How Do Middle School Core Content Area Teachers in a Title 1 School Use Cooperative Learning in the Context of High Accountability for Student Proficiency: A Multiple Case Study

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HOW DO MIDDLE SCHOOL CORE CONTENT AREA TEACHERS IN A TITLE I SCHOOL USE COOPERATIVE LEARNING IN THE CONTEXT OF HIGH ACCOUNTABILITY FOR STUDENT PROFICIENCY: A MULTIPLE CASE STUDY

by

Martha Cunigan-Wells

A dissertation submitted to the Graduate College in partial fulfillment of the requirements for the degree of Doctor of Education Educational Leadership, Research and Technology Western Michigan University December 2014

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HOW DO MIDDLE SCHOOL CORE CONTENT AREA TEACHERS IN A TITLE I SCHOOL USE COOPERATIVE LEARNING IN THE CONTEXT OF HIGH ACCOUNTABILITY FOR STUDENT PROFICIENCY: A MULTIPLE CASE STUDY

Martha Cunigan-Wells, Ed.D.
Western Michigan University, 2014

This action research case study describes how content area teachers in a middle school with low reading achievement levels utilize cooperative learning and curriculum integration (with a focus on the integration of literacy skills and thinking skills) in their content area given the current context of accountability for student mastery of tested core content outcomes. The participants were four urban middle school teachers from the core areas of science, social studies, mathematics, and language arts who had varying levels of training and experience with cooperative learning and curriculum integration. Data sources included audio-recorded pre-conferences, video-taped classroom observations, audio-recorded post-conferences, and the researcher’s field notes. The author used in vivo coding for data initial reduction and template analysis for further data reduction and categorization leading to patterns of findings related to the use of cooperative learning and curriculum integration.

Social constructivism provided the theoretical groundwork for the study on the belief that learning is socially constructed. All four of the participants utilized cooperative learning to some extent; however, group processing, an essential element of cooperative learning as advocated by Johnson and Johnson, was not evident in any of the
classrooms. Cooperative learning is an instructional approach that provides adolescents with the opportunity to discuss, analyze, give opinions and get feedback from their peers and has been shown to be effective, particularly at the middle school level. This study provides an extensive look into the ways that middle school core content teachers think about and apply the instructional model of cooperative learning to the competing demands of serving their students in a context of high academic expectations, persistently low academic performance, and multiple student characteristics that associate with academic challenge.
ACKNOWLEDGMENTS

I thank God for his grace and mercy throughout this journey.

As I look back over my journey, I can truly say that writing a dissertation is a labor of service to others. It would be difficult to thank everyone that has given their time and talents (service) toward the completion of this project; however, I couldn’t have made it without each of you. The following is an attempt to recognize and express my appreciation for your service.

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If a tasket, once begun; Never leave it, ’til it’s done
Be the labor, great or small; Do it well, or not at all.

(Author Unknown)

Such wise sayings have made me push forward when quitting seemed justifiable.

Thanks, Gram ma!

Martha Cunigan-Wells
# TABLE OF CONTENTS

**ACKNOWLEDGMENTS** .................................................................................................................. ii

**LIST OF TABLES** ........................................................................................................................... x

**CHAPTER**

I. **INTRODUCTION** ......................................................................................................................... 1
   Background ........................................................................................................................................ 3
   Middle School Curricular Challenges ............................................................................................... 9
   Middle School Instructional Strategies ............................................................................................. 10
   The Focus of This Study ..................................................................................................................... 11
   The Practical Problem ...................................................................................................................... 14
   The Researchable Problem .............................................................................................................. 17
   Purpose Statement and Research Questions .................................................................................... 18
   Theoretical Foundation .................................................................................................................... 20
   Constructivism ............................................................................................................................... 20
   Social Interdependence Theory ...................................................................................................... 21
   Social Constructivism ...................................................................................................................... 22
   Methods Overview .......................................................................................................................... 23
   Conceptual Framework .................................................................................................................... 24
   Chapter I Summary .......................................................................................................................... 24

II. **LITERATURE REVIEW** ............................................................................................................... 27
   Background ....................................................................................................................................... 27
   Secondary Content Literacy Instruction ......................................................................................... 27
Table of Contents—Continued

CHAPTER

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent Literacy</td>
<td>31</td>
</tr>
<tr>
<td>Motivation and Engagement</td>
<td>34</td>
</tr>
<tr>
<td>Teaching Adolescent Literacy</td>
<td>36</td>
</tr>
<tr>
<td>Social-emotional Learning</td>
<td>37</td>
</tr>
<tr>
<td>Urban Education</td>
<td>38</td>
</tr>
<tr>
<td>Reading Achievement Gap</td>
<td>40</td>
</tr>
<tr>
<td>Supports for Reading Development at the Middle School Level</td>
<td>50</td>
</tr>
<tr>
<td>Content Reading</td>
<td>60</td>
</tr>
<tr>
<td>Comprehension</td>
<td>60</td>
</tr>
<tr>
<td>Strategy Instruction</td>
<td>65</td>
</tr>
<tr>
<td>Discipline Specific Concerns</td>
<td>68</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>69</td>
</tr>
<tr>
<td>Critical Thinking Skills</td>
<td>70</td>
</tr>
<tr>
<td>Instruction in Critical Thinking</td>
<td>71</td>
</tr>
<tr>
<td>Cooperative Learning</td>
<td>80</td>
</tr>
<tr>
<td>Social Interaction</td>
<td>83</td>
</tr>
<tr>
<td>Instruction in Cooperative Learning</td>
<td>85</td>
</tr>
<tr>
<td>Chapter Summary</td>
<td>92</td>
</tr>
</tbody>
</table>

III. METHODOLOGY........................................................................... 97

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview of Purpose and Methods</td>
<td>97</td>
</tr>
<tr>
<td>Study Setting and Subjects</td>
<td>100</td>
</tr>
<tr>
<td>Recruitment and Consent Procedures</td>
<td>101</td>
</tr>
</tbody>
</table>
Table of Contents—Continued

CHAPTER

<table>
<thead>
<tr>
<th>Data Collection</th>
<th>103</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumentation</td>
<td>109</td>
</tr>
<tr>
<td>Data Analysis Plan</td>
<td>111</td>
</tr>
<tr>
<td>Delimitations/Limitations</td>
<td>113</td>
</tr>
<tr>
<td>Summary</td>
<td>114</td>
</tr>
</tbody>
</table>

IV. RESULTS ................................................................. 116

<p>| Sample Selection | 116 |
| Description of the Data | 117 |
| Phase I: Pre-Conference | 118 |
| Research Question 1 | 120 |
| Phase II: Implementation of the Cooperative Learning Lesson | 127 |
| Research Question 1 | 127 |
| Andy’s Lesson | 127 |
| Bobby’s Lesson | 130 |
| Conny’s Lesson | 133 |
| Danny’s Lesson | 137 |
| Research Question 2 | 139 |
| The Infusion and Assessment of Literacy Skills | 145 |
| Research Question 3 | 145 |
| How Literacy Skills Were Infused in the Lessons | 145 |
| How Literacy Skills Were Assessed in the Lesson | 147 |
| The Infusion and Assessment of Thinking Skills | 148 |</p>
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>viii</td>
<td>Research Question 4</td>
<td>148</td>
</tr>
<tr>
<td></td>
<td>The Infusion and Assessment of Social Skills</td>
<td>151</td>
</tr>
<tr>
<td></td>
<td>Research Question 5</td>
<td>152</td>
</tr>
<tr>
<td></td>
<td>Phase III: Post Conference: Reflective Assessment</td>
<td>159</td>
</tr>
<tr>
<td></td>
<td>Research Question 6</td>
<td>159</td>
</tr>
<tr>
<td></td>
<td>Chapter IV Summary</td>
<td>171</td>
</tr>
<tr>
<td></td>
<td>V. DISCUSSION</td>
<td>174</td>
</tr>
<tr>
<td></td>
<td>Summary of Major Insights</td>
<td>174</td>
</tr>
<tr>
<td></td>
<td>Recap of the Findings</td>
<td>176</td>
</tr>
<tr>
<td></td>
<td>Relationship of Results to Existing Studies</td>
<td>179</td>
</tr>
<tr>
<td></td>
<td>Summary of Recommendations for Further Research and Practice</td>
<td>190</td>
</tr>
<tr>
<td></td>
<td>Revisiting the Study Limitations</td>
<td>193</td>
</tr>
<tr>
<td></td>
<td>Implications for Policy, Practice, and Organization</td>
<td>195</td>
</tr>
<tr>
<td></td>
<td>Summary</td>
<td>196</td>
</tr>
<tr>
<td></td>
<td>REFERENCES</td>
<td>197</td>
</tr>
<tr>
<td></td>
<td>APPENDICES</td>
<td></td>
</tr>
<tr>
<td>A.</td>
<td>Superintendent’s Consent Letter</td>
<td>214</td>
</tr>
<tr>
<td>B.</td>
<td>Letter of Invitation for Teacher Participation</td>
<td>216</td>
</tr>
<tr>
<td>C.</td>
<td>Consent Form</td>
<td>218</td>
</tr>
<tr>
<td>D.</td>
<td>Teacher Interview Prompts for Initial Lesson Planning Session Between Researcher and Teacher</td>
<td>222</td>
</tr>
<tr>
<td>E.</td>
<td>Researcher Protocol for Conducting Observations and Researcher Protocol for Debriefing the Lesson During the Post-Observation Conference</td>
<td>224</td>
</tr>
</tbody>
</table>
Table of Contents—Continued

APPENDICES

F. Human Subjects Institutional Review Board Letter of Approval ...................... 227
LIST OF TABLES

1. Data Analysis: How Research Questions Align with Data Sources .................. 119
2. Teachers’ Definition of Cooperative Learning ............................................. 120
3. Beliefs About Cooperative Learning: Andy ................................................. 121
4. Beliefs About Cooperative Learning: Bobby .............................................. 123
5. Beliefs About Cooperative Learning: Conny ............................................. 125
6. Beliefs About Cooperative Learning: Danny ............................................. 126
7. Observed Elements of Implementing Cooperative Learning in the Classroom: Andy .............................................................. 129
8. Observed Elements of Implementing Cooperative Learning in the Classroom: Bobby .............................................................. 133
9. Observed Elements of Implementing Cooperative Learning in the Classroom: Conny .............................................................. 137
10. Observed Elements of Implementing Cooperative Learning in the Classroom: Danny ............................................................. 138
11. Distribution of Literacy Skills Observed Across Teacher Participants ........... 146
12. Andy: At What Level of Bloom’s Taxonomy of Learning and Thinking Processes Are Students Asked to Perform While Doing Cooperative Learning Activities? ................................................................. 149
13. Bobby: At What Level of Bloom’s Taxonomy of Learning and Thinking Processes Are Students Asked to Perform While Doing Cooperative Learning Activities? ................................................................. 150
14. Conny: At What Level of Bloom’s Taxonomy of Learning and Thinking Processes Are Students Asked to Perform While Doing Cooperative Learning Activities? ................................................................. 150
15. Danny: At What Level of Bloom’s Taxonomy of Learning and Thinking Processes Are Students Asked to Perform While Doing Cooperative Learning Activities? ................................................................. 151
<table>
<thead>
<tr>
<th></th>
<th>Table Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Andy’s Infusion of Social or Personal Responsibility Skills</td>
<td>152</td>
</tr>
<tr>
<td>17</td>
<td>Bobby’s Infusion of Social or Personal Responsibility Skills</td>
<td>154</td>
</tr>
<tr>
<td>18</td>
<td>Conny’s Infusion of Social or Personal Responsibility Skills</td>
<td>155</td>
</tr>
<tr>
<td>19</td>
<td>Danny’s Infusion of Social or Personal Responsibility Skills</td>
<td>158</td>
</tr>
<tr>
<td>20</td>
<td>Teachers’ Reflective Assessment Statements</td>
<td>159</td>
</tr>
<tr>
<td>21</td>
<td>Teacher Reflection on the Lesson Objectives</td>
<td>161</td>
</tr>
<tr>
<td>22</td>
<td>Teacher Reflections on the Literacy Skills Part of the Lesson</td>
<td>164</td>
</tr>
<tr>
<td>23</td>
<td>Teacher Reflections on the Thinking Skills Part of the Lesson</td>
<td>166</td>
</tr>
<tr>
<td>24</td>
<td>Teacher Reflections on the Social Skills Part of the Lesson</td>
<td>169</td>
</tr>
<tr>
<td>25</td>
<td>Significant Findings from Wells (2014—Compared to Previous Research Findings—Recommendations</td>
<td>192</td>
</tr>
</tbody>
</table>
CHAPTER I
INTRODUCTION

Literacy is essential in the development of critical thinking. The National Institute for Literacy (NIL, 2007) includes reading, writing, and speaking in their definition of literacy. Advancing this definition, the National Council of Teachers of English (NCTE, 2006) also emphasizes that, “for adolescents, literacy is more than reading and writing. It involves purposeful social and cognitive processes. It helps individuals discover ideas and make meaning. Literacy enables functions such as analysis, synthesis, organization, and evaluation” (p. 5). Adolescent literacy improvement should be the focus of all middle and high school educators in recognition of the fact that all other content areas are dependent on the adolescents’ literacy skills. Goldman (2012) maintains that teachers’ main focus should be to assure that students are instructed in the use of such 21st century literacy skills as being able to analyze, synthesis, and evaluate information from multiple sources of text, leading to students reading comprehensively and critically in all disciplines.

Middle school is an apex period for adolescents’ social, emotional, and intellectual development. It is a time when learning to think critically, work collaboratively, and find both relevance and personal competence within academic disciplines all place incredible demands on what is already a tumultuous period of physical and mental change (Mertens, Anfara, & Roney, 2009). This is also a period of brain development moving from concrete to abstract through processes and, thus, a key
time for developing the ability to think critically, creatively, and constructively (Beyer, 2008). With delays or deficits in literacy development, however, this period of a child’s education can be fraught with the potential to fall severely behind academically with additional social and emotional repercussions (Franzak, 2006).

Unfortunately, in many schools that serve high poverty student populations, lags and deficits in literacy development are a common feature of the middle school student profile. This places additional challenges into the mix of teaching increasingly rigorous academic content in a fashion that elicits higher levels of critical and creative thinking while accommodating the adolescent’s need for social interaction and emotional engagement. In schools with both high poverty and low reading achievement (the profile of many U.S. urban schools), middle school core content teachers have the challenge of teaching to all of these needs (social, emotional, literacy, content knowledge, and thinking) simultaneously. Cooperative learning, as an instructional model, offers teachers a context in which these distinct areas of development can be brought together in planned learning activities (Johnson, Johnson, & Roseth, 2010). The purpose of this study is to describe how content area teachers in an urban middle school with low reading achievement levels utilize cooperative learning in their content area given the current context of accountability for student mastery of tested core content outcomes. Specifically, this study explores how language arts, math, social studies, and science teachers use cooperative learning as a context for integrating literacy skills, thinking skills, social skills, personal management skills, and academic content.
Background

The function of education, therefore, is to teach one to think intensively and to think critically. But education which stops with efficiency may prove the greatest menace to society. The most dangerous criminal may be the man gifted with reason, but with no morals.

Dr. Martin Luther King, Jr. (1947)

Literacy is critical for academic success especially in meeting rigorous curriculum demands. Young Americans of today face higher literacy demands than ever before. Today’s economy, coupled with complex political and social challenges, requires more advanced literacy skills than ever before (Murnane, Sawhill, & Snow, 2012). Some of the more advanced skills needed in today’s economy include the ability to analyze, synthesize, and evaluate information from a variety of sources.

In this age of curriculum, standards, and accountability, educators (teachers in particular) are faced with tough decisions daily. Teachers have resorted to narrowing their curriculum in order to meet the demands of No Child Left Behind (NCLB, 2002) by covering content from the curriculum framework that is potential test material. In studies conducted by Jerald (2006) and Volger and Virtue (2007), researchers found that the atmosphere of high-stakes testing also affect the choices teachers make about their use of instructional time. Firestone, Schorr, and Monfils (2004) and Volger, (2005) concluded that the amount of instructional time teachers spend on test preparation tends to be proportional to the severity of the stakes attached to the test for everyone involved (i.e., students, teachers, administrators, and community). These studies illustrated how this can result in curriculum narrowing where areas not tested get short-changed or not addressed at all.
Curriculum narrowing is not without its costs, especially in elementary schools. It deprives students of the opportunity to develop broad vocabulary and background knowledge needed for strong reading comprehension later on (Jerald, 2006), ultimately affecting success on standardized reading tests in the upper grades. A report prepared by Kamil (2003) for The Alliance for Excellent Education (AEE) revealed that approximately 6 million secondary school students in the U.S. were reading well below grade level and that more than 3,000 students dropped out of high school every day. One of the more common reasons given for these occurrences was lack of literacy skills needed to keep up with the curriculum (American Federation of Teachers [AFT], 2007; Kamil, 2003; Snow & Biancarosa, 2003).

Adolescents of the 21st century are expected to read and write more than they did at any other time in human history (Kay, 2009). They will need advanced levels of literacy to perform their jobs, run their households, act as citizens, and conduct their personal lives. The global economy and today’s democratic society demands a different kind of preparation than that of earlier generations (Kay, 2009). Adolescents will find information everywhere and will need literacy in order to cope with the multitude of information (NIL, 2007). In their review of “Literacy Challenges for the Twenty-first Century,” Murnane, Sawhill, and Snow (2012) noted that the U.S. labor market has changed dramatically over the past 40 years requiring more advanced literacy skills. The evidence is strong that advanced literacy skills are needed and should perhaps be the main focus of interventions at the middle school level.

In most middle and high school classrooms across the country, students can be found who struggle with reading because of either poor decoding skills, lack of
understanding of what was read due to difficulty in decoding, limited vocabularies, and/or lack of background knowledge (Darwin & Fleischman, 2005). The average secondary student reads below the level of the content text (Allington, 2002). In addition, departmentalization in curriculum leads each department to focus on its own content rather than on general skills. Literature on the effectiveness of specific literacy instructional approaches or programs for adolescents is scarce. As a result, content area teachers do not have access to good resources or models for addressing their students’ literacy deficits (Allington, 2002).

In conjunction with these challenges, many adolescents face literacy challenges that will limit their ability to handle course content and impede their critical thinking skills. One of these challenges, as defined by the National Assessment Governing Board (2011), centers on reading achievement. The NAGB framework categorizes eighth grade reading achievement in three levels: basic, proficient, and advanced. Eighth graders reaching advanced level status signifies superior performance such as being “able to manage the processing demands of analysis and evaluation by stating, explaining, and justifying” (p. 65). Eighth graders obtaining a status of proficient “have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter” (p. 44). Basic reading achievement “denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade” (p. 44). Thus, even at basic levels of reading achievement, middle school students will struggle with grade level content instruction and with anything below a basic level of
reading achievement, and students will surely begin to accumulate academic failure across the curriculum.

As if literacy skill challenges were not enough to place middle school students at risk, an American College Test (ACT, 2010) study found that many middle school students appear to lack advanced level cognitive strategies as well. The study involved approximately 216,000 students of the high school graduating class of 2005 and 2006 who had completed the longitudinal assessment component of ACT’s College Readiness (EXPLORE, PLAN, and the ACT test). Fewer than 2 in 10 eighth graders were on target to be ready for college level work by the time they graduated from high school as revealed by the test (ACT, 2010). Higher literacy demands are the result of advances in technology; along with understanding how reading, writing, language, content, and social appropriateness work together in using knowledge in effective ways (Langer, 2001). From middle school through the rest of a student’s academic experience, literacy and cognitive or thinking skills will be inextricably linked because of the shift from the more concrete to the highly abstract, complex, and interrelated nature of curriculum expectations at the secondary and post-secondary levels (Preus, 2012).

Despite general understanding of the increased and more sophisticated literacy demands that secondary education places on students, Richard Vacca (1998), past president of the International Reading Association, argues that adolescent literacy has been marginalized to the extent that much of the debate over literacy deals with early literacy and early intervention strategies. Other studies confirm that much of the concern about literacy has been at the elementary level, specifically on teaching students how to read. Vacca acknowledges the importance of early literacy development and favors its
continuation; however, literacy learning is critical not only in early childhood but also in adolescence, as literacy expectations have accelerated and are expected to continue to do so in the coming decades. Interest in adolescent literacy has been accentuated by a number of policymakers from various perspectives: Carnegie Council on Adolescent Development (1989), National Center for Education Statistics (NCES, 2008b), and the National Assessment Governing Board (NAGB, 2011). Additionally, some policy reports are explicitly linking the need for stronger middle school literacy instruction with other aspects of early adolescent development including social, emotional, and cognitive development. Recommendations of the Carnegie report included a call for more cohesive learning communities, cooperative learning between students of varying abilities, more teacher education geared specifically to pre-adolescents, and better connections between communities and schools.

