined use versus nonuse of cooperative learning between three groups of teachers in addition to perceptions of CL that could potentially influence use versus nonuse of

the practice. The study was one of the first to compare groups of teachers in terms of perceptions and implementation of cooperative learning. The initial study using the Cooperative Learning Implementation Questionnaire (CLIQ) contained a sample of 933 teachers and the results were neither disaggregated nor compared in terms of teacher groups (Abrami et al., 2004). In another use of the CLIQ instrument, Ruys, Van Keer, and Aelterman (2010) administered a section of the instrument to primary student teachers. The current study adds to the body of literature on cooperative learning by examining differences between teacher groups.

There were no statistically significant differences between teacher groups in perceptions and implementation of cooperative learning. It can be implied that because there are similarities in perceptions and practice, professional development opportunities focused on cooperative learning would benefit elementary, middle, and secondary teachers. Studies indicating nonuse of cooperative learning (Jolliffee, 2014; Meza-Cascante et al., 2015; Zakaria et al., 2013) stressed the importance of proper professional development for teachers. Understanding potential causes for implementation of an effective instructional practice such as CL will inform professional development for educators and ultimately result in academic success for students.

Limitations

One limitation to this study was the uneven sample sizes for each of the teacher groups. Responses for 60 elementary teachers, 44 middle school teachers, and 45 secondary teachers were analyzed for this study. The slight imbalance in responses received can be attributed to the difficulty gathering responses, as noted in Chapter 3. Unequal sample sizes can cause a correlation between tests of main effects and interactions (Warner, 2013). Pillai's trace was used to adjust for unequal sample sizes and provided a robust test of between-subjects factors.

Another limitation to this study was the lack of diversity among participants. Expanding studies to address more diverse populations was suggested by Barczi (2013) and Hijazi and Al-Natour (2012). Of the 152 participants, 99% of the population was Caucasian and 1% African American. There were four times as many female participants (79%) as male participants (21%). The researcher invited over 1,600 participants with the intent to gather enough responses to ensure statistical significance and to increase the likelihood of a diverse sample.

A final limitation to this study was the user unfriendliness of the Cooperative Learning Implementation Questionnaire (CLIQ) in the Survey Monkey web platform. The separation of sections on the platform resulted in many participants quitting the questionnaire after completing the demographic section. Thus, many responses were incomplete and had to be deleted prior to statistical analysis.

Recommendations for Further Research

There are several recommendations for future research that would add to the body of knowledge on the subjects of cooperative learning, teacher professional development, and instructional practices. First, as Barczi (2013) and Hijazi and Al-Natour (2012) suggested, expanding studies to address more diverse populations would expand the body of literature on cooperative learning implementation. One way to do this would be to include participants from a variety of schools and school districts. Causal comparative research could include perceptions and implementation of CL between urban, suburban, and rural teachers. Additionally, comparative research among teachers in schools that differ in socio-economic status would expand cooperative learning research to more diverse populations.

Another recommendation would be to examine the effects of teacher professional development on cooperative learning implementation. The need for research on professional

development was established by Ebrahim (2012), Krecic and Grmek (2007), Law (2011), and Pescarmona (2016). Ruys, Van Keer, and Aelterman (2010) also found that preservice teachers indicated that little to no training was provided on cooperative learning strategies. Some items on the Cooperative Learning Implementation Questionnaire (CLIQ) are related to professional development and examining professional development on instructional practices, especially cooperative learning, would uncover potential barriers to nonuse of instructional practices and better inform developers of professional development programming for educators (See Appendix F, items 2 & 5). Further examination of the effects of teacher professional development on cooperative learning implementation would perhaps uncover a contributing factor of CL use versus nonuse.

The effects of cooperative learning on gifted students and advanced learners is a potential topic for future interest. One of the items on the CLIQ instrument related the participants' perceptions of CL in terms of providing a challenge to gifted learners (See Appendix F, item 6). Further examination into differences in perceptions and implementation of cooperative learning between teachers of typical students and teachers of gifted learners could provide more insight into the differences found with this particular question. This additional research would also expand research on cooperative learning to a broad range of academic disciplines and fields, as Mehta and Kulshrestha (2014) suggested.