Contrary to a focus at the elementary level on learning to read, the emphasis by the time the student reaches middle school is on reading to learn. A main hindrance to adolescents’ literacy development is a lack of comprehension skills. Studies have shown a link between reading comprehension (a key literacy skill) and thinking skills starting about 3rd or 4th grade. This link has been associated in studies with what is known throughout the United States as the “fourth-grade slump.” Chall, Jacobs, and Baldwin’s (1990) 2-year in-depth study provided evidence of this slump. The researchers found that the reading, writing, and language development of 30 low-income children in grades 2, 4, and 6 were equal to the national norms in the primary grades but started declining about fourth grade and continued downward through the upper grades. These findings suggested that the basic literacy skills were sufficient for the primary grades, but were
insufficient for the upper grades where the work encountered is more complex and the reading content more advanced.

For more than half a century, federal (NAEP) as well as local testing agencies have validated the existence of a significant achievement gap (or slump) between students of low-income and middle-income families and verified that this achievement gap becomes more pronounced by fourth grade and increases as children get older (Sanacore & Palumbo, 2009). Some of the reasons given for this gap include a focus mainly on narrative text in primary grades, which fails to prepare low-income students for the informational, content-specific text they will encounter in the upper grades; unavailability of interesting and relevant text; and limited reading opportunities resulting from a focus on high-stakes, test-preparation regimens (Sanacore & Palumbo, 2009).

Research of the 1950s and 1960s revealed that children who did not master letters and letter-sound relationships faced more reading challenges in the middle grades, primarily due to the reading content becoming more taxing (Chall, 1967; Sanacore & Palumbo, 2009). Not only is the text more challenging in middle school, both elementary and secondary teachers still feel that teaching reading is the responsibility of primary teachers.

Multiple studies show that urban middle school students fare even worse than middle school students overall with reading levels of “below basic,” according to Kamil’s 2003 report to the Washington, D.C. Alliance for Excellent Education. Kamil’s report went on to note that researchers have looked at patterns of literacy among U.S. students and found that the average literacy skills of Black and Hispanic students are three years behind White and Asian students when they enter high school. The average literacy skills
of students from low-income families are five years behind those from high-income families when they enter high school. Compounding the challenges mentioned, urban districts are faced with violence in and around school campuses, funding inequities with suburban districts, lack of supplies, and inadequate preparation for many teachers (Jones & Sandidge, 1997; Sanacore & Palumbo, 2009).

Middle School Curricular Challenges

One emphasis of the middle school concept is to address the wide range of developmental needs of emerging adolescents, such as providing opportunities to move around the classroom. It is during this stage of development that students’ need to socialize increases along with their need for movement in the classroom and peer interaction. Two high impact, evidence-based strategies that can address all of these developmental needs are the strategy of cooperative learning and the strategy of flexible grouping (Huss & Eastep, 2011). Within both instructional arrangements, students can gain emotionally as well, because these two forms of grouping tie in with their need to engage socially and their need to be liked, accepted, or acknowledged by peers, as opposed to being in an environment where students work in isolation with a very narrow focus on test preparation (Huss & Eastep, 2011).

In addressing some of the challenges teachers face teaching adolescents and teaching to students who are functioning below grade level in reading and other basic skills while also teaching social/behavior skills, it would be advantageous to recall the philosophy of the middle school concept to “enable every student to think creatively, to identify and solve meaningful problems, to communicate and work well with others, and to develop the base of factual knowledge and skills that is the essential foundation for
these ‘higher order’ capacities” (Jackson & Davis, 2000). The literature offers strategies (e.g., cooperative learning and flexible grouping) for addressing adolescent students’ needs for socialization and high levels of interaction. Other studies also point to the importance of curricular experiences for adolescents that tap into and develop both their higher order and creative thinking skills. So it would seem that enough is understood about both the needs and challenges for adolescent learners to begin building new instructional frames for directly impacting middle school students’ continued development as highly competent readers, while building their ability to think and create and to function productively and comfortably in social settings.

**Middle School Instructional Strategies**

There are middle school teachers with a sound repertoire of instructional strategies for teaching reading (especially reading comprehension), strategies for teaching higher order and creative thinking skills, and strategies to establish flexible and cooperative grouping arrangements that allow students the high levels of social interaction and movement they need to stay engaged in the learning process. To date, however, there has been limited research on what happens when middle school teachers are blending all three types of strategies (reading, thinking/creating, and grouping) into a unified design for teaching and learning in specific core content areas. This lack of study leaves the field with few models of how to create this type of blended learning context, so little is known about how to do this well. In particular, middle school teachers do not have access to researched models for integrating or blending the teaching of reading strategies, thinking and creating strategies, and cooperative learning strategies into a viable framework in which to leverage those strategies against one another and address
three major areas of adolescent development at one time: reading comprehension with multiple forms of text, critical and creative thinking responses to and applications of information derived from text, and co-constructing learning in collaborative and reciprocal (cooperative) learning settings.

The Focus of This Study

National reports continue to highlight that many of our middle and high school students are increasingly “under-literate.” The National Council of Teachers of English (NCTE, 2006) defines under-literate as lacking the complex literacy skills they will need to be successful in an information-driven society. A 2007 report issued by the National Assessment of Educational Progress (NAEP) showed that secondary school students were reading significantly below expected levels. High school graduates literacy scores dropped between 1992 and 2003, according to the National Assessment of Adult Literacy (NAAL) report, which was administered by the U.S. Department of Education’s National Center for Education Statistics (2005). Another national report, issued by the National Center for Education Statistics (NCES, 2008a), reported a continuing and significant reading achievement gap between certain racial/ethical/SES groups. Some improvement was noted in the 2011 NAEP report, which reported scores were higher in 2011 than in 2009 for White, Black, and Hispanic eighth-grade students. This improvement warrants cautious optimism as it reflects a short period of time.

A 2012 federal government initiative, the Common Core State Standards (CCSS), call for a focus on higher-level critical thinking being adopted by states in order to meet the federal No Child Left Behind/Race To The Top requirement for all states to provide schools with a set of core curriculum expectations. These new standards accentuate the
link between literacy proficiency, thinking skill proficiency, and core content proficiency. The question becomes, with so many of our middle and high school students identified as under-literate and failing to demonstrate basic performance on standardized tests, how do we best address the literacy needs of all adolescents, develop their abilities to think critically and creatively, and ensure that they will master the rigorous content standards embedded in the Common Core State Standards?

Of particular concern for this study is the criticism that middle schools have failed to support and challenge our youth (Juvonen, 2007) and that this failure is evident in both the development of young adolescents’ critical reasoning and higher order thinking (Carnegie Council on Adolescent Development, 1989) and their literacy development. The emphasis on adolescents in the literature is not limited to national interests regarding literacy. Some scholars (Larson, Wilson, Brown, Furstenberg, & Verma, 2002) draw our attention to rapid changes of globalization, societal, and new technological changes that are altering both the nature of adolescence and the expectations for a globally competitive middle grades curriculum.

Other scholars focusing specifically on adolescent literacy development (Edmonds et al., 2009; Faggella-Luby, Ware, & Capozzoli, 2009; McKeown, Beck, Sinatra, & Loxterman, 1992; Voss & Silfies, 1996; Wang, 1996) found that understanding text structure contributes to text comprehension and helps in the process of building background knowledge. Looking at other aspects of literacy development, scholars have also identified hot topics in literacy education, such as reading development, adolescent reading development, and adult literacy. Cassidy, Valadez, Garret, and Barrera’s (2010) study found that, although adolescent literacy was
recognized by those participating in the study as a very hot topic and thus led the list of issues identified by study participants, the reports of successful programmatic responses in adolescent literacy are scarce. Studies have produced sufficient findings, however, to inform the shaping of adolescent literacy development strategies in conjunction with strategies to teach core content, thinking skills, and even social and personal management skills.

Teaching adolescents with low literacy skills requires teaching strategies that help develop thinking skills (as a way to enhance comprehension). Comprehension is one of the most important skills for students to develop if they are to become successful and productive adults (Pardo, 2004). There are a number of ways that teachers can help students develop comprehension strategies, such as the use of graphic organizers and cooperative learning, as recognized by the National Reading Panel (NRP, 2000). Cooperative learning can improve reading comprehension and achievement across the content areas for upper elementary and high school students, as well as for English language learners and students with learning disabilities in inclusive settings (Klinger, Vaughn, Arguelles, Hughes, & Leftwich, 2004; Langer, 2001; National Reading Panel, 2000).

The question of how to support adolescents who struggle with literacy is a dilemma that educators have an opportunity to address through such actions as whole-school literacy programs (Alliance for Excellent Education, 2004; Fisher, 2001), afterschool programs (Hartry, Fitzgerald, & Porter, 2008), and other research-based instructional techniques that target the needs of all readers. Literacy demands increase during the 4th-grade year and continue to do so through high school. As a result, some
literacy scholars conclude that strategies which improve comprehension should continue especially during the 4th through 12th grade (Biancarosa, 2005).

The Practical Problem

The No Child Left Behind Act (NCLB) of 2001 has already made a tremendous impact on teachers instructional choices, for example, higher high school graduation requirements, the new (and rigorous) Common Core curriculum, new state assessments, value-added growth models, and high stakes performance evaluation, to name some of the most significant. NCLB and Race To The Top (RTTP) both set deadlines for states and thus local schools to expand the scope and frequency of student testing to include annual testing for grades 3-8 and grade 11 in math and language arts. As sweeping education policy, NCLB also established standards requiring every teacher to be highly qualified in their subject area, requiring each school to make demonstrable annual progress in raising the percentage of students proficient in reading and math, and requiring schools to narrow the test score gap between advantaged and disadvantaged students.

Ultimately, NCLB holds schools accountable for the performance of all students through a system that requires states to apply measures to the results of the state assessments to compute whether or not each school has achieved “Adequate yearly progress (AYP)” toward the goal of bringing 100% of students at least to academic proficiency by the end of the 2013-14 school year. As stated, reading and math are the only areas tested and, thus, performance in reading and math is the main indicator of AYP. Students in schools that do not make AYP for two consecutive years can transfer to a better-performing school in their district. This mandated curriculum focus on math and
reading has led to other subjects being minimized through curriculum narrowing (Alfassi, 2004; Jones & Thomas, 2006; Musoleno & White, 2010; Olwell & Raphael, 2006; Schell, 2007); however, the federal education reform agenda under RTTT will gradually expand the focus from math and reading to proficiency across all core curriculum areas (math, language arts [including reading], science, and social studies).

Even with subsequent changes in the NCLB accountability system through the reauthorization process and the interface between NCLB and Race to the Top (RTTT), the emphasis remains on tested proficiency levels of students, measures of growth in learning attainment, and elimination of achievement gaps. RTTT added individual teacher and administrator accountability for growth in student achievement and capped that off with funding incentives tied to states adopting the Common Core curriculum, high stakes educator performance assessment, and value-added growth measures that seek to create a more reliable way to determine the impact of educators and programs in schools with high needs and underperforming students as compared to schools with high achieving student populations.

With less than one year to achieve the original NCLB goal of 100% proficiency in reading and math for all students, and only marginal gains toward that goal on a national level, it is unlikely that the pressures to place curriculum emphasis on reading and math as gateway competencies for other curriculum areas will decline as NCLB slowly gives way to RTTT as the national education policy frame. While the Common Core curriculum is being developed to address social studies and social studies as well as math and English/language arts, and even though this curriculum will eventually be matched with fully aligned assessment systems that will take the nation closer to a national
curriculum and assessment system, the pressures for high levels of reading competency will continue to compete with the pressures to achieve high levels of competency with the other curricular areas including, even the STEM areas (science, technology, engineering, and math) so clearly significant to the national economic agenda. Schools that still lag significantly (and there are many) behind the 100% proficiency goal in reading are likely to continue undercutting other curricular areas to achieve a breakthrough in reading achievement for their students. By the same token, schools with persistently low reading achievement will continue to systematically undercut students’ ability to master the rigorous curriculum content standards in other academic areas.

Specifically, the content areas of social studies, science, physical education, and the arts have all, to some extent, been directly impacted by students’ low literacy competencies and have been neglected due to the pressures associated with high-stakes testing in reading and math. Schell (2007), a strong proponent of the integration of literacy and social studies, maintains that, while most literacy standards describe the knowledge and skills required of students across grade levels, they do not prescribe the content and materials to be used to acquire these skills. Social studies text, Shell argues, consistently provides opportunities to learn about and utilize informational text for both reading and writing purposes while addressing the social studies standards. She goes on to contend that important skills in the area of social studies and literacy can be strengthened while engaging student interests and establishing a purpose for literacy in the real world.

Despite these arguments and for reasons earlier discussed, secondary level teachers still tend to teach their discipline in isolation and rarely have the instructional
strategies to embed reading instruction in the teaching of subject content. In another
discussion on standardized tests, Hursh (2008) asserted, “Because of the pressure to raise
test scores, particularly in the urban school districts, teachers are compelled to teach the
skills and knowledge that will be tested, neglecting more complex aspects of the subjects
and, indeed, some subjects altogether” (p. 92). So, the problem gets deeper as the focus
narrowes and instruction settles in at the lower levels of reading competency.

The Researchable Problem

Given the high stakes pressures that core content area teachers are experiencing
under federal and state accountability policies and systems, there is much scrutiny about
the instructional decisions they make. In planning instruction, teachers often look for the
most expedient strategies to improve student performance. This may lead teachers to the
conclusion that they do not have the time to spend on cooperative learning and need to
stick to more didactic ways of teaching their core content. Yet, cooperative learning was
isolated by Robert Marzano and a team of researchers at the Mid-continent Research in
Education Laboratory (McREL) as one of nine highly recommended classroom
instructional practices (Marzano, Pickering, & Pollock, 2001) that are positively
correlated with improved student performance on academic assessments across a
significant number of research studies.

Further, cooperative learning can provide middle school students opportunities to
apply multiple concepts and competencies, work at higher levels of Bloom’s (1956)
Taxonomy of thinking, and work on social skills—all identified needs of the adolescent
learner (Huss & Eastep, 2011; Johnson & Johnson, 2005; Johnson et al., 2010; Leonard
& McElroy, 2000; Slavin, 1991). In other words, cooperative learning lessons can
provide adolescent students a more multi-dimensional learning experience and teachers
the opportunity to blend multiple learning outcomes into one lesson even when the lesson
is grounded in a specific core curriculum area. The concern is that teachers may minimize
their use of cooperative learning because of fear that the cooperative learning process
might not be the most effective way to build student mastery of core content
expectations.

While current studies have yet to investigate if teachers’ use of cooperative
learning might be on the decline, there are studies that reveal teachers’ growing level of
concern about which instructional strategies will result in the greatest student academic
gains (Adams & Pegg, 2012; Conley, 2008; Preus, 2012; Snow & Moje, 2010).
Therefore, a reasonable area of inquiry at this stage of the high stakes accountability
movement is to examine where, how, and why middle school teachers are using
cooperative learning as a frequently employed instructional strategy, especially in schools
where there are greater pressures to show achievement gains. This study seeks to follow
that line of inquiry.

**Purpose Statement and Research Questions**

The purpose of this study is to describe how content area teachers in an urban
middle school with high poverty and low reading achievement utilize cooperative
learning in their content area given the current context of accountability for student
mastery of tested core content outcomes. Specifically, this study is interested in:
(a) where, how, and why teachers decide to use cooperative learning in teaching their
curriculum; (b) the kinds of learning outcomes teachers address within cooperative
learning based lessons; (c) whether or not the learning activities encompass outcomes
outside the specific subject area (e.g., reading skills, writing skills, thinking skills, problem solving skills, social skills, etc.); and (d) at what levels of Bloom’s Taxonomy of learning and thinking processes students are asked to perform while doing cooperative learning activities. To carry out this study purpose, the research design for this study will be based on the following research questions.

First, the overarching research question for this study is, “Where, how, and why do middle school core content teachers from a high poverty urban school with low levels of assessed student reading proficiency use cooperative group learning as an instructional model in their classes?” To explore this overarching question further, the following sub-questions were also investigated:

1. At what levels of Bloom’s Taxonomy are the cooperative learning activities targeted?
2. What content area learning outcomes do the cooperative learning activities address?
3. What, if any, academic competencies or learning outcomes, not directly ascribed to that content area, do teachers incorporate into the learning activities?
4. What, if any, non-academic competencies or learning outcomes (e.g., social skills, creativity, decision-making skills, etc.) do teachers incorporate into the learning activities?
5. How do the teachers assess the students’ learning outcomes from cooperative learning lessons?
Theoretical Foundation

**Constructivism**

The goal of the middle school is to prepare adolescents to become responsible, capable citizens to further our democratic society. Social interaction plays a fundamental role in this process in that it focuses on the role that interaction plays in learning. The principle that learning is a constructive activity is based on the idea that everyday learning occurs during problem solving and working (de Kock, Sleegers, & Voeten, 2004). The social aspects of constructivism—negotiating meaning with others through discussion or other means—is supported by the work of Lev Vygotsky (1978), who viewed thinking and learning as contextualized social practices (McLaughlin & DeVoogd, 2004). As citizens, we find ourselves in cooperative situations daily through our jobs, families, travels, and other commitments.

Zemelman, Daniels, and Hyde (1998), in their book *Best Practice*, recognize literacy as socially constructed and socially rooted. The authors contend that classrooms that consistently allow for expression and collaboration, where there are numerous opportunities for students to interact through reading, writing, and talking with other readers, will help the students grow both academically and socially. Cooperative learning is an instructional design that specifically calls for student collaboration around meaningful learning tasks. Moreover, cooperative learning draws upon students’ ability to think interdependently, work collaboratively to solve learning tasks, and share responsibility for learning outcomes.
**Social Interdependence Theory**

Social interdependence theory was introduced in 1949 by Morton Deutsch. The basic premise of the theory is that the structure of the goals of the people in the situation determines how participants interact, and interaction patterns determine the outcomes of the situation (Johnson & Johnson, 1989). Stated simply, social interdependence exists when the outcomes of individuals are affected by each other’s actions (Johnson & Johnson, 1989). The Johnsons define cooperative learning as the instructional use of small groups for students to work together, maximizing their own and each other’s learning. The premise is that “Any assignment in any curriculum for a student of any age can be done cooperatively” (Johnson & Johnson, 1989, p. 327). Educators may choose from three types of cooperative learning programs: (a) formal cooperative learning, which is used for assignments that last from one class period to several weeks; (b) informal cooperative learning, which is used with direct teaching for quick discussions that last from a few minutes to one class period; and (c) cooperative base groups, which last for a semester or year to provide members with the support, help, encouragement, and assistance they need to progress academically. These three plans can be integrated to form an overall instructional program (Johnson & Johnson, 1989). Other ways of structuring cooperative learning include teams-games-tournament, student teams achievement divisions, group investigation, academic controversy, jigsaw, team assisted individualization, complex instruction, the structural approach, and the Cooperative Integrated Reading and Composition Program (Johnson & Johnson, 1989).
Social Constructivism

Social constructivism, founded by Lev Vygotsky (1962), is based on the social interactions of students in a classroom along with a personal critical thinking process. Cultural influences such as ethnicity, identity, and biological differences play a major role in how students learn in the classroom. This theory suggests that when students are allowed to talk about their cultural differences as they would the content, they will be more understanding of not just themselves, but of others around them, and would be more open to learning the content. Students can construct, on their own, a personal meaning of the content when they are allowed to dialogue as would be the case in cooperative learning. Language usage is the most important process in a social constructivist classroom. Not only does language enhance learning, it precedes knowledge or thinking according to Vygotsky (1962).

One main theory of Vygotsky is the zone of proximal development, or ZPD. The ZPD is described as a zone the child reaches after receiving help in learning a concept (Vygotsky, 1962). Scaffolding, another characteristic of this theory, plays a part in the ZPD and is also reflective of cooperative learning. Simply stated, scaffolding acknowledges that children learn more effectively when they have support from others; this assistance increases their ZPD and the child is able to learn more. Teachers provide scaffolding (i.e., assistance) with an activity after allowing students to work initially on their own. Cooperative learning is a part of creating a social constructivist classroom in that the social interactions of the teacher and the students are integral to the learning process and in developing deeper understanding (Powell & Kalina, 2009).
The social interaction activities (mingling and interacting with their peers) are on the top of the list of things to do for adolescents (students between the ages of 12 and 14). If adolescents are expected to get along with others, and communicate well both orally and in writing, then social interaction activities will need to play a larger part in the classroom. Students learn to cooperate, to work together to accomplish shared goals through these activities. Success in school is not only a function of the relationship between each student and the text, and between each student and the teacher; it is also, as Kohn (2000) sees it, a function of the relationship among the students: how they show, watch, talk, listen, assert, and rebut.