At a glimpse, differences in perceptions and practices of cooperative learning between teacher groups were present in the study, though statistically insignificant. Differences in the perceptions and practices of cooperative learning to improve academics, challenge students, and improve social skills suggest that secondary teachers have a different understanding of cooperative learning than elementary and middle school teachers. Hijazi and Al-Natour (2012)

found that teachers' experience and educational level influenced implementation of CL, while Kyndt et al. (2009) stated that differences in perceptions and implementation existed across grade levels. Qualitative studies could uncover common themes from in-depth responses from elementary, middle, and secondary teachers regarding cooperative learning. Further research on teachers' perceptions and influential factors to the nonuse of cooperative learning would expand the body of knowledge on instruction using cooperative learning.

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Appendix A

Institutional Review Board (IRB) Approval

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

January 28, 2016

Ronald E. Fausnaugh, III
IRB Exemption 2401.012816: Differences between Elementary, Middle, and Secondary Teachers' Perceptions and Implementation of Cooperative Learning Strategies

Dear Ronald,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under exemption category 46.101(b)(2), which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:101(b):

> (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
> (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Please note that this exemption only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued exemption status. You may report these changes by submitting a change in protocol form or a new application to the IRB and referencing the above IRB Exemption number.

If you have any questions about this exemption or need assistance in determining whether possible changes to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,

[redacted]

Administrative Chair of Institutional Research
The Graduate School

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Appendix B

Letter to Participants

Dear Educator,

Thank you for what you do every day to serve our children. I am a doctoral candidate at Liberty University and I would like to invite you to participate in a study. I am studying differences in both perceptions and implementation of cooperative learning in the classroom between elementary, middle, and secondary school teachers. Your completion of this questionnaire will help me identify differences in perceptions and instructional practices.

I have included a link for online completion of the Cooperative Learning Implementation Questionnaire (CLIQ), which will take approximately thirty minutes to complete. I have also attached an informed consent document outlining the details of the study. You may choose to skip responses or discontinue the questionnaire at any time and your personal responses will not be released to your district administration. Additionally, your responses will remain anonymous.

Thank you for your participation in this study. Please feel free to contact me with any questions.

Respectfully,

Ronald E. Fausnaugh, III
Doctoral candidate
Liberty University

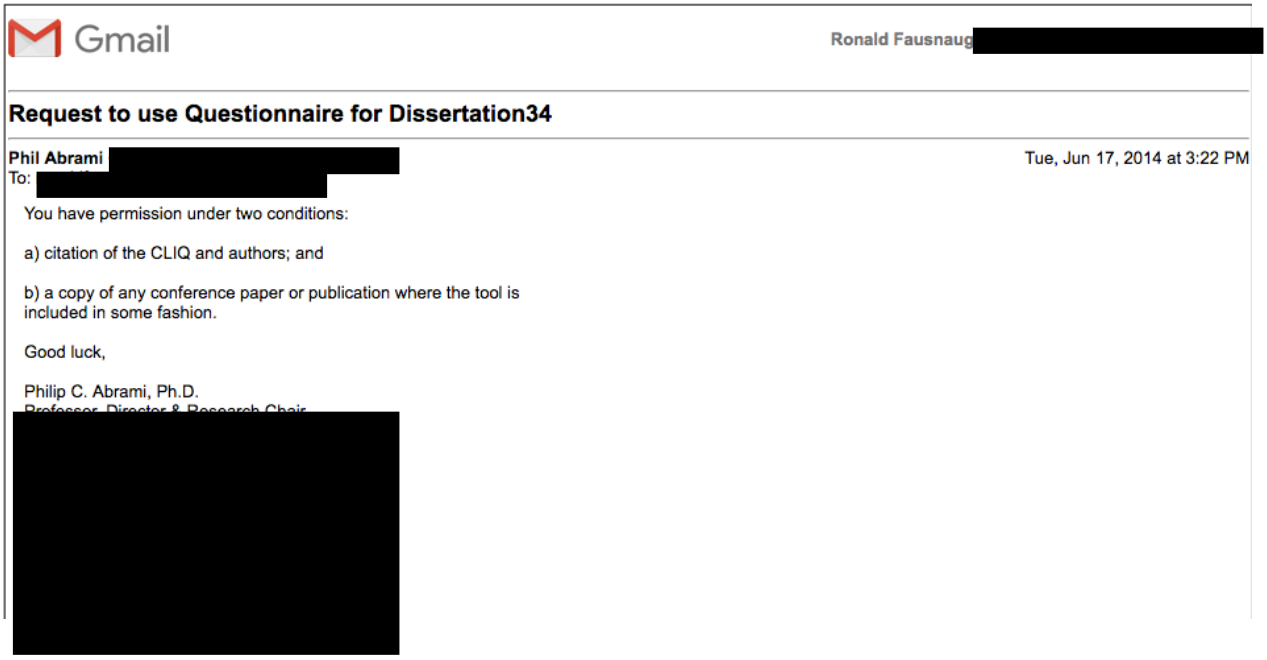
ronaldfausnaugh@xxxx

Link for questionnaire:

https://www.surveymonkey.com/r/LVYY3CM

Appendix C

Written Permission from Author of the *Cooperative Learning Implementation Questionnaire* (CLIQ, Abrami et al., 1998)



Gmail Ronald Fausnaug[redacted]

Request to use Questionnaire for Dissertation34

Phil Abrami [redacted] Tue, Jun 17, 2014 at 3:22 PM
To: [redacted]

You have permission under two conditions:

a) citation of the CLIQ and authors; and

b) a copy of any conference paper or publication where the tool is included in some fashion.

Good luck,

Philip C. Abrami, Ph.D.
Professor, Director & Research Chair
[redacted]

Appendix D

Approved Consent Form from Liberty University Institutional Review Board

The Liberty University Institutional Review Board has approved this document for use from 1/28/16 to --
Protocol # 2401.012816

CONSENT FORM

Differences between Elementary, Middle, and Secondary Teachers' Perceptions and Implementation of Cooperative Learning Strategies

Ronald E. Fausnaugh, III
Liberty University
School of Education

You are invited to be in a research study of the implementation of cooperative learning strategies in the classroom. You were selected as a possible participant because you are an elementary, middle, or secondary teacher in Central Ohio. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

Ronald Fausnaugh, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

Background Information:

The purpose of this study is to determine if there are differences in perceptions of cooperative learning strategies and classroom implementation of cooperative learning between elementary, middle, and secondary teachers.

Procedures:

If you agree to be in this study, I would ask you to do the following things:

1. Select the link for the Cooperative Learning Implementation Questionnaire through Survey Monkey.
2. Complete the Cooperative Learning Implementation Questionnaire, a 57-item questionnaire consisting of a 5-point Likert scale for rating your perceptions of cooperative learning and current teaching practices.
    a. Completion of the questionnaire will take approximately 30 minutes.
    b. The questionnaire is anonymous. Participant identity will not be known.

Risks and Benefits of being in the Study:

The risks involved in this study are no more than the participant will encounter in every day life.

Participants should not expect to receive a direct benefit from taking part in the questionnaire.

Compensation:

You will receive no compensation for taking part in this study.

Confidentiality:

The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely and only the researcher will have access to the records.

The Liberty University Institutional Review Board has approved this document for use from 1/28/16 to --
Protocol # 2401.012816

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

Contacts and Questions:

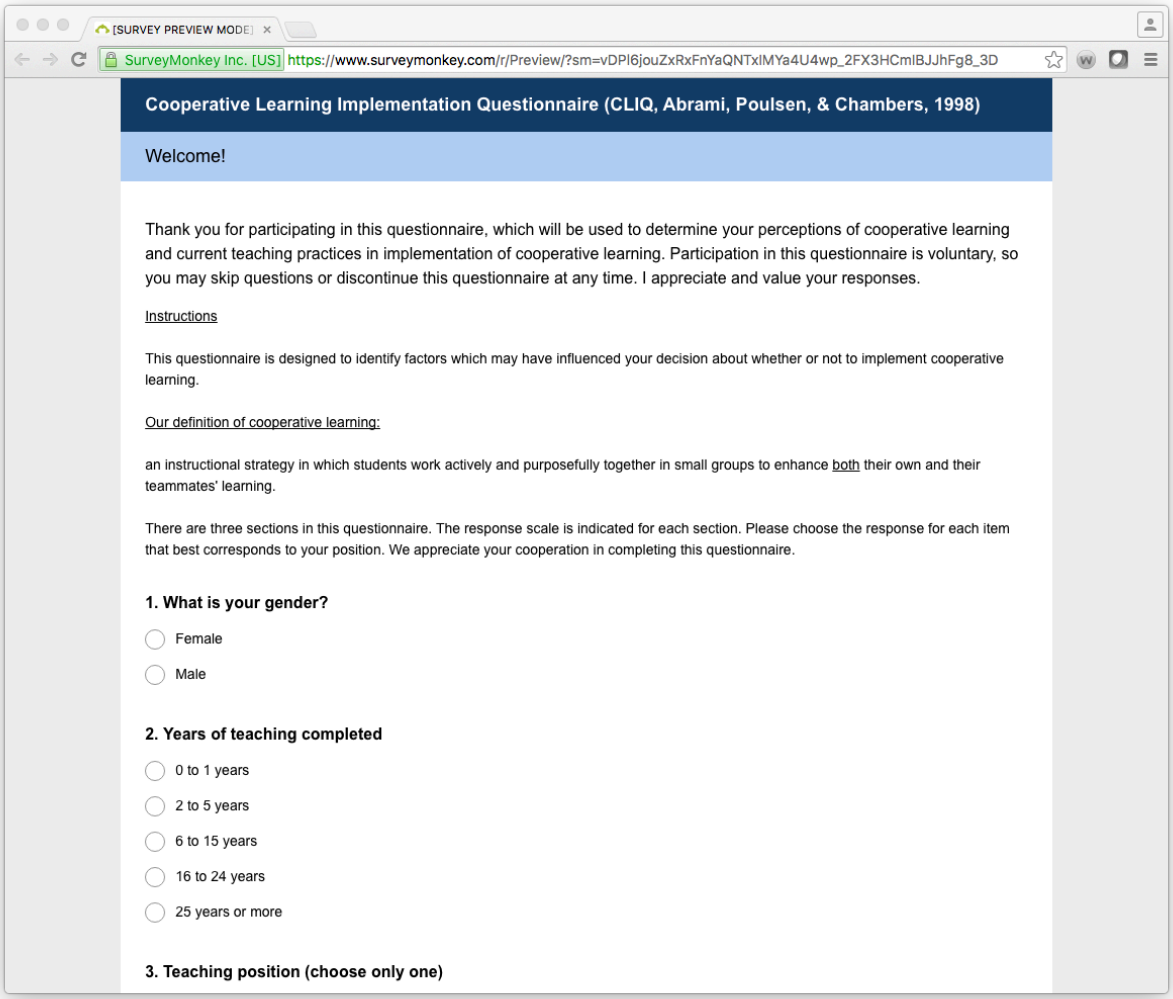
The researcher conducting this study is Ronald E. Fausnaugh, III. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact him at [redacted]u may also contact the research's faculty advisor, Charles K. Smith [redacted]

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd, Carter 134, Lynchburg, VA 24515 or email [redacted]

Please notify the researcher if you would like a copy of this information to keep for your records.

Appendix E

Image of Cooperative Learning Implementation Questionnaire through the Survey Monkey Web Platform



Appendix F

Cooperative Learning Implementation Questionnaire (CLIQ, Abrami et al., 1998)

https://www.concordia.ca/content/dam/artsci/research/cslp/docs/cliq.pdf

Appendix G
Means and Standard Deviations for Cooperative Learning Implementation Questionnaire (CLIQ, Abrami et al., 1998)

Subscale	M	SD
Expectancy of Success	51.80	11.35
Perceived Value	50.78	11.05
Perceived Cost	19.89	4.70

Appendix H

District Administrator Communications Log

School District #	Date(s) Contacted	Approval Received	Date Approval Received	Form of Approval
3	1/4/2016	Yes	1/5/2016	Official letter
1	1/4/2016	Yes (conditional that participants are contacted once)	1/6/2016	Official letter
2	1/4/2016	Yes	1/19/2016	Official letter
4	2/22/2016	Yes	2/24/2016	Official letter
5	2/22/2016	Yes	2/26/2016	Official letter
6	1/4/2016	Yes	2/24/2016	Official letter
7	4/1/2016	Yes	4/19/2016	Official letter