Methods Overview

An action-research case study approach was used to determine the critical thinking skills students use while working in their core classes using a cooperative learning framework. McMillan (2000) writes, “A case study is an in-depth analysis of one or more events, settings, programs, social groups, communities, individuals, or other ‘bounded systems’” (p. 266). This study was conducted in an urban middle school. Participants in the study were four middle school teachers who teach in one of the four content areas of language-arts, social studies, math, or science and demonstrated a willingness to work with the researcher to co-examine the teacher’s process of designing and carrying out a lesson using a cooperative learning framework to teach the course content. Within the case analysis for each of the four teachers’ demonstration of their use of cooperative learning, the researcher explored if, where, and how the teacher also incorporated skills and processes related to literacy (in particular, reading strategies), critical thinking, and/or skills of social engagement and personal management.
Conceptual Framework

A central theme of this research is that teaching and learning are two highly social activities. A social environment is created when the activities of beings are associated with other beings (Kohn, 2000). Albert Bandura’s Social Cognitive Theory (SCT) identifies learning as a social activity that occurs between the teacher, student, and peers and that the manifestation of learning is an interplay between the person, the environment, and behaviors. Applying the social cognitive theory approach to learning in the classroom helps educators to create a climate where the focus is not on behavior but on learning and where students feel safe to work with peers of different strengths, abilities, and backgrounds. Social interaction is critically important for adolescents, making it possible for them to understand how to get along with others, and how to communicate well both orally and written.

Success in school is a function of the relationship between the text, the teacher, and the student, but also of the relationship among the students (Kohn, 2000). The view of learning as a social activity between the teacher, student, and peers implies the existence of a community of learners. In middle school, in particular, integrative strategies such as those of direct instruction and interactive activities such as cooperative learning are recommended in order to better address the specific learning and social needs of adolescents who tend to prefer working with peers.

Chapter I Summary

Limited reading skills which impede comprehension and interpretation (Faggella-Luby et al., 2009), coupled with difficulty in reading informational text, makes it difficult for adolescents to obtain successful literacy skills. Compounding this concern, studies
show that literacy demands are increasing (American Federation of Teachers, 2007) but millions of adolescents lack the necessary literacy skills to be able to use reading and writing effectively enough to learn from the subject-matter content they confront in secondary school (AFT, 2007). Numerous reports and articles have pointed out the deficiencies of American education, and most seem to agree that today’s students have command of facts and rote skills but lack higher-order thinking and reasoning skills necessary for success in the 21st century.

Traditionally, classrooms have been highly competitive, favoring students that can work well on their own (Ginsberg & Wlodkowski, 2000). Structuring cooperative learning groups in the classroom involves all students: independent as well as dependent learners. In their book, *Best Practice: New Standards for Teaching and Learning in America’s Schools*, Zemelman et al. (1998) note that the new curriculum calls for big changes in the way classrooms operate. Students working effectively in small groups with minimum teacher supervision are reflective of a best practice classroom. Classroom structures such as partner/buddy reading, peer response and editing, reading circles/text sets, study teams, group investigations, and centers are structures that move students toward constructivist learning and critical thinking at the same time. Studies on cooperative learning show an increase in achievement when students work together cooperatively (Johnson & Johnson, 1981; Kohn, 2000; Zemelman et al., 1998).

Research shows that many of our adolescents struggle with comprehension. As a result, the skills of analysis, synthesis, and evaluation are not within their reach, yet these very skills are essential for success with 21st century literacy. Content area reading demands that students not only pick up factual information as they read but that they are
also capable of analyzing, synthesizing, and evaluating multiple forms of information. This study explores the layered complexities of teaching middle school students within a core curriculum context that places high demand upon students’ literacy, thinking, and social/emotional development.
CHAPTER II
LITERATURE REVIEW

Background

This chapter begins with a review of the literature that highlights and explains the current state of secondary content literacy instruction. Focusing on efforts to build effective literacy support in the middle school environment, content literacy instruction, as well as benefits and barriers of both critical thinking and cooperative learning will be examined.

Secondary level students in grades 7-12 can experience devastating consequences as a result of not being able to read well. These consequences can be both social and economic including lack of a high school diploma which in turn decreases the likelihood of obtaining a higher degree of learning, and ultimately the possibility for underemployment or unemployment in addition to possible challenges in maintaining daily life (Peterson, Caverly, Nicholson, O’Neal, & Cusenbary, 2000).

Secondary Content Literacy Instruction

Content literacy instruction in middle and high school calls for the use of a variety of content-appropriate literacy strategies and for teachers to possess knowledge of the importance of content literacy and students’ learning (Biancarosa & Snow, 2006). Literacy of the middle and high school years is more challenging, requiring not only basic literacy skills but inevitably new literacy skills, such as reading purposefully, selecting materials that are of interest, learning from the materials, figuring out the
meaning of unfamiliar words, integrating new information with existing knowledge, resolving conflicting content in different texts, differentiating fact from opinion, and becoming familiar with the writer’s perspective (Biancarosa & Snow, 2006).

Emphasizing the need for continued literacy instruction beyond third grade, Snow and Moje (2010) argue that an early vaccination of reading instruction does not permanently protect against reading failure. The authors refer to this premise as the inoculation fallacy. As a case in point, the National Assessment of Educational Progress (NAEP) scores for 4th graders in 2007 shows improvement; however, there was no improvement for 8th or 12th graders, which contributed to an increase in the demand for adolescent literacy. This increased demand for secondary literacy instruction arises from policymakers such as the National Institute for Literacy and from scholars such as Snow and Moje whose model of literary instruction for adolescents has three components: continued development of general language and literacy skills, incorporating literacy into content-area instruction, and supporting struggling readers.

Texts and content knowledge also have a bearing on adolescent literacy improvement. Noting that texts in content-areas have different structures, language conventions, vocabularies, and criteria for comprehension, Snow and Moje, (2010) suggest that content-area teachers must understand the rules for reading and writing in their disciplines and know how to teach those rules to students. Students must have content knowledge in order to use their thinking skills properly and effectively (Rotherham & Willingham, 2009). Learning to teach content literacy to struggling secondary readers is an issue that all middle and high school teachers should be equipped to address in their instruction (National Institute for Literacy, 2007).
Views on content literacy have varied from emphasizing developing for extracting information from text to engagement with reading and writing text, and to the current perspective that highlights the important role of discussions along with reading and writing which enable children to construct and co-construct knowledge (Fisher & Ivey, 2005). As a result, content literacy practices are more reflective of students’ active engagement in knowledge construction as opposed to transmission of knowledge by teachers (Adams & Pegg, 2012).

Current views of content literacy situate literacy as an integral part of content learning within each discipline, as opposed to a collection of generic skills that can be applied to any discipline. To emphasize the argument, “Every teacher, a teacher of reading,” researchers (Adams & Pegg, 2012) advocate a line of reasoning that since all learning is language based, the focus to literacy in all disciplines is needed to effectively teach and learn disciplinary content. Adams and Pegg studied 26 science and mathematics teachers’ enactment of specific content literacy strategies over a two-year period. Teachers recruited were from high-need districts, taught grades 6 through 12, and participated in the project for one or two years. The authors found through initial classroom observations that all teachers included new content literacy strategies in their instruction; however, a difference existed in the way they enacted the strategies. The alignment of instructional goals and current practices motivated how the teachers enacted the strategies. The strategies were modified if the teachers’ instructional goals and classroom practices conflicted. This tendency to adapt or modify content literacy strategies in order to minimize the conflict that the teachers’ goals, classroom practices, and use of the strategies might present is not uncommon.
In a similar study involving teaching practices, Klecker and Pollock (2005) focused on the teaching practices of high achieving schools and that of low achieving schools to determine to what degree middle and high school teachers used researched-based strategies to teach reading across the curriculum. Thirty-nine schools (20 high schools, 15 middle schools, and three K-8 schools) participated in the study. Teacher participants completing the survey taught grades 8, 9, or 10. Prompting their study is the goal of reaching academic “proficiency” by 2014 since state scores on the Core Content Tests revealed 44.3% of middle and 71.25% of high school student scored below “proficient.” The study focused on the western region and the eastern region of the state only.

Klecker and Pollock’s study revealed that teaching practices in schools with high reading achievement scores differ from teaching practices in schools with low reading achievement scores. Specifically, there was more frequent use of three research-based teaching strategies by teachers in schools with higher scores on the 10th grade reading test. The teachers from this group revealed that: (a) “I alter the list of vocabulary words provided by the textbook,” (b) “I involve students in writing at some point in the lesson,” and (c) “I use grouping (pairs to small groups) successfully to engage in student learning.” The research strategy used most frequent by teachers in schools with lower scores on the state test involved, “I give students a specific task to accomplish during the lesson.” These studies point to the need for content literacy instruction to continue beyond high school, for middle and high school teachers to be familiar with effective literacy strategies, and for teachers to apply those strategies in a purposeful way that is responsive to student needs.
Adolescent Literacy

The International Reading Association (IRA, 2012) distinguishes adolescent literacy of the 21st century as the ability to read, write, understand, interpret, and discuss multiple texts across multiple contexts. Examples of the need for reading instruction at the middle and high school level are often depicted in national reports; yet, some secondary teachers resist the role of teaching reading (Fisher & Ivey, 2005).

Historically, instruction in reading was not customary at the middle and high school levels for a number of reasons. One possible explanation is that training in how to teach reading was usually done at the elementary pre-service level. Some scholars (Freedman & Carver, 2007; Rainey & Moje, 2012) view all teachers as teachers of literacy development since each content area uses reading, writing, speaking, listening, and thinking in different ways for different purposes. O’Brien, Stewart, and Moje (1995) identify other possible barriers to teaching reading at the middle and high school level as beliefs of secondary school educators, inadequate professional development, organizational and structural impediments, lack of understanding about what needs to be done, lack of focus, and an unwillingness to make the changes necessary to support adolescent literacy development.

Adolescence is characterized as a period of many challenges and developmental changes that if left unaddressed could leave many of our young 10–15 year olds unprepared to lead stable and productive adult lives. Teaching adolescent students requires differentiated teaching strategies that account for (a) a high need for socialization, (b) their need to develop social skills, and (c) their need to see relevance in their learning. Teachers must create conditions for students to feel safe (eliminate
sarcasm, put-downs, hurtful, unnecessary, and inappropriate criticism). Middle schools are also challenged to give students a stake in what’s going on, thereby motivating them to want to learn and to achieve, and to address the fundamental emotional needs they experience as adolescents.

One of these fundamental needs is relationships. If the learning activity meets the emotional needs of students, they will more likely engage in the learning (Rogers & Renard, 1999). Another way to ensure success for all middle grade students is to recognize that young adolescents need group approaches to learning. Allowing students the opportunity to discuss, analyze, express opinions, and receive feedback from peers allows learning to take place. Peer involvement is critical during early adolescence as the influence of peers increases and becomes more important to the adolescent (Carnegie Council on Adolescent Development, 1989).

Several subsidiary problems become apparent as secondary school educators are given credit, first, for recognizing that many of their students lack the necessary reading and writing skills to be successful in their subject matter. Second, these same teachers are inundated with recommended practices to put in place in the classroom, many of which are overly specialized, too generic, or miscellaneous (Meltzer, Smith, & Clark, 2001). This can create a conflict for teachers caught between what they know students need and what they know about how to respond to those needs. The result can be a spirit of inaction for some teachers struggling for certainty about what strategies to use in which situations with which students, compounded by confusion about how to incorporate those multiple strategies into a coherent instructional design.
To assist teachers and administrators in supporting adolescent literacy development, the Center for Resource Management (CRM) developed the Adolescent Literacy Support Framework. The framework is designed as a school-wide initiate with four Key Components: (1) motivation, relevance to social and emotional needs of adolescents; (2) research-based strategies, reliance on proven strategies and techniques; (3) across the curriculum, reading and writing in all content areas; and (4) organizational support, leadership capacity to ensure necessary support, sustainability and focus. The framework emphasizes addressing the needs of all students through the use of best practices in teaching and learning (Meltzer et al., 2001).

Faggella-Luby, Ware, and Capozzoli’s (2009) work highlighted common threads related to all students as well as common threads related to specific populations of struggling students in their search to find ways to improve reading for older students. In relation to all students, Fagella-Luby et al. revealed that core literacy instruction should include the following: (a) teaching essential course content, or big ideas which allows students to develop deeper understanding and mastery of critical concepts; (b) problem solving skills that can be used to learn content area knowledge and instruction in comprehension strategies; and (c) strategies to build students’ confidence so as to motivate them to want to engage in the content area literacy tasks.

Common threads Faggella-Luby et al. (2009) identified for specific populations of struggling readers included: (a) reinforcing previous core literacy practices in content area courses, (b) providing multiple-tiers of increasingly intense instruction, (c) cuing students to activate prior knowledge and skills, and (d) teaching content-based language and literacy. Content-area teachers, while they are not reading teachers, can be
instrumental in capitalizing on the reading skills and processes that help students to become independent learners.

Our current interest in adolescent literacy is not new (Jacobs, 2008); it is the same as that of prior generations: to provide the best education possible for our children, one that allows them to live the most significant lives that they can. This ongoing interest in adolescent literacy requires intentional input in the form of motivation from the students themselves in order to positively impact academic achievement.

**Motivation and Engagement**

Student motivation has been shown to enhance academic achievement as it is crucial to engagement (Guthrie & Wigfield, 2000) and it activates behavior. In elementary, middle, and high schools across America sit students who are unmotivated, who are not inclined to be involved in the intellectual work of learning. Marks (2000) attributed this lack of motivation to factors in students’ personal background and school characteristics, such as curricular fragmentation, weak instruction, or low expectation for learning. Exposing students to interesting content (Alexander & Judy, 1988; Center on Education Policy, 2012; Marks, 2000; Nichols & Miller, 1994) and implementing practices that encourage active learning such as cooperative learning (Nichols & Miller, 1994; Slavin, 1989) suits well with the nature of the middle school concept with its focus on the multifaceted changes and challenges of early adolescence.

Looking from a developmental perspective, the school and classroom learning environments must match the adolescents’ merging needs. Students, like adults, are motivated when they experience success (Braddock & McPartland, 1993; Nichols & Miller, 1994). Considering the interaction of content and strategy knowledge with
academic performance calls our attention to the classroom as well as the school. Does the school, and thus its classrooms, perpetuate inert knowledge or reward routinized nonstrategic behavior? This question was raised by Alexander and Judy (1988) to challenge us to look closely at how motivational and social-contextual factors may impact the acquisition and use of domain-specific and strategic knowledge.

Much of the research on adolescent motivation agrees that engagement and interests of the students significantly affect student achievement. Braddock and McPartland (1993) identified other sources of student motivation as (a) success in school, i.e., motivation of immediate rewards that builds self-confidence as a learner; (b) relevance of schoolwork to current interests and future goals, i.e., intrinsic and instrumental motivation; (c) human climate of support of students by teachers and peers, i.e., social motivation; and (d) help with personal problems, i.e., elimination of counterproductive motivations. These four aspects of student motivation are cited as especially beneficial for the special hardships that are often experienced by disadvantaged middle school students. The “disadvantage” recognized here is largely due to developmental needs of the adolescent such as the physical, cognitive, and psychosocial growth and development that is so pronounced during the ages of 10 to 15 (Braddock & McPartland, 1993).

Nichols and Miller (1994) examined the effects of a form of cooperative group instruction on students’ motivation and achievement in Algebra II. The researchers choose to use Robert Slavin’s cooperative learning treatment, Team-Assisted Individualization (TAI), because of its earlier success in producing achievement gains in mathematics. The cooperative learning treatment resulted in higher Algebra II
achievement than the traditional lecture method. Students in the cooperative learning class had higher perceptions of ability and were more learning goal focused than students in the traditional class. Finally, greater intrinsic valuing of Algebra II was expressed by students in the cooperative class than those in the traditional lecture class. Because of time constraints originating from the school setting, the researchers acknowledge that while the TAI treatment did yield positive results, their results do not indicate which factors in the cooperative treatment caused the observed differences in achievement or motivation; however, their work does shed some light on the issues (Nichols & Miller, 1994).

Marks’ (2000) study reinforced much of the earlier research for students in elementary, middle, and high school, revealing that engagement in academic work was lowered as grade level increased, that girls were significantly more engaged in instructional activity than boys, and that students need authentic academic work that involves them intellectually in disciplined inquiry to solve meaningful problems, with relevance in the real world, and work that interests them. The more successful the students are in school, the more motivated they will be; the less successful, the less motivated. Although Marks did not offer an explanation, parental involvement was found to also enhance engagement for elementary and high school students but not for middle school students.

Teaching Adolescent Literacy

Research on which intervention is most effective with which specific population of adolescent students is needed (National Institute for Literacy, 2007) and as teachers, we must strive to be aware of instructional strategies that can be used to improve the
literacy level of all our struggling readers. Literature on the effectiveness of instructional approaches or programs for adolescents is scarce according to the National Institute of Child Health and Development (NICHD, 2007). However, NICHD recommends using explicit instruction to teach specific skills, along with teacher modeling, guided practice, and individual practice.

Social-emotional Learning

An important role of school is to foster not only the cognitive development of students but also their social and emotional development (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). A 2008 technical report from the Collaborative for Academic, Social, and Emotional Learning (CASEL) prepared by Payton et al. reveals that social-emotion learning (SEL) programs have had a positive impact on academic outcomes by focusing on students’ self-awareness, self-management, social awareness, relationship skills, and responsible decision making. Learning takes place as we intermingle with one another, whether we are collaborating with our parents, peers, teachers, or employers. The resulting relationships affect how and what is learned. There is widespread agreement that schools should graduate students who can recognize and manage their emotions, form positive relationships, solve problems, become motivated to accomplish a goal, make responsible decisions, and avoid risky behavior (Beland, 2007). However, disengagement is evident in many students as they progress from elementary to middle to high school (Payton et al., 2008); students who do not possess the social-emotional skills need to get along with others. There is further evidence that these students become disconnected from school which in turn can affect their health, behavior, and their academic performance (Blum & Libbey, 2004). Focusing on social and
emotional learning can reduce problem behaviors, promote positive adjustment, and enhance academic performance (Payton et al., 2008).

The academic achievement gap exists not only because of low cognitive skills but also because of the lack of effective interventions and proper supports that help to establish positive relationships. Without relationship skills, students will continue to struggle to meet the challenging demands of today’s society. In response, social and emotional learning (SEL) programs that promote skills for both children and adults are now in use in some schools. The programs assist students and adults to recognize and manage their emotions, set and achieve positive goals, demonstrate caring and concern for others, establish and maintain positive relationships, make responsible decisions, and handle situations effectively (Payton et al., 2008).

SEL program features further highlight the role schools must play in not only targeting students’ cognitive development, but their social and emotional well-being as well (Durlak et al., 2011), because a student’s success academically is, to some degree, dependent on their social and emotional status. Consistent with this belief, the state of Illinois now requires every school district to develop a plan for implementing social and emotional learning (SEL) programming in their schools (Durlak et al., 2011).

**Urban Education**

Urban education has been the focus of ongoing discussions aimed at urban school improvement for over 40 years. Urban schools reflect the problems associated with poverty: low student achievement, high student mobility, high dropout rates, and high levels of school failure (Sadovnik, 2007). Conversely, student achievement in urban schools reflects the relationship between socioeconomic status (SES), race, ethnicity, and
educational performance. African-American and Hispanic students have lower academic achievement than White and Asian-American students, and students from lower SES backgrounds have lower levels of academic attainment and achievement than students from higher SES backgrounds. Due in part to the large percentage of poor and African-American and Hispanic students in urban schools, urban schools reflect the achievement gaps that No Child Left Behind is expected to eliminate (Sadovnik, 2007).

The importance of this focus on the achievement gap is further emphasized when considering that schooling is the most common mechanism for upward mobility. It is also important to recognize the issue of equity and access to resources relative to urban education. It has been noted by some that the higher the SES, the higher the access to resources (Huitt, 1999). Ironically, as Huitt points out, simply resolving equity issues may not be the answer since this strategy leads to those who are already ahead continuing to progress faster than those who are less prepared.

Improving the Academic Achievement of the Disadvantaged is the heading given to sec. 101 of Title I of the Elementary and Secondary Education Act of 1965 whose purpose is to “ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments.” The literature on academic standards encompasses the newly adopted Common Core State Standards (CCSS) (Coleman & Pimentel, 2012) intended to level the playing field for all students. Assuming that all states implement CCSS, the question then becomes, what happens with the students who struggle to read and those who start out behind? CCSS attempts to address this concern by including a recommendation that “All students (including those
who are behind) have extensive opportunities to encounter grade-level complex text” (p. 3). Acknowledging the potential challenge perhaps of having a class of 30 or more students at various levels of literacy, CCSS further recommends extra assistance, along with supplementary opportunities to read text that students can comprehend without the use of additional support.

The disadvantaged referred to here includes students from urban schools and the low achievement often associated with urban education. Researchers have identified a number of reasons for this low achievement. Urban middle schools in particular have greater faculty turnover, higher student mobility, less experienced administrators, lower SES, and lower student achievement (Sadovnik, 2007; Mariage et al., 2009). Shippen, Houchins, Steventon, and Sartor (2005) caution that poverty and low socioeconomic status in and of itself does not place poor children at academic risk. Instead, the lack of opportunities and other constraints encountered by students of low SES have a greater bearing on their likelihood for success. This includes the literacy challenges students face in school, taking into account cultural differences as well as the previously discussed disadvantages.

**Reading Achievement Gap**

National data (National Assessment of Educational Progress, 2007) continue to confirm that African American students score lower than students from other racial groups on measures of reading achievement. Looking strictly from a racial group comparison view fails to reveal the specific issues and factors that affect reading achievement for both African American and White students (Flowers & Flowers, 2008). Seeking to answer the question of what issues and factors affect reading achievement for
African Americans, earlier studies looked at how early language development affects later reading achievement, how family and community backgrounds have influenced the development of reading achievement for African American students, how the type and quality of educational experiences African Americans are exposed to influence literacy development, and how lower levels of exposure to literacy based experiences result in another limiting factor for African American students (Flowers & Flowers, 2008).

Other factors that are thought to contribute to underachievement in reading for minority students include teacher classroom behavior management and expectations, class size, high student mobility rates, level of parents’ education, and student off-task behavior (Shippen, Houchins, Calhoon, Furlow, & Sartor, 2006). One initiative supported by the No Child Left Behind Act (NCLB), Reading First, reported an improvement in reading skills. However, data at the national level show that the racial achievement gap in Reading First schools still exists. This finding, in and of itself, should be cause for concern for educators and policymakers. Flowers and Flowers (2008) analysis of data from the Educational Longitudinal Study of 2002 yielded three major findings: urban African American high school students’ reading achievement was positively affected by family income, by the amount of time they spent doing homework, and finally, by parents’ expectations of their child’s future educational attainment. This ELS 2002 base-year study was carried out in a national probability sample of 752 public, Catholic, and private schools. The data analyzed for this study were taken from 242,991 African American students in 184 urban schools. Approximately 51% of the sample was African American males, and 49% of the sample was African American females. The authors acknowledged limitations of the study, e.g., factors from earlier research that link home
and student factors to student achievement were used instead of school-related factors, such as teacher quality and the organizational culture of the school; the results may not apply to all urban schools; and most of the data were based on student self-reported information (Flowers & Flowers, 2008). Studies such as this provide abundant evidence of how background factors in students’ lives, and in particular, African American students’ lives relate to those students’ academic success. They do not, however, establish causation, nor do they tell the whole story. As Flowers and Flowers acknowledge, some of student background factors are also associated with school-based factors associated with learning opportunity.

Mariage et al. (2009) attempted to understand how some of those school based factors either contribute to or limit learning opportunity. They looked specifically at how leadership, curriculum, professional development, data management, and organizational structures, which the authors noted as the five sub-systems of a school, worked together to support reading achievement. Using the conceptual view of schools as learning organizations, Mariage et al. investigated the reading programming and also compared programming across urban and suburban schools for at-risk readers in six urban and five suburban middle schools. The researchers acknowledged that most of the emphasis on literacy instruction is at the elementary level; therefore, not much is known about middle level literacy instruction. Additionally, federal legislation (No Child Left Behind, 2002) calls for tougher curriculum standards for all students, including students with disabilities.

Focusing on at-risk and special education learners, Mariage et al. (2009) conducted comprehensive semi-structured interview protocols with three school
personnel (principal, special education teacher, and general education teacher) from each of 10 selected school sites. Teacher participants were nominated by the principal with a focus on the teacher’s level of knowledge and experience with the school’s literacy programming. Declining enrollment was evident in most of the suburban schools and in all of the urban schools. The suburban schools met Adequate Yearly Progress (AYP) for the last 3 years, while none of the urban school met the AYP goal. Suburban schools student achievement was beyond the state average on standardized tests (i.e., greater than 50% pass rate) and below the state average (i.e., less than 50% pass rate) for urban schools student achievement. A higher percentage of African American students were in special education in urban schools than the suburban schools (48% and 40%, respectively), and the urban schools had a lower percentage of White students in the make-up of the student population than the suburban schools (38% and 47%, respectively). School enrollment was similar, with an average of 686 for the urban schools and 716 for the suburban schools.

Mariage et al.’s (2009) findings served to confirm earlier findings such as the high achievement in suburban schools and low achievement in urban schools, the overrepresentation of minorities in special education, and the high reported rates of teacher turnover in urban schools. Major findings of this study also include the fact that urban teachers are teaching more classes than suburban teachers, resulting in teacher attrition. Urban middle schools had greater faculty turnover, less experienced administrators, higher student mobility, lower SES, and significantly lower achievement in each of the core areas assessed by the Michigan Education Assessment Program (MEAP). Overall, urban and suburban schools reported difficulties with how data are
gathered and assessed for both general and special education students. These difficulties included how assessments were scored, results were stored, and findings were disseminated. This study also found further discrepancies between urban and suburban schools with great variability in placement for at-risk readers, lack of formal curricula for reading classes, and the use of teaming to improve student learning (Mariage et al., 2009). Each of these findings can be argued to be evidence of the relationship between student and community factors and the level and quality of learning opportunity students experience in the schools.

Finally, the urban schools in the Mariage et al. (2009) study proved to be less able to articulate how the subsystems of leadership, curriculum, professional development, data management, and organizational structures interacted to support one another. A general conclusion from the Mariage et al. study could be that the urban schools were both less responsive to students’ specific characteristics and needs and less likely to use a systemic approach to improving their response to those needs and, thus, student academic performance. Senge (1990) credits learning organizations that have a shared vision mentality, a common goal, with creating a sense of commonality throughout the organization and giving coherence to the various activities. The idea of a shared vision appears to not have been promoted in the above research, leading to confusion over how the subsystems worked. Again, all of these factors ultimately impinge on learning opportunity.

A goal of the No Child Left Behind Act (NCLB), enacted January 2, 2002, is to close the achievement gap between minority and non-minority students and, to that end, some improvement has been made. Scores in reading were higher in 2011 than in 2009
for Whites, Blacks, and Hispanic students, but did not change significantly for Asian/Pacific Islander or American Indian/Alaska Native students according to a 2011 report by the National Assessment Governing Board (NAGB). The White/Hispanic score gap was smaller in 2011 than in 2009; however, there was no significant change in White-Black gap over the same period. On a scale of 0-500, in 1992, the first year the reading assessment was given, 8th graders scored 260. In 2009 and 2011 the scores were 264 and 265, respectively (NAGB, 2011). An analysis of the data suggests that progress over the past two decades was in fact made; however, at this rate of progress, the achievement gap will continue to be a national, state, and local concern for some time.

The NCLB accountability requirement for adequate yearly progress (AYP) in raising overall student proficiency levels and closing achievement gaps has forced some administrators in the lowest performing schools to respond to the charge of improving student achievement or face possible school takeover by adopting a comprehensive school reform (CSR) model (Shippen et al., 2006). Although AYP affects all schools, it tends to have a detrimental consequence on the lowest performing schools. Such schools end up on a “whole-school action plan” or CSR, but some researchers argue that this plan should not be expected to correct what Mathis (2005) refers to as a lifetime of deprivation due to social, economic, and personal problems. Researchers at the American Institutes for Research examined 24 CSR models in 1999 and found that only three of the models examined provided strong evidence of increased student achievement. Perhaps these models still fall short of addressing the fundamental systemic problems of persistently low achieving schools resulting in a continuation of reduced learning opportunity for students in those schools.
For instance, Shippen, Houchins, Steventon, and Sartor (2005) compared the effects of two CSR models in reading for urban middle school students with disabilities who were performing two or more years below grade level in reading: Success for All (SFA) and Direct Instruction (DI). The researchers described SFA as having a prescribed curriculum based on homogeneous grouping in the areas of reading, writing, and language arts. The main components of SFA are (a) one-to-one tutoring, (b) a family support team, (c) cooperative learning, (d) an on-site facilitator, and (e) a building advisory team. Based on the behavioral approach to learning, the DI model utilizes homogeneous groups to focus on mastery of meaningful reading through explicit teacher direction. The emphasis in DI is on fast-paced, scripted, well-sequenced, rule-based, and highly focused lessons. These two models were selected because they were being implemented in local professional development middle schools. Although the students in this study were students with disabilities, students in the lowest performing schools were often two or more years below grade level in reading. The results indicated that the students showed little or no reading skill gain from either of the CSR models, and as a result, remained markedly behind. However, other researchers have found that the DI approach has had a long history of effective results for not only students with disabilities but also for at-risk students (Shippen et al., 2005). The results of such studies are confusing and most fail to drill down into how teachers actually carry out the school reform model on a day-to-day basis.

Bridging the achievement gap will require addressing the social inequities of our urban communities. Factors both inside schools—unequal funding, unqualified teachers, low expectations and dumbed-down curricula, and high turnover of both teachers and
principals, as well as outside of schools—inefficient housing, health care, and environmental problems such as lead paint and other toxins in the urban environment, are all part of the student success equation (Sadovnik, 2007). Mathis (2005), while mimicking some of the same concerns as Sadovnik, adds other factors that are essential to bridging the achievement gap, such as health, mobility, housing, nutrition, unemployment, family structure, medical and dental care, within schools early education programs, full-day kindergarten, extensive summer programs, small class sizes, after-school programs, adequate materials and a host of other factors. Again, while useful in better understanding more and more of the factors that are associated with academic achievement, they do not present a clear picture of how teachers utilize the practices most consistently associated with improved student success in a thoughtful, organized, and mutually supportive way to increase learning opportunity.

Despite the confusion regarding how to systematically eliminate the achievement gaps that exist in U.S. schools today, we do know that the gaps we see in literacy development directly correlate to the gaps in other academic areas. Moreover, these gaps increase from elementary to middle school to high school while literacy proficiency for those students who start middle school behind in reading development continues to decline. This said, emphasis on the achievement gap is further warranted when considering that school is the most common avenue for upward mobility. Minimum literacy skills may have been acceptable at an earlier point in this country’s history; however, more advanced literacy skills are required for success in the 21st century labor market. In addition, the number of years of schooling an individual completes primarily determines his or her placement within the social class system (Farkas, 2007).
Inequity in educational opportunity is real. Bills and Rosenbaum (2007) note that the good life afforded by schooling is not equally accessible to everyone and gives, as an example, that at all levels of education, African Americans and Hispanics are more likely to be unemployed than are Whites. While that may be, inequity within educational opportunity is something that U.S. schools are expected to address head-on. This pertains to both the outcomes of education and the inputs. In their 1998 national report looking at the distribution of resources for eighth grade math instruction, Raudenbush, Fotiu, and Cheong (1998) argue that inequality in access to resources for socially disadvantaged students is key in contributing to the achievement gap as well.

Raudenbush et al (1998) also reported findings that suggest that socially advantaged students typically have better access to a favorable school disciplinary climate, advanced course offerings, teacher subject-matter preparation, and emphasis on reasoning during classroom discourse. Rather than focus on NAEP student outcomes, the researchers chose to focus on student access to key resources for instruction, indicating that NAEP state results (i.e., “report card”) can be misleading since “the typical report card provides unadjusted differences between states in academic proficiency” (p. 254), although some of the information is useful. As a result, states that are disadvantaged due to demographics are portrayed overly negative and a much better picture is portrayed of states with the more advantaged students (Raudenbush et al., 1998).

Discussions of achievement gaps often include questions of home environment inequality and school environment inequality. Interventions provided both at the school and classroom level designed to neutralize challenges stemming from a student’s social status may help to improve mean achievement; however, Raudenbush et al. (1998)
question how doing so will help to reduce inequality in resources. Designed with a focus on resources rather than on student proficiency, Raudenbush et al. studied four indicators of access to resources for mathematics learning in eighth grade. The researchers utilized data obtained from the 1992 Trial State Assessment (TSA) of NAEP reports, which included 41 states. The indicators selected were school disciplinary climate, access to high school algebra, teacher subject-matter preparation, and teacher emphasis on reasoning in the classroom. Results showed substantial evidence of inequality in access to resources as a function of social background. Other key findings of their study include: (a) the level of parental education is significantly related to access to a school with a favorable disciplinary climate and a school that offers high school algebra for eighth graders, and (b) social background predicts the probability that an eighth grader will have a teacher who majored in mathematics and a teacher who emphasizes reasoning during mathematics instruction. While these and other researchers are coming at equity in access to learning opportunity in different ways, one common feature of findings from such studies centers on the preparation, longevity, and competency of the teacher. In other words, learning opportunity may be about many things, but it is always about access to teachers who know what they are doing and have a broad repertoire of skills and strategies to increase learning opportunity for a broad range of students and student background factors.

Clearly, access to algebra at eighth grade places the baton in the hands of the state and the school district. The researchers in the 1998 Raudenbush et al. study propose that NAEP provide a report on the access that states provide to key resources for learning. This report would supplement, not replace, the reporting of means, “report card” report
which is currently in use. Interestingly, real estate prices fluctuate depending on the rise and fall of test scores. Higher test scores results in higher tax revenue available to the schools from property taxes. When students’ zip code can ultimately determine the quality of schooling they receive, it does signal the need for a more equitable way of compiling data along with serious policy initiatives to more equitably distribute opportunity. Rather than a focus on the reporting of means, which can be difficult to interpret and misleading, Raudenbush et al. (1998) recommended that “as we assess student progress in subject-matter proficiency, we also assess the extent to which the education system provides resources that support such student progress” (p. 226).

Again, one of the most critical among those resources, regardless of the subject matter, is the quality of the teachers. The other half of the equation is the resources, training, and support teachers receive to achieve greater equity of learning opportunity for all students, regardless of background and circumstances. The conversation about equity in the degree to which schools can or do provide the supports that teachers and students need for achieving academic success is relevant to this study in that distribution of resources and support at the classroom level may be one way to understand which instructional strategies teachers utilize in teaching core content area courses in middle school and the ways in which teachers incorporate those strategies into an overall instructional design for their classes.

**Supports for Reading Development at the Middle School Level**

The current state of adolescent literacy as depicted in a number of reports (The Institute of Education Sciences, 2008); The National Governors Association (NGA, 2005) sees the challenge to educate the academically diverse population of adolescents as
a call to action. The IES looked at reports that were primarily related to instruction, resulting in the publication of a practice guide, *Effective Classroom and Intervention Practices*, which proposed five recommendations for improving adolescent literacy at the classroom level: (1) provide explicit vocabulary instruction, (2) provide direct and explicit comprehension strategy instruction, (3) provide opportunities for extended discussion of text meaning and interpretation, (4) increase student motivation and engagement in literacy learning, and (5) make available intensive and individualized interventions for struggling readers that can be provided by trained specialists. The National Governors Association (2005) published a guide, *Reading to Achieve: A Governor’s Guide to Adolescent Literacy*, which highlighted five strategies for improving adolescent literacy at the state level. Other reports reviewed by Faggella-Luby et al. (2009) addressing adolescent literacy with a focus primarily on infrastructure included: *The Next Chapter: A School Board Guide to Improving Adolescent Literacy* (National School Boards Association, 2006), an informative guide for educational leaders spelling out the research that can be done at the state and district level and supportive of the work of schools and teachers, and *A Critical Mission: Making Adolescent Reading a Priority in SREB States* (Southern Regional Educational Board, 2009). The issues inherent in this report are applicable to all states. Recommendations include: (a) establishing adolescent literacy as a state priority, (b) higher standards and assessments for middle and high school reading and (c) professional development for teachers and school leaders. Finally, a report prepared by Salinger (2011), *Addressing the “Crisis” in Adolescent Literacy*, and published by the American Institutes for Research, specifies responsibilities that
administrators and teachers might assume in their effort to address the unique educational needs of struggling adolescent readers.

Denti and Guerin (2008) have observed that “students in secondary schools who have been identified as having reading skills that are significantly below grade level rarely get the support they need to learn to read successfully” (p. 180). One intervention, known as Response to Intervention (RTI) used initially with learning disabled students at the elementary level, has gained wide recognition in the secondary environment. The National Center on Response to Intervention (NCRTI, 2013) identifies RTI as a multi-level prevention system designed to allow school staff to instruct all students in accordance with their level of educational need. Studies show that a disproportionate number of minority students are in special education, in part due to the procedures and criteria used to identify students with learning disabilities (Wood & Blanton, 2009). A product of the 2004 reauthorization of the Individuals with Disabilities Education Act (IDEA), RTI has as its focus to build support and improve instruction in general education classrooms (Denti & Guerin, 2008). Utilizing RTI, students are given intensive, research-based instruction before being placed in special education. Three progressively intensive tiers of service make up the structure of RTI, as described by Denti and Guerin:

1. At the secondary level, Tier I includes the core content curriculum classes. The identified literacy skills are integrated into each subject and taught by all teachers.

2. Tier 2 is a class that provides more intense instruction in the literacy strategies that increase comprehension and vocabulary skills and can be applied by
students in their core content area classes. Schools identify the school-wide strategies that they determine best reflect the needs across all of the content areas.

3. Tier 3 is the most intense level of support and Tier 3 classes provide a more comprehensive core reading curriculum that includes phonological, orthographic, morphemic, semantic, and syntactic components. (p. 184)

Full implementation of the RTI intervention design is intended to provide adolescents who struggle to read with intensive explicit instruction in essential literacy skills within the regular classroom, within special classes, and within special one-on-one services to whatever degree is needed to provide each student with the appropriate learning opportunity for their particular learning profile and needs. Thus, RTI is, by design both preventive and responsive.

Another key component of RTI is the focus on culturally and linguistically responsive practices by teachers and staff. Differentiated instruction addresses both the cultural and linguistic concerns in that instruction is designed according to how students learn. It also builds on students’ knowledge and experience and is language appropriate (Denti & Guerin, 2008) Adolescents, and especially adolescents who delayed in reading development, are some of our most vulnerable students whose ability to read and write tends to diminish as they progress through the school system, creating the need for more remedial courses for those students entering college (Denti & Guerin, 2008). Sometimes an adolescent’s reading development delay can be associated with cultural and language factors that make it difficult for students to relate to or navigate reading material grounded in a Western English speaking culture. Creating a reading and writing context
that helps bridge cultural and language differences is just one more example of the type of Tier 1 intervention teachers may need to consider and be ready to provide.

Teachers may also find that their adolescent readers lack specific reading strategies that are essential for handling increasingly complex content related reading material, e.g., drawing inferences; making inter-text connections; and interpreting graphs, charts, and tables, etc. Further highlighting the need for adolescents to receive direct support for further reading development at the middle school level, a 2008 report, *The Forgotten Middle*, published by American College Test, stipulates that students must develop behaviors in upper elementary and middle grades to improve their academic readiness for college and career. The report also revealed that “an eighth grader’s level of academic achievement has a larger impact on their college and career readiness than anything that happens academically in high school” (p. 2). This implies that strategy intervention is needed well before high school years in order to improve our students’ college and career readiness.

Ness’s (2009) study of strategy instruction examined the extent to which secondary science and social studies teachers included explicit comprehension strategies in routine classroom instruction. Having a solid grasp on comprehension strategies instruction has been shown to have a tremendous impact on adolescent literacy development. All of the teacher participants held state certifications in their content areas with tenure ranging from 1 to 27 years. Racial makeup included seven White and one Asian teacher. Three of the teachers were males and five were females. Twenty-four hundred minutes of direct classroom observations over a three-month period and open-ended teacher interviews provided the data for this study. Findings showed, over the
course of the study, 82 minutes (3%) of reading comprehension instruction occurred; specifically, 79 of the 82 minutes of reading comprehension instruction took place in middle school classrooms with social studies teachers. Additionally, the preferred strategies for the middle and high school teachers were: Question Answering (62 minutes), Text Structure (18 minutes), and Summarization (2 minutes) (Ness, 2009). These findings reveal a very limited incorporation of explicit instruction or application of reading strategies in the core curricular areas.

Slavin, Cheung, Groff, and Lake (2008) reviewed four types of approaches to improving reading: (1) reading curricula (secondary reading textbooks), (2) mixed methods (methods that combined large-and small-group instruction with computer activities), (3) computer-assisted instruction (CAI), and (4) instructional-process programs (methods whose focus is to provide teachers with extensive professional development in implementation of specific instructional methods). The review did not include any studies in the secondary reading curricula category as none of the studies met the criteria for inclusion. Two widely used secondary reading programs, READ 180 and Voyager Passport, were included in the review as mixed-method models.

Eight studies of CAI programs were divided into two categories: (1) supplemental CAI programs (Jostens and the Computer Curriculum Corporation’s integrated learning system), which provides additional instruction based on the students’ assessed needs while supplementing traditional instruction; and (2) computer-managed learning systems, which included only one program, Accelerated Reader. This supplemental program provides a computer assessment of students’ reading levels along with suggestions of reading materials.
Instructional-process programs fell into three categories: cooperative learning, which included peer-assisted learning strategies (PALS); student team reading (STR); and The Reading Edge. Strategy instruction programs included Reading Apprenticeship, Xtreme Reading, Benchmark Detectives Reading Program, and Strategy Intervention Model (SIM), and the comprehensive school reform programs known as Talent Development High School (TDHS) and Talent Development Middle School (TDMS).

The researchers used a rating system that categorized the reading programs as follows: strong evidence of effectiveness, moderate evidence of effectiveness, limited evidence of effectiveness, insufficient evidence of effectiveness, and no qualifying studies. Findings showed that none of the programs qualified for the strong evidence of effectiveness category; however, four programs—Jostens, The Reading Edge, READ 180, and Student Team Reading—met the criteria for moderate evidence of effectiveness. Two of these programs, The Reading Edge and Student Team Reading, are cooperative learning programs. Programs rated as limited evidence of effectiveness included: Accelerated Reader, Benchmark Detectives, Peer-Assisted Learning Strategies (PALS), Strategy Intervention Model, Talent Development Middle School, and Voyager Passport.

The following programs were categorized as providing insufficient evidence of effectiveness: Computer Curriculum Corporation (CCC), Reading Apprenticeship, Talent Development High School, and Xtreme Reading. The researchers note an important finding that most of the programs with good evidence of effectiveness have a form of cooperative learning at their core and that this is consistent with other reviews. Specifically, this form of cooperative learning allows students to work in groups to help
each other master reading skills with the understanding that the individual learning of each team member depends on the success of the team.

Efforts by the government to improve adolescent literacy include (then) Senator Barack Obama’s introduction of the Success in the Middle Act of 2007 (S. 2227). Originally introduced on October 24, 2007 followed by subsequent yearly introductions, the political will to enact it has not materialized. The legislation would provide grants to states to ensure that all students in the middle grades are taught an academically rigorous curriculum with effective supports so that students complete the middle grades prepared for success in high school and postsecondary endeavors, to improve state and district policies and programs relating to the academic achievement of students in the middle grades, to develop and implement effective middle school models for struggling students.

To date, this legislation has not yet progressed. The prognosis of passing the Success in the Middle Act (H.R. 2316) under the 113th or 114th Congress is 0% (www.govtrack.us). While the current Congress continues to struggle with which bills to pass, 2010 saw the distribution by the 110th Congress of $200 million for a comprehensive literacy development and education program designed to advance literacy skills not just for middle school students, but for students from birth through 12th grade. Known as the Striving Readers Comprehensive Literacy (SRCL) program, this U.S. Department of Education formula grant program awarded discretionary grants to 6 of 35 states in 2010 that applied for funding: Georgia, $25,650,000; Louisiana, $28,500,000; Montana, $7,600,000; Nevada, $14,250,000; Pennsylvania, $38,000,000; and Texas, $66,500,000. Although only 6 states received discretionary funding, 48 states received formula funding in 2010 to start a state literacy team responsible for developing a comprehensive state literacy plan. The SRCL program stipulates how the funds should be distributed: 15% of grant funds to serve children from birth to age 5, 40% towards
supporting students in grades K-5, and 40% distributed equally between the middle and high school. State administration of the grants is expected to consume the remaining 5% (U.S. Department of Education, 2011). The long overdue promise of closing the achievement gap, due in part to concerns of inequity of resources, does not appear to have been addressed through the SRCL programs method of distribution.

Leisure reading might be one way to decrease the reading gap. In general, leisure reading is felt to improve reading skills for students as well as adults. The leisure reading habits of urban adolescents has been shown to affect their overall literacy skills as evidenced by higher scores on achievement tests (Hofferth & Sandberg, 2001). Economically disadvantaged urban students may not have access to books that match their reading and interest levels. The responsibility of working part-time to help the family financially may also limit the amount of leisure reading time available. Leisure reading provides the opportunity to reflect, question, and to reread, without the pressure associated with reading for school purposes. Needless to say, how children spend their time affects their cognitive and social development.

Reading for pleasure as well as other learning activities is associated with higher achievement (Hofferth & Sandberg, 2001; Hughes-Hassell & Rodge, 2007). The literature supports the belief that parents’ education, income, and marital status affect adolescent time use (Zick, 2010). Whether or not the mother is employed also influences adolescent’s time use, with less time spent in school work, organization-related activities, and less leisure time when the mother is employed (Zick, 2010).

Hughes-Hassell and Rodge (2007) investigated the leisure reading habits of 584 urban minority middle school students with one of the major goals of giving students a
voice about their reading preferences. The school is located in the northeastern United States with an enrollment of approximately 1,340 students in grades 5 through 8, of which 584 were minority students at the time of the study. Latinos made up 66% of the student body and African Americans 27%. Also at the time of the study, the state reading assessment revealed that 68% of the students were reading below basic, 23% basic, and 9% proficient. Support from the principal and the school librarian focused on knowing more about the students’ specific reading habits and preferences on the assumption that knowing more about students’ reading behaviors and interests would allow them to improve the existing reading incentive program, which focused on leisure reading (Hughes-Hassell & Rodge, 2007).

Leisure reading results indicated that 72% of the students read as a leisure activity; 22% said they read “constantly,” and 50% said they “read when they get a chance.” Six percent of the students said they do not read; the other 22% said they read only for school (Hughes-Hassel & Rodge, 2007). Gender preferences differed from previous studies in that both males (68%) and females (76%) favored magazines over other genres, such as realistic fiction, fantasy, adventure, and action-oriented texts. Although 69% of the students reported reading more than two books per month outside of school, summer vacation reading was not popular with either gender; 15% of the males and 20% of the females indicated that they continued to read for pleasure during the summer.

Recommendations for educators as a result of this study include: (a) provide the types of materials students prefer, such as magazines, comic books, and the Internet; (b) provide multicultural resources, and resources that are in the students’ first language
in order to respect all students’ culture and heritage; (c) allow students to have a voice in their reading preferences; (d) give students time during the school day to read, as many urban students hold after school jobs in order to help out financially at home, and afterschool employment takes away from the leisure time available for reading; (d) provide adequate funding for school and classroom libraries, particularly in low-income urban communities where school is the main source for reading materials; and (e) to further instill a habit of leisure reading, encourage summer reading. Demands on teachers are heavily impacted by instructional practices and the curriculum time allotments which in some instances do not allow for in-depth teaching and learning. Student engagement in leisure reading activities can help to offset some of this loss by providing an expanded opportunity for learning (Hughes-Hassell & Rodge, 2007). The question is, can teachers stimulate more leisure or independent reading during both the academic year and vacation breaks by helping students find and access high interest reading material at their instructional level that also extends or enhances concepts taught in the regular curriculum?

**Content Reading**

**Comprehension**

Educators, researchers, and policymakers agree that comprehension is a major component of reading which continues to be at the forefront of improvement in adolescent literacy. Recent research (Kornfeld, 2003) findings support the position that providing students with effective reading strategies and specifically targeting comprehension can improve students’ academic performance. Comparing the reading comprehension test scores of non-learning disabled (NLD) seventh graders prior to their
enrollment in an elective one-year reading strategies course, to their reading comprehension test scores after completion of the course showed that reading comprehension improved, as evidenced by the Stanford Achievement Test, on average, two years of reading growth. The specialized reading strategies course was designed to teach the strategies used by proficient readers while simultaneously providing a supportive environment to practice and develop the strategies. Kornfeld concluded that instruction and practice in reading strategies at the middle school level positively impact reading comprehension, as well as student confidence.

Strategies recommended by the National Reading Panel (NRP, 2000) for improving comprehension include: comprehension monitoring, in which the reader learns how to check for understanding during reading and how to deal with problems in understanding as they arise; cooperative learning, which allows readers to work together to learn strategies in the context of reading; graphic and semantic organizers, which allow the reader to write or draw the meanings and relationships of the ideas in the text; story structure, where the reader learns to ask who, what, where, when, and why questions about the plot and to map out timeline, characters, and events in stories; question answering, where the teacher asks questions of the reader and provides feedback on the correctness; question generation, in which the reader asks themselves questions of who, what, when, where, why, and what will happen questions; summarization, the reader attempts to identify and write the main or most important ideas that unite the other ideas into a coherent whole; and multiple strategy instruction, which amounts to the reader using several of the eight comprehension strategies when interacting with the teacher over the text.
Identifying comprehension as the ultimate goal of reading instruction at the secondary level, researchers Edmonds et al. (2009) tell us a great deal about effective comprehension instruction for older struggling readers. The study identifies struggling readers as low achievers or students with unidentified reading difficulties; with dyslexia; and/or with reading, learning, or speech or language disabilities. Secondary teachers often focus exclusively on content and ignore or avoid instruction for reading or literacy development. Whether due to lack of training in teaching reading at the secondary level or issues of accountability, middle school students are expected to be able to “read to learn” having experienced “learning to read” while in elementary school. Edmonds et al’s synthesis of 29 studies conducted between 1994-2004 with adolescents (Grades 6-12) identified as having reading difficulties revealed what the authors referred to as a primary yet obvious finding: “Struggling readers can improve in their reading comprehension when taught reading comprehension practices” (p. 292). Based on their findings, the researchers recommend explicit comprehension strategy instruction such as engaging students to become actively involved in monitoring their understanding and process text meaning (Edmonds et al, 2009). The concern, as mentioned earlier, is that specific instruction in reading comprehension is not common at the middle school level, in spite of the fact that studies repeatedly show that it is needed and can be effective in raising student’s reading proficiency at the middle grades.

Confirming Durkin’s (1978-1979; 1981) findings on comprehension instruction, Dewitz, Jones and Leahy’s (2009) analysis of reading comprehension instruction in core programs at the end of grades 3, 4, and 5 revealed several strikingly similar shortcomings including, “Wide but shallow use of comprehension skills and strategies; in some cases
teachers and students did not know how skills and strategies were related or how the skills help improve reading; not enough opportunities for skills practice; and not enough scaffolding to allow students to learn to use the skills” (p. 121).

A subsequent study (Langer 2001) examined educational practices in middle and high schools that strive to increase student performance. Targeted for the study were those schools that beat the odds on standardized tests in reading and writing by gaining higher literacy than comparable schools despite the challenges and difficulties of serving the poor. Schools selected included schools from Florida, New York, California, and Texas, representing 25 schools, 44 teachers, and 88 classes studied over a two-year period each. The sample included both urban and suburban sites; however, a majority of the schools had a poor and diverse student body. The focus was on examining characteristics of educational practice that accompany student achievement in reading, writing, and English. The theoretical frame for the Langer study included a socio-cognitive view of instruction that learning is influenced by the values, experiences, and actions that exist within the educational environment, and that differing types of environments require different approaches to teaching reading, writing, and English as well as different types of learning processes. Langer’s findings upheld those theoretical assumptions by identifying distinguishing features of the high performing schools including: (a) skills and knowledge are taught in multiple types of lessons; (b) tests are deconstructed to inform curriculum and instruction; (c) within curriculum and instruction, connections are made across content and structure to ensure coherence; (d) strategies for thinking and doing are emphasized; (e) generative learning is encouraged; and (f) classrooms are organized to foster collaboration and shared cognition.
Effective comprehension instruction in the elementary grades has received most of the attention in a large body of reading research, thus contributing to the gap in what is known about effective interventions and reading instruction for students with reading difficulties in the middle and high school grades (Edmonds et al. 2009); however, a primary finding from the Edmonds et al. meta-analysis of studies focusing on 6th through 12th grade students is that comprehension can be expected to improve when students are taught reading comprehension practices. Twenty-nine studies made up of 976 students were included in the researcher’s meta-analysis. These results are noteworthy since traditionally middle school students do not receive instruction in reading comprehension. This may be due to teachers’ emphasizing content at the expense of instructing students how to read for learning. The results support other research (Conley, 2008) on the need to explicitly teach comprehension strategies.

Literature is not clear on how strategies should be taught (McKeown, Beck, & Blake, 2009). Evidence suggests that some of the problem has to do with how strategy labels are inconsistent across activities and limited evidence about how students actually interact with the strategies during reading. McKeown et al. developed, implemented, and compared standardized instruction formats targeted to enhance comprehension using (a) strategies instruction, (b) content instruction, and (c) basal instruction approaches in a low-performing urban district. Results indicated that both strategies and content instruction was useful; however, focusing directly on meaning is feasible and at least as effective as pursuing meaning through strategies. The basal approach was also found to be effective with the authors acknowledging an unintended advantage created as a result of deliberately constraining the basal-comprehension approach so that they could see
what was going on in this control group. In addition, the scripted and prescribed questions, features of the basal model, may have also increased the effectiveness of this program. McKeown et al. concluded that how strategies should be taught is not easily derived from research.

**Strategy Instruction**

Conley (2008) recognizes the need for research to clarify how cognitive strategies operate in content-area classrooms to prepare adolescents for their future. “Strategy instruction is quickly becoming one of the most common—and perhaps the most commonly misunderstood—components of adolescent literacy research and practice” (p. 84). In making this comment, Conley reflects on the difference between using cognitive strategies as a “teaching tool” versus using cognitive strategies as a “learning tool,” which is one of the controversies surrounding cognitive strategies. Using cognitive strategies as a “teaching tool” involves teaching students to follow the steps of a teaching activity through repetitive exposure, i.e., doing a teaching activity step by step, repetitively in hopes that the students will get it. In contrast, using cognitive strategies as a “learning tool” involves developing the students’ critical understanding of subject matter ideas as well as providing a cognitive approach to learning (Conley, 2008).

Summarization, a strategy that appears in many textbooks, based on Conley’s definition, could be utilized as a “teaching tool.” One “teaching tool” strategy that is prevalent in many textbooks is that of summarization.

Summarization has been lauded by some researchers (Lanning, 2008) as a powerful comprehension strategy and is used frequently in many classrooms. Teaching summarization in the early grades should help adolescents with comprehension across the
curriculum if they are able to maintain the strategy. The question becomes, “What happens when the curriculum becomes more challenging and the summarization strategy is no longer enough?” (Conley, 2008). Understandably, each grade builds on the content of the former with the expectation that the content will be more challenging. Conley questions whether or not adolescents will be able to adapt summarization to the new curriculum demands and will they recognize what is required of them to meet the new demands. Although Conley does not say so directly, the implication is that adolescent literacy research should continue to be a major focus on our national agenda.

Martin (2005) observed how 10th grade public school students in average and advanced classes used strategies to learn material in their high school social studies classes. Earlier studies had focused more on general skills which did not acknowledge that some skills are domain specific. Using the interview method of data collection allowed for the collection of additional information that had not been gathered through previous research. The results suggested that students’ use of cognitive strategies depends on whether or not they are aware of cognitive strategies, whether or not they recognize when the strategy is needed, and whether or not they are motivated to use the strategy. The results also indicated that most social studies students learned social studies content using a combination of rote memorization and elaboration. Implicit in this finding is the need for teachers to stress the importance of cognitive strategies and to require more high-level thinking on classwork and on exams (Martin, 2005).

Given that there are multiple ways to process information and that some students do not know how to learn nor have not been taught how to learn, Martin (2005) attempted to confirm findings from her earlier study with high school students, with a subsequent
2007 study, whose central purpose was to understand ways that eighth grade students used strategies to learn information in their social studies classes. The findings from the new study revealed key similarities to the findings of Martin’s 2005 study. The three themes that emerged from both studies reflective of students’ ability to learn information in social studies were that students’ ability to use cognitive strategies to learn information in social studies depended on whether or not the students had knowledge about the strategy, knew when to use it, and were motivated to use it.

Shippen et al. (2005) extends the research on adolescent literacy to include a review of reading programs used with urban middle school students. The researchers compared two direct instruction (DI) reading programs: corrective reading decoding and the Rewards program. The research took place in an inner-city school district composed of 99% African Americans and 1% European Americans who were markedly behind in reading skills. The results revealed, after a 6-week intervention, gains in reading efficiency, reading rate, reading accuracy, and reading fluency regardless of which DI program was used. As positive as the results may be, Flowers (2007) cautions that a particular strategy approach, while successful with some African American students, may not work well with all African American students. Flowers argues that a requirement for beginning the process of helping African American students is the need for additional research that supports the development of appropriate strategies for African American students to become proficient readers. Although DI programs have been shown to be effective with low SES students, some critics of DI hold that it is a racist strategy in that it emphasizes rote learning, implying that minority children cannot assimilate higher order thinking skills (Shippen et al., 2005). Cognitive strategies, on the other hand, are
the equivalent to empowerment as students can apply them over and over to a variety of learning tasks and a wide range of content.

**Discipline Specific Concerns**

Not wishing to enter the conversation of whether or not thinking skills are domain specific, but only to acknowledge that the issue exists, the phrases “think like a scientist” or “like a historian” indeed imply that each discipline has its own unique thinking skills and strategies leading to success. Recent research findings support the belief that content is domain-specific, that each core subject has its own unique qualities; however, Smith (2002) asserts that there are many thinking tasks that share important commonalities regardless of the domain. Therefore, he concludes, the thinking skills that address these common elements are “general” by virtue of that fact. Reasoning, for example, is a thinking skill that is utilized in many subject areas. In social studies, cause and effect, or compare and contrast, can be the platform for reasoning, yet reasoning is not solely exclusive to the subject of social studies (Smith, 2002). There are domain-specific thinking skills, Smith agrees, but there are far more elements of generality in our thinking practices than have been recognized before. He recommends teaching thinking skills in general courses that teach thinking using content that is motivating and valuable for the students. These courses should embed their procedural content—of strategies, methods, heuristics and the other elements of thinking skills—in a framework of concepts and principles (Smith, 2002).

Visualization of this suggestion in a middle school environment might entail teaching students how to comprehend, how to problem solve (application), how to examine and break information into parts (analyze), how to compile information in a
different way (synthesize), and how to make judgments (evaluate). A leader in the field of critical thinking as well as a proponent of general thinking skills, Robert Ennis, does not find critical thinking to be subject-specific or domain-specific, preferring to use terms such as *general thinking skills* and *critical thinking skills* due to the vagueness of the terms *subject*, *domain*, and *field* (McPeck, 1990).

**Critical Thinking**

Research is clear that critical thinking skills are important for a democratic society (Beyer, 1988; Ennis, 1996; Paul, 1990; Pithers & Soden, 2000), that we have a public responsibility to try to make reasonable civic decisions through thinking critically in civic matters, and to help others to do so as well (Ennis, 1996). It is also generally recognized that the ability to think critically is a 21st century skill that students need to be successful. No one should rely solely on their own storehouse of information to solve problems. Because of the rapid availability of information (Sternberg, 2006) resulting in part from technology, proficiency in thinking has a much greater long-range significance. Sternberg compares knowledge and thinking skills by referencing that bodies of knowledge are important, but knowledge often becomes outdated, whereas thinking skills never become outdated (Sternberg, 2006).

Typical everyday problems require being in possession of large amounts of information and having the habit of mind (Costa & Kallick, 2000) or the disposition (McPeck, 1990) to engage in strategic reasoning. The terms *habit of mind* and *disposition* are similar in that each suggest a proneness or willingness to think critically. Ennis (1989) conceptualizes dispositions as having a “spirit of inquiry,” being open-minded, exploring assumptions cautiously, and weighing evidence. What constitutes critical
thinking varies depending on the theory and how it is interpreted. It is a survival skill used by individuals and can be incorporated in various situations (Crenshaw, Hale, & Harper, 2011). Realizing that it is perhaps not possible to teach every critical thinking skill, a fundamental curriculum question is: Which critical thinking skills are most valuable for our students?

**Critical Thinking Skills**

Leinhardt, Beck, and Stainton (1994) identified certain thinking skills that are necessary in learning some subjects and are useful for citizens in a democratic society, i.e., decision making, problem solving, drawing conclusions, interpreting written text, analyzing multiple sources, and identifying cause-and-effect relationships. Additionally, judging the strength of an argument, distinguishing factual claims from value judgment, detecting bias, identifying point of view, and determining the credibility of sources are also recognized as critical-thinking skills (Beyer, 2008).

Bloom’s Taxonomy of Cognitive Development has been touted by some to be the most usable and the most useful in building a foundation for teaching critical thinking skills (Bray & Rogers, 1995). Originating in 1956, Bloom’s Taxonomy consists of only six levels: knowledge, comprehension, application, analysis, synthesis, and evaluation. Originally thought to progress from lower cognitive thinking (knowledge) to highest thinking (evaluation), in their critique of Bloom’s Taxonomy, Marzano and Kendall (2007) suggest that evaluation can occur before the other steps, which is a distinct difference in the interpretation of this taxonomy. In their book, The New Taxonomy of Educational Objectives, Marzano and Kendall also delineate thinking in terms of six levels: retrieval, comprehension, analysis, knowledge, metacognitive system, and self-
system. Both taxonomies are popular and have made their way into textbooks and supplemental teaching materials.

**Instruction in Critical Thinking**

In the educational arena, teaching thinking or teaching thinking skills refers to specific strategies and procedures used by learners in a controlled, conscious way to make their learning more effective (Moseley et al., 2005). Learning content as well as being able to analyze, synthesis, evaluate, and know when to apply new skills to unfamiliar problems is an expectation in so many facets of contemporary life including the work place. While some recommend a course in critical thinking as a quick-fix solution, McPeck (1990) sees critical thinking from a broader perspective, recognizing that “it is impractical to think that we can provide the requisite knowledge for every kind of problem. For this reason, given the kinds of problems that we are apt to face, we are forced to ask ourselves what kinds of knowledge and understanding are likely to have the most universal value” (p. 30).

A look at thinking skills at the primary level indicates that students should have mastery of at least four thinking skills to become effective readers, writers, and learners: comparing, classifying, sequencing, and predicting (Beyer, 2008). Additional skills needed for learning various subjects and for addressing desirable citizenship skills in a democratic society include decision making, problem solving, drawing conclusions, interpreting written texts, analyzing multiple sources, and identifying cause-and-effect relationships. Beyer’s research further suggests that teaching thinking skills should involve teaching the components of a thinking skill (such as the heuristics) or rules for using the skill, as well as when, and under what conditions, to use the skill (Beyer, 2008).
This is in keeping with what others have advocated about the importance of explicitly teaching strategies and having students use and articulate their use.

Preus (2012) examined what teachers do to encourage authentic learning, particularly higher order thinking, in an inclusive public junior high school. The authentic instruction approach challenges students academically while engaging them in issues that have personal or social significance. Findings indicated that the teacher’s pervasive use of authentic instruction strategies, such as asking open-ended questions, expecting students to provide evidence to support their answers, asking students to write down their thinking, building on student questions, modeling the thinking process, and providing specific feedback led to high quality intellectual work by students with and without disabilities.

Instruction in critical thinking can be done through either infusion, immersion, or the mixed methods approach (Beyer, 1997). When using the infusion approach, instruction should be situated in specific problems and functional contexts that are embedded in the disciplines, allowing for deliberate sustained attention to be given to both subject matter learning and to improving thinking (Beyer, 2008). This approach requires restructuring of curriculum, instruction, and assessments. “A disadvantage of the infusion approach is that the teaching of critical thinking may lack any sensible sequence or coherence—a little fallacy recognition is taught here, a little concept analysis there” (Wright, 2002, p. 258). All teachers must be well versed in critical thinking in order for this method to work.

Wright (2002) also offers the idea of teaching critical thinking as a stand-alone course, either using an existing critical thinking program such as Philosophy for Children
or creating one to fit a particular context. Possible advantages of the stand-alone approach to teaching critical thinking is that it allows for full focus on thinking and it is more likely to fit the constraints of the existing curriculum since most stand-alone programs were designed by teachers. Wright acknowledges that transfer of learning can be a concern with existing, stand-alone critical thinking programs, since what students learn in the course might not transfer to the rest of the curriculum. Geertsen (2003) suggests that the infusion method best supports the issue of transfer since it allows for specificity in teaching for thinking with issues that are embedded in the disciplines.

Immersion allows for the full class focus to be on the content under discussion with the understanding that when students are expected to think and that through thinking about the subject matter, they will naturally develop better thinking skills (Beyer, 1997). A disadvantage of this approach is that little, if any, attention is given to explicitly teaching the thinking skills needed for higher order thinking. Thus, Beyer contends that the immersion approach “is based on the erroneous belief that if students are made to engage in higher order thinking, they will eventually do so skillfully and successfully” (p. 248). Finally, mixed methods, as the name implies, is a combination of the approaches, wherein students experience subject-specific critical thinking instruction. Overall, determining which method of instruction in critical thinking is best and for what group of students remains an open debate, while evidence still continues to point to the need for students to be able to think critically well beyond middle school.

The need to focus on critical thinking does not stop at the middle school level. An examination on teaching at the community college level reveals that teachers usually follow two standard models referred to as “one of many” or the “cover as much as
possible” model (Noisch, 2001). In the first model (one of many), Noisch explains, the
text supposedly helps the teacher make critical thinking a part of the class while also
incorporating other ways to help students learn the material. This model still emphasizes
content coverage and uses of the chapter exercises, which often place massive emphasis
on rote learning with little or no instruction on how to think critically about the text. In an
attempt to direct some level of critical thinking, textbook headings may be labeled “key
terms,” “review questions,” and “understanding the basics,” to imply critical thinking, but
usually the exercises require simple recall rather than critical thinking (Noisch, 2001).
Textbooks in many middle and high schools also tend to mimic this “one of many”
model.

Individual critical thinking activities may or may not be used in the second model,
“cover as much content as possible,” since the focus is on coverage. The two models both
make extensive use of the textbook and its “key terms” as a central focus of critical
thinking (Nosich, 2001). However, critical thinking is not adequately handled through
either model. The latter model “makes the assumption that students learn to think
critically within the discipline and grasp how its parts relate to one another by working on
a large number of discrete, circumscribed, and unsystematically chosen topics” (p. 62).
“This model does not address the role of fundamental concepts and ideas necessary to
learn to think within and through a discipline” (p. 62). The assumption of the “one of
many models” is that there are other viable, effective ways for students to learn the
material besides learning to think their way through it. “The central role that critical
thinking plays in all genuine learning is not given justice through this assumption”
(p. 62).
Abrami et al. (2008), in studying the impact of instruction on the development and enhancement of critical thinking skills and dispositions, concluded that developing critical thinking skills separately followed by applying them to course content explicitly works best. Their findings led them to conclude that least effective was immersing students in thought-provoking subject matter without explicit use of critical thinking principles.

Marin and Halpern (2011) compared explicit and embedded instructional modes of critical thinking with an emphasis on students’ ability to transfer critical thinking to everyday situations. Recognizing that critical thinking can be taught using either method, the researcher’s purpose was to see which strategy, explicit or embedded, was most conducive to transfer. The participants were high school students from low-performing schools with a racial makeup of 69% Hispanic, 16% African-American and 15% White. All of the materials were made available in Spanish, for the benefit of the parents that were not proficient in English. All of the student participants were proficient in English. Halpern’s four-part model for teaching for transfer included: (a) a dispositional or attitudinal component that consisted of modeling critical thinking and actively encouraging thoughtful responding; (b) instruction in a practice with critical thinking skills; (c) structure training activities designed to facilitate transfer across contexts and accomplished by deliberately noting how specific thinking skills apply with very different topics; and (d) a metacognitive component, which included having students discuss the process of thinking.

In the Marin and Halpern (2011) study, one group of participants participated in a web-based critical thinking workshop that provided explicit instruction in specific critical
thinking skills. The second group received embedded instruction on critical thinking skills while studying basic principles and concepts of the content. This group received instruction in the use of the same critical thinking skills without direct instruction in thinking skills. A third group, the wait-list group, was allowed to participate in all preliminary tests but not receive any work designed to help their critical thinking skills. Results of this study reveal that explicit instruction in thinking skills was more effective than embedded instruction for transfer of critical thinking skills to everyday situations and that this could be done without restructuring the high school curriculum. This study involved a limited sample of subjects, however, and other results of other studies are also inconclusive regarding the comparative impact of the various thinking skills approaches.

**Challenges.** There is not a lack of agreement that Americans need to improve their ability to think clearly as is evidenced by an earlier highly publicized report, *A Nation at Risk* (1983), and a more recent report by the National Educational Goals Panel (2000), yet several barriers to critical thinking continue to exist throughout our schools, K-12 and beyond. One barrier is the belief that teaching critical thinking and social consciousness is political. For instance, some fear that such instruction could impede the discussion of the social issues of power and privilege, while others fear that such instruction might lead to students question certain values, doctrines, and beliefs that parents do not want challenged. These issues are key to any study of social studies, as Landsman and Gorski (2007) point out. Attention to critical thinking activities and discussions of social issues are not prevalent in schools as a result of this belief (Landsman & Gorski, 2007).
The question that needs to be explored, therefore, is this: “Is it more political to address these charged social issues through class discussions or to ignore them?” (p. 42).

Class discussions that are current and relevant have been shown to be an effective method to encourage student participation and motivation. This is especially true in the middle school environment where students struggle through lessons that fail to hold their attention (Landsman & Gorski, 2007). Dewey (2009) suggests that “a curriculum that acknowledges the social responsibilities of education must present situations where problems are relevant to the problems of living together and where observations and information are calculated to develop social insight and interest” (p. 105).

Another challenge to teaching critical thinking, which is also true for cooperative learning groups, is the increasing pressure on teachers to prepare students for high-stakes tests at the expense of critical thinking which requires time to develop.

Diverting more attention on high test scores, ironically, does not predict greater use of what is tested; [it] only predicts with considerable confidence continued high test scores. Equating high test scores with high-quality schools or well educated human beings is an oxymoron—and one with dire consequences for this nation. (Goodlad, 2004, p. 373)

Curriculum design is also seen as a barrier to critical thinking by researchers at the middle and high school level (Erickson, 2007; Pithers & Sodon, 2000) in that the curriculum is geared more toward subject-matter than on the development of critical thinking skills. Erickson faults our traditional curriculum design models as having a weak conceptual structure which places the emphasis on coverage and not on depth. He further suggests that by using concepts as the basis for curriculum and instruction, students retain facts better, have a deeper level of understanding, and are more motivated to learn. National academic standards are generally incoherent in their cross-disciplinary design.
For example, science standards are concept based, social studies standards are fact based, mathematics standards are skill based, and English/language arts standards are skill based (Erickson, 2007).

Another constraint, central to the issue of teaching for critical thinking, is whether or not critical thinking skills are generic or content specific (also referred to as domain specific). Borrowing from the definition of Smith (2002), domain specific is the belief that thought is field-specific and, as a result, it strongly determines the mental processes and skills used in thinking. Proponents of a more global approach to addressing thinking skills, such as Ennis (1989), argue that there are important general thinking skills (or general critical thinking skills) that can be used or applied across different contexts.

Yet another ongoing debate between policymakers and educators is whether or not schools should emphasize facts or critical thinking skills (Wenglinsky, 2004). Teaching basics at the expense of not teaching critical thinking skills does not account for the fact that standardized tests, such as NAEP, assess both basic and critical thinking skills. Kohn (2000) disagrees with the belief that the basics must be taught first, before any attempts at higher-order thinking. Using this system, facts are taught in small doses requiring little or no thinking and seldom producing understanding. In addition, this traditional classroom method usually excludes critical thinking since the curriculum itself is designed to progress students from one isolated fact to the next (Kohn, 2000). This debate carries through to teacher dispositions regarding the teaching of thinking skills, and thus, teachers’ beliefs about the use of critical thinking activities with specific groups of students can be yet another barrier to critical thinking.
Research (Torff & Sessions, 2006) shows that teachers tend to focus on critical thinking when working with high achieving students. Reasons given for this differentiation in instruction between high achieving and low achieving students include issues of the learners’ level of prior knowledge, time constraints, influence of parents, influence of colleagues, learners’ level of motivation, and learners’ level of ability.

**Benefits.** The value placed on critical thinking can be seen in one of the founding principles of the National Council for Excellence in Critical Thinking (NCECT); to achieve knowledge in any domain, it is essential to think critically (Paul, 2008). On a personal level, harmony and well-being in a society is due in part to parents who can think through the challenges of child rearing and who act accordingly (Abrami et al., 2008). From a societal level, citizens who can think for themselves on the basis of evidence and analysis rather than allowing emotion, prejudice, or dogma to rule out, can in fact sustain, build, and perpetuate our democracy (Abrami et al., 2008). Richard Paul (1990) notes the importance of critical thinking in a very succinct way:

There is no way around the need of minds to think their way to knowledge. Thought is the key to knowledge. Knowledge is discovered by thinking, analyzed by thinking, organized by thinking, transformed by thinking, assessed by thinking, and, most importantly, *acquired* by thinking. There is no way to take the thinking out of knowledge, or the struggle out of thinking, just as there no way to create a neat and tidy step-by-step path to knowledge that all minds can mindlessly follow. (Introduction section xv)

In a study highlighting teachers enrolled in a college master’s level course to teach thinking skills, Sparapani (2000) used an intervention created by him and his colleague, Edwards, to encourage higher-level thinking without disturbing the regular curriculum. The design of the lesson activities centered on four major types of activities: information processing activities, critical thinking activities, decision making activities,
and creative thinking activities. The results showed that the more students were actively engaged in the learning process, the more they were creative, independent, and responsible. Teachers benefited from the intervention by becoming mentors as opposed to being dispensers of information. Despite the many challenges of teaching critical thinking as indicated above, studies show that critical thinking is a survival [emphasis added] skill used in numerous areas of life (Crenshaw et al., 2011). Continuing to conduct studies that illustrate how the teaching of content and the teaching of critical thinking can co-exist within a comprehensive school curriculum can serve to reduce the challenges and increase students’ opportunities to both master core content expectations and develop a thinking skill repertoire that will serve them throughout their education and life.

**Cooperative Learning**

While some recent research findings support the claim that cooperative learning in the classroom has many positive characteristics (Leonard & McElroy, 2000), others (Beals, 2010) question the effectiveness of cooperative learning in all situations. Cooperative learning is highly recognized for improving social skills, whereas Beals argues that social development in most children occurs naturally without a special intervention and, in fact, more effectively than classroom groups that are arranged by the teacher. Another concern Beals raises, based on his 2010 study, is the potential of cooperative groups to reduce learning rather than enhance it. By illustration, Beals notes that groups left unsupervised, even for a short time, can resort to goofing off. Additionally, some students may not fully apply themselves since the grade received is based on the group’s effort.
Leonard and McElroy (2000) came up with different findings that suggest the cohesiveness of the students in the group, their willingness to complete the task, and the quality of the task itself will determine the success of the group. Finally, the importance of the task, whether or not it engages all students in the content to be learned, has more than one solution strategy and requires an explanation that will ultimately reveal students’ thinking (Leonard & McElroy, 2000). Some studies have found that putting students in groups does not guarantee an improvement in their teamwork skills (Holloway, 2004). From extensive studies of cooperative learning, however, Johnson et al. (2010) concluded that members of cooperative groups become more socially skilled than do students working competitively or individualistically.

Cooperative learning can also be examined within the larger question of how teachers create a school and classroom environment that enriches learning opportunity. Studies referenced earlier in this literature review provided evidence that the academic performance of minority students at urban middle schools is influenced by the school and classroom environment. This effect may be either detrimental or beneficial. This relationship between the classroom learning environment and learning for urban middle school students suggests the need for a safe and orderly environment, an environment that allows all students the opportunity to interact, to learn to appreciate one another’s differences. This becomes especially significant in light of the evidence that so many urban adolescents struggle with limited literacy (reading) skills and are thus more challenged academically and in need or more support for making academic progress.

Waxman, Garcia, and Read (2008) examined the overall quality of the classroom learning environment at three schools that were classified by the statewide assessment
criteria as “exemplary,” “recognized,” or “acceptable.” The study took place in a major urban city in the south central region of the United States with approximately 500 seventh and eighth grade students participating. Fifty percent of the students were seventh graders. Gender was equally represented. The majority of the students were Hispanic (61%), 25% were African American, about 6% were White, and 8% were from other ethnic groups.

Waxman et al. (2008) found that significant differences existed in the classroom learning environment of effective (exemplary) and less-effective (recognized, acceptable) urban middle schools, which corroborated the earlier findings on urban elementary schools. Specifically, students from the exemplary schools had a much more favorable perception of their school than students from the less effective schools. Students from the less effective schools felt that the classroom was more difficult, that their reading work was more difficult, and they also had higher perceptions of more friction than students from the exemplary school. On the other hand, the student body in all three schools were disciplined and orderly, with a strong focus on academics in each school. Noteworthy also was the lack of a significant difference in the amount of time spent on additional reading and watching television each weekday, as reported by the students from each of the three types of schools. Direct instruction and lecture with a predominance of whole-class instruction was the common method of instruction in the three schools.

Mueller and Fleming’s (2001) ethnographic case study, designed to extend the existing knowledge about the contexts in which children learn cooperatively, how they structure their work, how they develop ideas and plans, and how they communicate with each other confirms earlier research that many teachers are uncomfortable using
cooperative learning in the classroom, despite its documented positive effects (Johnson & Johnson, 2005, Leonard & McElroy, 2000; Slavin, 1991). Specifically, Muller and Fleming’s case study consisted of a 5-week project involving a class of 29 students whose task was to work as a team to create a new innovative ride or redesign an existing amusement park structure. In keeping with the role of the teacher in cooperative learning, a record was kept of the number of visits the teacher made to each group to be sure the teacher was more of a facilitator. Students’ comments, after completing the project, revealed a recognition of the need to have plenty of time to talk and work their ideas out, to be able to listen and exchange ideas, and to present what they learned to each other and to an outside audience. The authors of this study thus recommended that teacher education programs provide courses and field experiences to introduce prospective teachers to cooperative and collaborative classroom methods to increase teachers’ capacity for conducting effective cooperative groups (Muller & Fleming, 2001).

Johnson and Johnson (2005) recognize four essential characteristics of cooperative learning: First, task completion requires a state of interdependency where all students must work. Second, there should be face-to-face interactions among the students in small learning groups. Third, each student is held individually accountable. Finally, students need to learn interpersonal skills, obtained through learning to work together and being responsible for one another’s learning.

Social Interaction

Cuban (1993) draws our attention to the important role of social interaction in the development of cognition through his assertion that the very nature of the classroom is socialization. Working in the classroom means learning to live in crowds. Learning to
live in crowds affects students in a number of different ways. The social dimension of learning is tied to community and practice and creates meaning and identity. Learning presupposes action and participation and converts them into experience and development (Lave & Wenger, 1991).

Several scholars argue that group work is underused and underdeveloped and should be given a more central role in educational policy (Blatchford, Baines, Rubie-Davis, Bassett, & Chowne, 2006). Social interaction through group work plays a fundamental role in the development of cognition. Through the process of schooling, children are instilled with the dominant social norms, values, and behaviors that will prepare them for entry into the larger culture (Cuban, 1993). The very nature of the classroom is socialization: teacher-student interaction, student-student interactions. Learning not only takes place in the individual; Lave and Wenger (1991) suggest that learning is always embedded in a social and societal context that provides impulses and sets the frames for what can be learned and how. For example, there is a difference in the nature of the learning that takes place in school, and the learning that takes place in working life as well as the learning that takes place in everyday life outside of school work. Each of the contexts presents different fundamental conditions.

To encourage positive student-student interaction, cooperative learning based on social interdependence theory is recommended as opposed to competitive or individualistic learning (Johnson et al., 2010). When the interactions are structured properly, the result is pro-social (not anti-social) actions and attitudes, positive (not negative) relationships, and healthy (not unhealthy) psychological development. These interactions between the student or individual and his or her social, cultural, and physical
environment lead to the acquisition of knowledge (Dulberg, 2005). The learner’s activity is a key to knowledge acquisition, and knowledge is individually, culturally, and socially constructed. Dulberg recognizes the learner as an active participant in the learning process, and as the learner matures, he or she tends to draw upon background experiences which contribute to the process of knowledge construction.

**Instruction in Cooperative Learning**

A key component in establishing cooperative groups is recognizing that there are three types of cooperative learning—formal, informal, and cooperative base groups (Johnson & Johnson, 2005): (1) the duration of formal cooperative groups is from one class period to several weeks during which students work together to achieve their shared learning goals and complete jointly specific tasks and assignments; (2) informal cooperative learning is used for quick discussion that lasts from a few minutes to one class period; and (3) cooperative base groups provide members with the support, help, encouragement, and assistance needed to progress academically and are normally one year or one semester in duration. Another key component involves the groups’ goals.

**Goal structure.** Goal structure refers to how students relate to each other while working together to accomplish instructional goals (Johnson & Johnson, 1990). Individualistic, competitive, and cooperative comprise the three types of goal structures that teachers must choose from. The type of structure the teacher uses depends on the activity to be performed since (Dembo, 1991), and each structure is effective under certain conditions and relevant to specific goals and objectives. The Johnsons suggests that the cooperative goal structure is the most appropriate for school in that it does not lead to competition, which has been found to lead to counterproductive results.
As the term implies, students work independently in the individualistic goal structure with a focus toward not disturbing others and asking the teacher for help when needed. Their goals are assigned and efforts evaluated according to a fixed set of standards (Kougl, 1997). Traditional schooling emphasizes the individualistic goal structure. The competitive goal structure creates a win-lose orientation; students compete to earn rewards, such as a certain number of A’s or B’s. Teachers’ views are affected by this structure, leading them to see students as either a success or a failure, able or unable, and capable of meeting either high or low expectations (Kougl, 1997). Some researchers (Brophy, 1987; Dembo, 1991) conclude that competition in school is acceptable to a limited amount, but Dembo cautions that competition is overused in the classroom. Affirming this position, Kohn’s 1986 study of competition in schools revealed that competition does not promote achievement; competition causes anxiety, fosters suspension, and isolates people. Additionally, Kougl (1997) concluded that competitive goal structures contribute to students assessing their ability based on social comparisons with the performance of others.

When the goal structure is cooperative, students work together to accomplish shared goals, to maximize their own and each other’s learning (Johnson, Johnson, & Holubec, 1994). The alternative to cooperative behavior (Slavin, 1983) is individualistic behavior, where individuals operate independent of each other and/or engage in competitive behavior where hindering one another’s success can be found. Teaching and learning can take place in any of the goal structures; however, cooperative learning structures should be more prevalent in the middle school as students are being prepared to become responsible, productive, and contributing citizens. Working cooperatively with
peers and valuing cooperation have been associated with greater psychological health, higher self-esteem, and greater social competencies than working competitively or working independently (Johnson et al., 1994).

Roseth, Johnson, and Johnson (2008) emphasize the use of cooperative goal structures in the classroom based on Johnson and Johnson’s (2005) social interdependence theory. Social interdependence exists when the students share common goals, and the attainment of each individual’s goal is affected by the actions of others. These researchers found that structuring individuals’ goals cooperatively helps to promote the success of others, resulting in higher achievement than gained from the use of competitive or individualistic goal structures. Roseth et al.’s (2008) findings suggest that

the earlier [that] adolescents’ teacher structures students’ academic goals cooperatively, (a) the more students will tend to achieve, (b) the more positive students’ relationships will tend to be, (c) the more higher levels of achievement will be associated with more positive peer relationships. (p. 238)

Finally, Roseth et al. (2008) suggest that their study also has implications for work teams in all settings since it revealed that a team is more productive when its members maintain positive relationships. They further suggest that disengagement in school, regardless of the reason, represents a failure for both the school and a developmental disadvantage for the individual student (Roseth et al., 2008). The Johnsons’ (2005, 2010) work and the Roseth et al. (2008) study of cooperative learning structures in a large sample of middle schools resulted in these scholars advising that using cooperative goal structures, as opposed to competitive or individualistic structures, can serve the dual purpose of improving academic and social goals simultaneously.
Like other heavily researched and promising practices, studies on cooperative learning do not always present such glowing results. To some extent, this can be attributed to the widely varied ways that teachers learn, understand, and apply the practices associated with cooperative learning. For this reason, the Office of Educational Research and Improvement (OERI) examined a large body of research out of which they comprised and reported on the *Essential Elements of Cooperative Learning in the Classroom*. This monograph, prepared by Stahl (1994), suggests that in order to successfully implement cooperative learning group tasks, a number of essential elements must be met:

1. A clear set of specific student learning outcome objectives
2. All students in the group “buy into” the targeted outcome
3. Clear and complete set of task-completion directions or instructions
4. Heterogeneous groups
5. Equal opportunity for success
6. Positive interdependence
7. Face-to-face interaction
8. Positive social interaction behaviors and attitudes
9. Access to must-learn information
10. Opportunities to complete required information-processing tasks
11. Sufficient time is spent learning
12. Individual accountability
13. Public recognition and rewards for group academic success
14. Post-group reflection (or debriefing) on within-group behaviors
There is flexibility in the number, name, and order of each requirement depending on a specific author’s recommendation; however, all authors contributing to this synthesis of the research on cooperative learning attest to the importance of each recommendation.

Focusing on teachers’ use of cooperative learning, Bassett, McWhirter, and Kitzmiller’s (1999) study of how teachers trained in cooperative learning actually implemented the strategies in their classroom revealed that a majority of the teachers that were trained in cooperative learning and used the approach in their classroom cited students’ enjoyment of working in groups and reported that cooperative groups allow for more student involvement, and concurred with the overall advantages that cooperative groups provide students.

**Challenges.** When it comes to the topic of group learning, studies show that middle school students benefit both academically and socially from group learning. However, not all studies of cooperative learning have yielded favorable results. A limited number of scholars do not find that cooperative learning has an educational advantage over individual learning. The merits of cooperative learning as a way to build social skills in students are questioned by Beals (2010), who asserts that a special intervention is not needed since social development in most children occurs naturally. The academic advantages of group work as seen by Beals can lead to a reduction in learning as opposed to enhancing it, such as when groups are left unsupervised or when individual students are not motivated by group grades. Some students may not be inclined to apply themselves, realizing that they have limited control over the group grade, unlike receiving an individual grade when allowed to work alone (Beals, 2010). Beals’ conclusions, however, are based on his study of one version of cooperative learning in a very limited
setting and do not account for differences in how teachers set up and carry out cooperative learning structures and processes. For instance, the reference to group grades is based on an earlier model of cooperative learning which has, more recently, given way to models that include both individual and collective learning responsibility and accountability (Kagan, 1994).

Another challenge of group learning (Slavin, 1996) is in the structure of the traditional classroom which does not adequately reflect adolescent development and their need to interact with peers. Traditionally, students are expected to work independently, to compete for good grades, teachers’ approval, and recognition. Furthermore, students are rarely given responsibility, authority, or opportunities for active participation (Slavin, 1996). When students are allowed to work in groups, this could take much needed time away from other areas deemed necessary to meet AYP, an ever-present concern of many educators.

Some studies have found that students who lack the social skills that would allow them to interact and perform successfully in groups may not benefit from working with their peers (Beals, 2010; Dembo & Eaton, 2000; Gillies & Ashman, 2003); some team members might be inclined to loaf and freeload off the efforts of other team members (Driscoll, 1994); and some students prefer to work on their own (Gillies & Ashman, 2003). The issue for some adolescents who need a little help is in being embarrassed or afraid to ask for it. Working as a member of a team can make it easier for them to ask for help.

**Benefits.** Cooperative learning group tasks have been shown to positively influence students’ academic test scores. One possible explanation for cooperative
learning’s success is attributed to the role that interaction and language plays in learning (Tsay & Brady, 2010). According to Johnson and Johnson (1989), “Any assignment in any curriculum for a student of any age can be done cooperatively” (p. 327). Stahl, VanSickle, and Stahl (2009) suggest that the primary focus of cooperative learning is to ensure that every member of every team does well academically. The fact that students are working in groups, however, does not mean that they are working cooperatively to ensure their own or their fellow group members’ success. Cooperative learning is not opposed to all competition, only inappropriate competition such as that of a win-lose structure. Finally, despite the claims by Johnson and Johnson, studies have shown that cooperative learning does not work well with all tasks. A task for productive group work must offer a challenge or a problem to solve (Frey, Fisher, & Everlove, 2009).

Other scholars are careful to draw a distinction between working in groups and actual cooperative learning. Group learning benefits as described by Jacobs, Powell, and Inn (2002) are similar to those of cooperative learning: improved academic achievement; more active involvement in learning by students (regardless of past achievement level or individual learning needs); increased motivation to learn; increased student responsibility for their own learning; improved interethnic relations and acceptance of academically challenged students; improved time on task; improved collaborative skills; increased liking for school; improved student attitudes toward learning, school, peer, self; increased ability to appreciate and consider a variety of perspectives; and greater opportunity for the teachers to observe and assess student learning. What distinguishes working in groups and cooperative learning is not always clear, since different researchers hold different criteria and definitions for both. For this study, the OERI guide will be the basis for an
operating definition and characteristics of cooperative group learning, since it offers the most coherent points of consensus from multiple researchers and scholar on cooperative learning.

Chapter Summary

Issues of achievement and motivation do not fully reflect the struggles of low SES middle school students. To better address each of these important areas, administrators, teachers, parents, and policymakers will need to consider the role that school climate plays in the students’ ultimate success both in school and in life. These multiple issues—achievement, motivation, and school climate—are intertwined. When students are not afraid to come to school because of putdowns, overly challenging school work, lack of appropriate support, inequitable discipline practices, suspensions, pressure due to standardized testing, and other school climate related factors, their overall achievement improves.

Schools that typically have more students of color from low SES families tend to struggle the most with the issue of providing a positive school environment (Alliance for Excellent Education, 2013). The growing concern over the academic and social behaviors of adolescents is the product of changing economic times, the changing nature of society, and the developmental characteristics of adolescents themselves. Complicating these issues are concerns that many adolescents read well below grade level. The idea that a good dose of reading instruction during the elementary years will somehow provide adolescents with the tools needed for middle and high school has yet to be proven. Early instruction in reading, regardless of how successful it is, cannot fully prepare students for the literacy demands that evolve after third grade (Biancarosa, 2012).
Adolescents must be engaged in meaningful, relevant work that will improve their creative and critical thinking and that will also encourage them to care for and about one another. Chapter authors Mertens, Anfara, and Roney (2009) in An International Look at Educating Young Adolescents documented through comparative analysis of 14 countries a worldwide realization that schooling should respond to the needs of adolescents, in effect verifying earlier studies that students need to be actively engaged. Cooperative learning is one way to engage students in ways of learning that has been credited with leading to higher student achievement. Practitioners continue to utilize cooperative learning strategies with somewhat varied, but generally positive results (Leonard & McElroy, 2000), including improved student interactions, group interdependence, and improvement in critical thinking during team work.

“Achievement gaps, if left unaddressed will become ‘employment gaps’ and ‘salary gaps,’ as opportunities for those not equipped with the literacy skills needed for entry-level training become nonexistent” (Salinger, 2011, p. 15). The push is on to improve student achievement with more rigorous curriculum, but having an abundance of facts resulting from a focus on the basics does not equate to higher literacy, thinking, or productivity skills. Facts become outdated; critical thinking does not. Subject matter content can evolve, but the fundamentals of functional literacy are timeless and cut across all education disciplines and life functions.

If, in fact, eliminating the achievement gap is a goal of federal, state, and local educational policymakers, then reason dictates that efforts are taken that address the social and economic factors inherent in many urban communities. Although the present economic downturn has led all school districts to make tough choices relative to budget
cuts, urban schools that research shows typically start with fewer resources tend to be the hardest hit. This distinction is important because many adolescents, especially urban students, struggle to read at a basic level, yet instruction in reading is typically not taught at the middle school level; classroom opportunities to develop critical thinking are hampered in many urban schools due to time constraints; and access to opportunities and resources leading to improvement in literacy is questionable (Biancarosa & Snow, 2006).

It should come as no surprise that literacy skills learned in the elementary years will not suffice in the middle and high school years when assignments are longer, perhaps more difficult, and more content-rich, and the students are expected to analyze, interpret, and respond critically to what they read and write. Equipping students so that they are prepared for the challenges they will face 20 and 30 years from now should be the goal of adolescent literacy, as opposed to a goal of graduating more students from slightly improved schools (Biancarosa & Snow, 2006).

Some scholars highlight in no uncertain terms factors thought to decrease the achievement gap. For others, the problem lies not so much with the achievement gap as it does with what Ladson-Billings (2006) refers to as the education debt in reference to the reality that, not only has an education disparity existed for some time, it also fluctuates. The question is, why can’t we get rid of this gap? Ladson-Billings suggests that the achievement gap referred to in much of the literature is a “logical outcome” of our historical, economic, sociopolitical, and moral decisions and policies that characterize our society and thus have led to the education debt. In a similar vein, Karp (2003) argues that NCLB and the accompanying sanctions will do little to address the needs of public schools.
Teachers encounter older students in their classrooms who do not have fundamental knowledge about literacy. When these students are expected to perform at a literacy level beyond their ability, due to high levels of accountability and even higher standards, a perpetuation of the status quo is almost inevitable. One possible way to address this concern is to teach both basic skills and critical thinking skills. Rothstein, Wilder, and Jacobsen (2007) agree that schools must focus on more than basic skills in order to prepare students for work and life, and that if we want students to become critical thinkers, we need to teach critical thinking skills.

This study, and thus this literature review, explores the question of how core content teachers in urban middle schools characterized by high poverty and persistently low reading achievement can increase learning opportunity for their students—especially when those students are from traditionally underperforming racial and ethnic groups. This literature review tapped into scholars who present research findings that suggest teachers can and do increase learning opportunity, and thus academic attainment for middle school students in persistently low performing schools, by developing and using strategies in several areas: the explicit teaching of literacy skills and strategies, the explicit teaching of thinking skills and strategies, and the intentional use of cooperative learning structures and processes. This review of the literature also revealed, however, that each of these requires specific allotments of time, planning, and resources in school environments where time is never enough, resources are shrinking and often inequitably distributed, and teachers may or may not be adequately prepared to understand, much less effectively use strategies and practices that are not directly embedded in their specific discipline or content preparation.
This leads to the conclusion that it is worth exploring if and how actual middle school core content teachers have found ways to leverage learning opportunity and impact by integrating their content instruction with both literacy and thinking skills instruction within a cooperative learning instructional design. While this study does not presume that there are a number of teachers who bring this much intentionality about teaching their content, teaching reading, teaching thinking, and teaching cooperative learning all at the same time, knowing where and how teachers are naturally making connections with and for their students among any of these could be instructive. It could also reveal where teachers are finding natural opportunities for this type of blended learning and where they are not. This chapter sets up the lens for examining middle school core content teachers’ use of instruction that blends content, literacy, thinking, and cooperative learning elements. Chapter III will detail the study design to use that lens for a case study examination of current practice in one urban persistently underperforming middle school serving a predominantly African American student population with high levels of poverty and low levels of academic (and especially reading) attainment.
CHAPTER III
METHODOLOGY

Overview of Purpose and Methods

As presented in Chapter I, the overarching research question for this study is, “Where, how, and why do middle school core content teachers from a high poverty urban school with low levels of assessed student reading proficiency use cooperative group learning as an instructional model in their classes?” To explore this overarching question further, the following sub-questions were also investigated:

1. At what levels of Bloom’s Taxonomy are the cooperative learning activities targeted?
2. What content area learning outcomes do the cooperative learning activities address?
3. What, if any, academic competencies or learning outcomes, not directly ascribed to that content area, do teachers incorporate into the learning activities?
4. What, if any, non-academic competencies or learning outcomes (e.g., social skills, creativity, decision-making skills, etc.) do teachers incorporate into the learning activities?
5. How do the teachers assess the students’ learning outcomes from cooperative learning lessons?
An action research case study approach was used to determine how the teachers think about, plan for, and execute the use of cooperative learning in their classroom instructional model. The researcher used within and across case analysis to also examine if, where, and how the four content area teachers blended or integrated the use of literacy skills (in particular, reading strategies), critical thinking skills, social skills, and personal management skills as they designed and carried out content based lessons in a cooperative learning format. The action research component of the study involved (a) a pre-conference between the teacher and the researcher to set up the lesson, (b) a lesson observation with the researcher directly observing and collecting field notes and the teacher videotaping the lesson for later debriefing, and (c) a post-lesson conference in which the researcher and teacher watched the videotaped lesson and debriefed what they saw.

Team learning, such as that achieved from working in cooperative groups, has been shown to nurture a philosophy of cooperation and gives adolescents an opportunity to interact with their peers. It is important to recognize that there is a difference between having students work in groups and structuring students to work cooperatively (Johnson & Johnson, 1988). For purposes of this study, cooperative learning will have an operational definition from Johnson et al. (1998), who see cooperative learning as small groups of students working together to maximize their own and each other’s learning. Cooperative learning is recognized by some as an effective approach for developing students’ capacity to think (Ennis, 1989; Johnson & Johnson, 1989, 2005; Kagan, 1994; Mueller & Fleming, 2001). Critical thinking, for purposes of this study, is responsible skillful thinking that represents good judgment based on the context and criteria and is
self-correcting (Lipman, 1988). Thus, thinking skills will include specific levels of Bloom’s Taxonomy of thinking and responding (Marzano & Kendall, 2007), and literacy skills include specific reading writing strategies (Alvermann, 2002; Biancarosa, 2005, 2012) that students are required to apply in order to carry out the cooperative learning activity. Social skills and personal management skills will include processes or structures that define how the students are expected to work together within the cooperative learning lesson (Johnson & Johnson, 2005, Johnson et al., 2010; Kagan, 1994).

I selected case study methodology as the overarching design for this study, because it allowed me to take an in-depth look at how a sample of middle school content area teachers think about and carry out cooperative learning and whether or not or how these teachers find or make opportunity to address essential literacy, thinking, and social skills along with their core content objectives when they use cooperative group learning. Case studies are a good match for either a constructivist or co-constructivist inquiry process because they (a) bring the researcher into the context where a phenomenon under study is actually happening; (b) allow the researcher an open-ended way of eliciting a multi-faceted understanding of the people, the process, and the context; and (c) yield highly descriptive data from which deeper understandings might be derived (Creswell, 1998). Glatthorn and Joyner (2005) write that “case study research is undertaken to provide a detailed description of a particular situation, organization, individual, or event” (p. 105). “Case studies focus on process rather than outcomes, on context rather than a specific variable, in discovery rather than confirmation” (Merriam, 1998, p. 233). The twofold purpose of a case study, according to Merriam, is “to arrive at comprehensive
understanding of the groups under study” and “to develop general theoretical statements about regularities in social structure and process” (p. 233).

This case study is framed by the theory of social interdependence as elaborated on by Johnson and Johnson (2005). Social interdependence theory asserts that the students, through social interaction, will gain knowledge in their class. Essentially, they are interdependent with and for each other for learning. Another aspect of this theory presumes that how the interdependence is structured determines exactly how the students will interact. From there, social interdependence theory concludes that how individuals interact and their interaction patterns determine the outcomes of the situation (Gillies & Ashman, 2003). This chapter describes the research approach, the study setting, instrumentation, data collection procedures, data analysis, as well as the delimitations and limitations of the study.

Study Setting and Subjects

This study was conducted in a Midwestern urban middle school with a student profile characterized by (a) low socio-economic status as defined by qualification for the federal free and reduced lunch program; (b) a high percentage of African American students; (c) a recent trend of enrollment decline; and (d) a persistent pattern of academic performance below state average, coupled with low rates of reading proficiency. Open-enrollment has led to a fluctuation in enrollment during recent years with an enrollment of approximately 538 students as of the 2013-2014 school year. The middle school is comprised of seventh and eighth grades.

I selected this school from which to solicit participation because the school met the study criteria for grade levels (within grades 6–8), student profile (high poverty and
high minority), and academic performance (one or more areas of persistently below state average academic performance on state assessments including reading), and limited or declining resources (in this case, reductions in state aid revenues due to significant decline in student enrollment). I also began by recruiting this school from among many that could have been the setting for this study within a highly urbanized four- or five-county area because of access to the superintendent and school principal, who provided permission to recruit teacher participants and assistance with the process. Recruitment began with a meeting with the superintendent to solicit approval, a letter from the superintendent permitting me to recruit, and phone contact with the principal in which I sought and received assistance for the recruitment process. Specifically, this study required that I recruit four middle school teachers who teach in one of the four core content areas: mathematics, science, social studies, and language arts.

**Recruitment and Consent Procedures**

The middle school in the urban district I recruited for this study offers a grades 7–8 program and sufficient numbers of teachers in each of the core academic areas (math, science, social studies, and language arts) to offer a potential candidate pool. Because my study involved myself, as the researcher, and the teacher working together to pre-conference, observe, and post-conference about a content based cooperative learning lesson, the ability to establish rapport with the teacher participants was of prime concern. For this reason, as well as those listed above regarding how the school and district met my study criteria, I solicited the participation of a district with which I have had a relationship. This allowed me to more readily establish trust and build a collegial relationship with study participants. If my first choice of district had declined to
participate, I had identified others that met my study criteria, are geographically accessible to me, and with whom I could readily engage due to my past experience as a teacher in the area. Fortunately, the first district I approached agreed to participate and I was able to recruit the four teacher participants this study required.

After receiving the superintendent’s approval and the principal’s agreement to assist, I made contact with the school’s math, science, language arts, and social studies teachers through a recruitment letter or notice (Appendix C). The notice presented a description of the study and what would be asked of teachers who decide to participate in the study. Teachers who were interested in knowing more about the study were invited to meet with me to go through a full explanation guided by the consent form (Appendix C).

Inclusionary criteria for participating were (a) the teacher teaches primarily a schedule of classes in one or more of the four core content areas, and (b) the teacher has taught in the school for at least a year. Exclusionary criteria applied to any teacher who was pre-tenured or on a plan of assistance due to ineffective or minimally effective teacher evaluation ratings at the time of the study. As I met with teachers, I accepted the first of each of the math, science, language arts, and social studies teachers who fit the study criteria until I had consented participants in each of the four core areas. To avoid rejecting any person after meeting with them, I scheduled only one meeting at a time for teachers in each of the four areas. After securing informed consent from one teacher in each of the four areas, I ceased meeting with prospective teacher participants and sent a communication to the rest of the eligible teachers that I had obtained the participation I needed for the study with a thanks for their interest.
I did not need to recruit or go through a consent process with students for this study, because they were not involved in any activity where they were providing any data for the study other than that which would be collected about how students are generally responding to a teacher’s instruction through the course of a normal teacher observation. Notes collected during the observations of the lesson that participating teachers conducted focused on what the teachers were doing and how students were engaging in and responding to the lesson. During the observation note taking, I did not record any identifying information about given students. The teacher videotaped the lesson as a device for facilitating the post-lesson conference, but possession of the videotape was either maintained by the teachers or remained in a locked on-site location at all times and no data were directly transcribed from the tape. While the post-conference with the teacher involved conversations with the teacher regarding observed student response to the lesson and work the students produced during the lesson, the data collected during the post-conference focused on how the teacher thought about and interpreted or understood the lesson observed.

Data Collection

This study was organized into four cases: one for the lesson each of the four teacher participants conceptualized, carried out, and debriefed with me as the researcher. Data were collected in three phases: (1) the pre-conference using semi-structured interview process, (2) the lesson observation using researcher field notes and a teacher collected video of the lesson, and (3) the post-conference in which the teacher and researcher debriefed the lesson with the aid of the teacher collected video and the researcher collected field notes. Other sources of data were features of the classroom
environment, lesson plans, student work, and student actions that aided the researcher in acquiring information necessary to explore the research questions.

Teachers were asked to design a normal lesson with the exception that they were to use a cooperative learning lesson design. The researcher did not provide specific directions for how the cooperative learning lesson would be designed; that was left entirely up to the teacher. Teachers could use whatever teaching materials and resources they determined appropriate to the lesson.

Data collected during the initial lesson planning pre-conference session consisted of teachers responding to a 9-question interview (Appendix D). The data collected during the interview were audiorecorded by the researcher and transcribed verbatim. The interview transcripts were augmented by any field notes the researcher collected while conducting the pre-conference, including notes regarding instructional materials, classroom environment, or other things the researcher observed during the pre-conference. The researcher used an observation guide (Appendix H) to help capture elements of cooperative learning, literacy skills, thinking skills, social skills, etc., during the lesson. These notes focused on both what the teacher was doing and saying and what the students were doing and saying in response, while observing the teacher carry out the cooperative learning lesson.

Data collected during the post-conference included a transcription of the audiotaped conference session and field notes collected by the researcher while watching the videotape of the lesson with the teacher and conducting a debriefing of the lesson. As with the pre-conference, the audiotaped post-conference was transcribed verbatim and interfaced with the field notes.
The basic design of the study described here involved teacher implementation of a cooperative learning structure while the researcher looked for and probed into how the teacher thinks about the use of cooperative learning to teach the subject area content and any other areas of literacy, thinking, social, and personal management skills, and processes the teacher chooses to embed within the lesson. Relating to the incorporation of thinking skills, the researcher looked first at how the teacher engaged students in cooperative learning activities that call for application, analysis, synthesis, and evaluation, as opposed to lower order or basic thinking skills reflective of the first two levels of Bloom’s Taxonomy, i.e., knowledge and comprehension, which are typically thought not to be characteristic of thinking critically. Teachers utilize a number of supplemental resources in their day-to-day instructional preparation. One such resource is Linda G. Barton’s flipbook, *Quick Flip Questions for Critical Thinking*. Barton suggests the use of verbs as key words to structure questions and tasks that help develop higher levels of thinking. A brief description is given here as an overview of what they are and the context in which they may be used (Barton, 1997):

*Application:* Solve problems to new situations by applying acquired knowledge, facts, techniques, and rules in a different way. *Key Words:* apply, build, choose, construct, develop, experiment with, identify, interview, make use of, model, organize, plan, select, solve, utilize.

*Analysis:* Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations. *Key Words:* analyze, assumption, categorize, classify, compare, conclusion, contrast, discover,
dissect, distinguish, divide, examine, function, inference, inspect, list, motive, relationships, simplify, survey, take part in, test for, theme.

**Synthesis:** Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions. *Key Words:* adapt, build, change, choose, combine, compile, compose, construct, create, delete, design, develop, discuss, elaborate, estimate, formulate, happen, imagine, improve, invent, make up, maximize, minimize, modify, original, originate, plan, predict, propose, solution, solve, suppose, test, theorize.

**Evaluation:** Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. *Key Words:* agree, appraise, assess, award, choose, compare, conclude, criteria, criticize, decide, deduct, defend, determine, disprove, dispute, estimate, evaluate, explain, importance, influence, interpret, judge, justify, mark, measure, opinion, perceive, prioritize, prove, rate, recommend, rule on, select, support value (Barton, 1997).

Barton’s descriptors and key words served as the framework for both listening and watching for the teachers’ use of critical or higher order thinking skills for this study.

This study also employs specific features of cooperative learning structure to create the classroom learning context for the action research. Such features include: (a) group participation, (b) shared responsibility, (c) quality of interaction, (d) member roles, (e) team resolutions, and (f) individual accountability. Demonstrating critical thinking skills while working in a group setting that yields high dividends for all requires a commitment to listen, debate, share, and negotiate. The teacher’s role is to select and
structure the task so that students can learn. As a result of working with others, the students can play a larger part in their own learning.

Teachers are no doubt aware that some students do not work well in small groups. This reluctance may be due to the students’ limited social and interaction skills (Gillies & Ashman, 2003). Providing a safe and secure environment and allowing time for an exchange of ideas by students will help some students to feel successful and more inclined to want to participate in small groups. Another factor that can encourage participation is to plan for mixed-ability groups. In high-ability groups, students have been shown to assume that others know how to solve the problem and thus they put forth little effort to do so. The teacher may find that in low-ability groups no one understands the problem well enough to help others (Gillies & Ashman, 2003).

Shared responsibility, another feature of cooperative group structures, is referred to by Johnson and Johnson (1991) as positive interdependence. Shared responsibility happens when students realize that their individual success is linked to the success of every member of the group. The quality of interaction resulting from group work has been shown to result in increased self-esteem, improvement in relationships among students, and an improvement in social and emotional skills (Frey et al., 2009). Students who are given the opportunity to work cooperatively tend to trust each other, form friendships, influence each other, and exhibit less negative or competitive behavior (Cohen, 1994).

To eliminate or minimize possible disciplinary problems, students should be assigned distinct roles when working cooperatively, such as recorder, materials manager,
encourager, reporter, and summarizer. These member roles should be specific and necessary for completing the assignment (Frey et al., 2009).

Another component of the cooperative learning structure is learning how to resolve problems as a team. If handling conflicts were easy, local, state, and federal governments would be more reflective of the value of peaceful resolutions. Deutsch (1993) reminds us that “cooperative learning does not prepare students for the adult world, which is highly competitive” (p. 511), but the premise of cooperative learning is interdependence and co-creation. The fact that adults still struggle with conflict resolution confirms the importance of preparing students to work in small groups. One possible way to do this is to establish ground rules for the group, such as agree to disagree and be open to others’ ideas.

One final area of focus in establishing a cooperative learning structure is that of individual accountability. Teachers are accountable for students’ learning. One way to know what and if the students are learning is to establish an accountability system. Giving both an individual and a group grade with all students aware that they will receive an individual grade and informing them that they will be expected to provide feedback on their performance and the work of others in the group is one way to account for both individual and group performance (Frey et al., 2009). Cohen (1994) agrees that assigning both individual and group grades is one way to avoid what has been called the “free rider,” problem—where some people sit back and let others do the work.

Social interaction elements of interest for this study include a description of how students shared ideas, built on other’s ideas, handled group putdowns (if necessary), listened to others, and used appropriate tone or voice when working cooperatively. How
students access prior knowledge, understand the concepts taught, and use summarization techniques provided the literacy skills focus for this study. These skills represent key skills for adolescent literacy improvement as they are interrelated and apply to any situation where students must use, interpret, and apply concepts from reading to a learning task.

Instrumentation

For this qualitative case study, the researcher used data collection protocols rather than tightly configured instruments. This study is organized into three phases. During Phase I, the participants were asked to respond to 9 interview questions, the first of which helped collect a few simple demographic points and the other eight which explored teachers’ background and experience with using cooperative learning, teaching literacy skills, and developing thinking skills, as well as the teachers’ predispositions to and preparation for using cooperative learning (Appendix D). During the pre-conference, the researcher also reviewed the protocol for setting up and conducting the observation with the participating teachers (Appendix E). Finally, during the pre-conference, the researcher asked the teacher to describe how he or she would be using cooperative learning during the lesson to be observed. The lesson was designed to fit into one class period. The researcher audiorecorded and took field notes of the planning session to guide observations of the lessons and the post lesson conference.

During Phase II, the researcher used the “Researcher Protocol for Conducting Observations and Researcher Protocol for Debriefing the Lesson During the Post-Observation Conference” (adapted from Gambrell, Morrow, & Pressley, 2007), which provides a lens for observing how the teacher (a) selects the group size most appropriate
for the lesson; (b) assigns students to groups; (c) arranges the classroom; (d) sets the purpose for the cooperative learning lesson; and (e) carries out the lesson including the incorporation of any literacy, thinking, or social skills (Appendix E). Evidence of critical thinking skills included such behaviors as application, or applying new knowledge in a different way; analysis, or reflective thinking, examining and breaking information into parts by identifying motives or causes, making inferences and using evidence to support generalizations; synthesis, putting information together in a different way by combining elements in a new pattern or proposing alternative solutions; and evaluation, presenting and defending opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria (Barton, 1997).

Evidence of social skills included students’ interacting positively in the group through such actions as sharing ideas, building on each other’s ideas, avoiding putdowns, listening to others opinions, and using the appropriate tone and voice for the activity. Specific to cooperative learning, the researcher checked for evidence of how students executed the areas of group participation, shared responsibility, team interactions, team resolutions, individual accountability, and carrying out a specific role assignment.

How students accessed their prior knowledge, whether through brainstorming with other members of the group, and how they used concept maps, other comprehension aids, or methods was noted, as well as evidence that they understood the concepts. This evidence could be demonstrated by students in either oral or written manifestations, including any summarization of the work completed.

A post-conference meeting during Phase III took place to allow the teacher and researcher to work together to debrief the lesson using notes that the researcher captured
on the Researcher Protocol for Conducting Observations and Researcher Protocol for Debriefing the Lesson During the Post-Observation Conference (Appendix E). Field notes and audio recordings were taken during the post-conference meeting.

**Data Analysis Plan**

Analyzing the data in a qualitative case study involves working inductively from the particulars to more general perspectives, such as that of themes, dimensions, codes, or categories (Creswell, 1998). The data were in the form of transcribed audiotaped pre- and post-lesson conference sessions, field notes from both pre and post lesson conferencing sessions, researcher lesson observation field notes, researcher notes from the Researcher Protocol for Conducting Observations and Researcher Protocol for Debriefing the Lesson During the Post-Observation Conference (Appendix E), students’ work, lesson plans, and other pertinent features of the classroom context for the lesson observations. Audio recordings were fully transcribed and notes taken during observations (both general field notes and notes captured on the Researcher Protocol for Conducting Observations and Researcher Protocol for Debriefing the Lesson During the Post-Observation Conference were typed. Triangulation of the multiple sources was used to help confirm the findings.

The analysis began by creating code books CCA-CCF (Appendix F) to create a pre-framed set of coding categories for extracting data from all data sources. The pre-framed set of coding categories included:

1. Code Book Category A – Experience with and Use of Cooperative Learning
2. Code Book Category B – Infusing Content Area Knowledge and Skills into a Cooperative Learning Lesson
3. Code Book Category C – Infusion of Literacy Skills in the Lesson
4. Code Book Category D – Infusion of Thinking Skills in the Lesson

5. Code Book Category E – Infusion of Social Skills in the Lesson

6. Code Book Category F – Reflecting on and Interpreting the Lesson

During the initial stage of data analysis, the researcher started by reading all transcriptions, observation notes, and field notes three times: the first time to gain a sense of the whole, the second time to identify and capture in a memo overarching impressions, and the third time to verify those impressions. The memo was set aside to revisit after stage two of the data analysis. For stage two, the researcher lifted in vivo codes (single words, phrases, or longer passages as needed to capture meaning) that fit one or more of the pre-figured data analysis coding categories or sub-categories (see sub-categories of Code Book Categories A-F in Appendix F). This process was applied to all data sources within a descriptive analysis frame (Saldana, 2013). Within each coding category (A-F), the in vivo codes were grouped by coding similarities for stage three of the data analysis process. To do this, I assigned each grouping to one or more research questions and/or sub-questions where that grouping provided information or insights pertaining to those questions. Next, I began the process of collapsing groupings into thematic strands across all data sources. From there the groupings were reduced to thematic strands that capture the essence of how the teachers think about, plan for, use, and debrief a cooperative learning essence. I then tested the thematic strands as overarching categories of data and reorganize them into major themes and sub-themes. Finally, I assessed each theme and sub-theme for applicability to each of the research questions and sub-questions as part of the confirmatory process for the final set of themes and sub-themes.
In stage four of the data analysis, I organized the findings based on final thematic codes developed during the recursive process of analysis, categorization, and review of the propositional themes against the research questions and sub-questions (Creswell, 2003; Saldana, 2013). Data displays were created to help communicate the findings and how they respond to the research questions that guided this investigation. The themes and sub-themes were then translated into a descriptive essence for each of the teachers and the descriptive essence was used to create vignette for each teacher, focusing on how the descriptive essence portrays the essential insights and understandings that respond to the research questions.

**Delimitations/Limitations**

This study is delimited by the fact that, in order to capture rich, detailed renditions of how four middle school content teachers think about, plan for, and implement cooperative learning, the study does not attempt to produce generalizable or even broadly transferable findings. The study does, however, provide a deeper dive into the ways that middle school core content teachers think about and apply the instructional model of cooperative learning to the competing demands of serving their students in a context of high academic expectations, persistently low academic performance, and multiple student characteristics that associate with academic challenge. Given that these teachers cannot assume that students will bring highly developed learning, thinking, literacy, social, or personal management strategies to the task of learning core content, these teachers offer an instructive example (in a set of cases) from which insight about how teachers think about and respond to competing needs and learning challenges may be derived.
A limitation for this study is the fact that the researcher and teacher participants did not engage over a period of time during which the researcher could repeat the inquiry process multiple times and, thereby, reach deeper, more confirmable patterns of teacher thinking and behavior. Additionally, the researcher and teachers did not have an opportunity to work together over time to develop and confirm shared definitions and characteristics of cooperative learning or the teaching and application of literacy skills, critical thinking, social skills, and personal management skills. Critical thinking is often expressed either verbally or in written form, which may involve a student’s vocabulary and word choice. Since the particular district where this study is taking place is located in a minority district, a possible limitation might be that the researcher (although highly experienced with students who fit the profile of the students in the classrooms observed for this study) may or may not have properly interpreted students’ thinking processes, peer interactions, or responses to the instructional activities due to differences in these students’ linguistic tools and communication processes (Shachar & Sharan, 1994).

**Summary**

This study proposes to shed some light on where, how, and for what purposes middle school core content teachers in school contexts characterized by high poverty, persistently low academic performance trends, limited or shrinking resources, and competing student needs use cooperative learning as an instructional model for leveraging the impact of instruction and expanding learning opportunity for minority (in this case, African American) student populations. During this action research study, the teacher and researcher were able to examine how the teacher thinks about, is inclined to
use, and assesses the results of cooperative learning activities in teaching the core content areas.

A qualitative action research can assist in providing a connection between research and practice in education; specifically, according to Mills (2000), action research is participatory and democratic; socially responsive and takes place in context; helps teacher researchers examine the everyday, taken-for-granted ways in which they carry out professional practice; and assists students, teachers, and administrators improve their learning, teaching, and policy making as a result of the knowledge gained through action research. The role of the researcher as part of the study provides credibility to the study as the researcher should be aware of any biases or predispositions at the beginning of the study (Creswell, 1998). The case study design of this exploratory investigation allowed the researcher to stay in a reflective and reflexive mode, remain open to what the action-research engagement with each teacher could offer by way of insights and understandings, and produce a descriptive distillation of what was learned.
CHAPTER IV
RESULTS

The purpose of this chapter is to report the findings of this action research case study, which sought to describe how content area teachers in a middle school with low reading achievement levels utilize cooperative learning in their content area given the current context of accountability for student mastery of tested core content outcomes. Data were collected through audio-recorded pre-conferences, videotaped observations, field notes, and audio-recorded post-conferences. The study was conducted in three phases: Phase I: pre-conference, Phase II: observation, and Phase III: post-conference. This chapter will (a) describe the sample selection, (b) describe the data collection methods and procedures, and (c) review the findings from the study.

Sample Selection

Eight eighth grade middle school teachers in an urban school district in the Midwestern United States were contacted by letter and by email asking for their participation. Four teachers agreed to participate: one science teacher, one social studies teacher, one math teacher, and one language arts teacher. The research activities took place over a three-week period during the second semester to allow time for the students and teachers to get to know each other. This is a Title I school with a population of 529 students with 84% receiving free or reduced lunches. Housed in the school are sixth through eighth graders; however, the middle school is made up of seventh and eighth
graders only. The specifics of the participant recruitment, sampling, and consent process are detailed in Chapter III.

**Description of the Data**

The analysis used for this study followed the guidelines of Saldana (2013) which included: (a) reading through the data three times, (b) setting up coding categories, (c) coding the data, (d) transferring the coded data to the code book, (e) interpreting through analytic memos, (f) organizing the data in the code books using categories and themes, and (g) writing the report to present the story. In vivo coding allows for using the exact words of the participants in determining the categories and themes. The coding scheme consisted of six categories: (1) How the teachers conceptualize, plan for, and deliver cooperative learning lessons in their content areas; (2) How the teachers infuse and assess the content learning objectives into a cooperative learning lesson; (3) How the teachers infuse and assess literacy skills within the cooperative learning lesson; (4) How the teachers infuse and assess thinking skills within the cooperative learning lesson; (5) How the teachers infuse and assess social skills within the cooperative learning lesson; and (6) How the teachers reflect and interpret what occurred during the delivery of a cooperative learning lesson.

The study’s specific focus was to describe (a) where, how, and why teachers decide to use cooperative learning in teaching their curriculum; (b) the kinds of learning outcomes teachers address within cooperative learning based lessons; (c) whether or not the learning activities encompass outcomes outside the specific subject area (e.g., reading skills, writing skills, thinking skills, problem solving skills, social skills, etc.); (d) at what
levels of Bloom’s Taxonomy of learning and thinking processes students are asked to perform while doing cooperative learning activities; and (e) how teachers assess students’ learning after the cooperative learning lesson.

**Phase I: Pre-Conference**

The qualitative findings presented here focus on areas (a) how teachers characterized their teaching of cooperative learning; (b) how teachers infuse and assess content learning objectives, literacy skills, thinking skills, and social skills in a cooperative learning structure; and (c) teachers’ reflections and interpretations on the cooperative learning lesson. Questions related to each of these three areas were contained in the pre-conference and post-conference. Before presenting the data, it is important to note that the district recently implemented a K-8 initiative referred to as Learning Cycles to increase the students’ critical thinking skills. A key feature of the model used in the district is a focus on inquiry cycles from both a teacher perspective and a student perspective with a major focus on improving the students’ critical thinking skills.

Learning Cycles were originally introduced by Burke, Harste, and Short (1995). Bobby and Danny received training in Learning Cycles and began implementing it in their classrooms during the second semester. The other teachers are expected to be trained in Learning Cycles in the near future. The teachers’ names—Andy, Bobby, Conny, and Danny—are fictitious names used to preserve confidentiality. The research findings will be shown in individual narrative form or in tables where doing so provides a more in-depth view of the data. As shown in Table 1, the data analysis began with a review of the alignment of the research questions to the data sources.
Table 1

*Data Analysis: How Research Questions Align with Data Sources*

<table>
<thead>
<tr>
<th>Research Questions (RQ)</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Conference Observation</td>
<td>Post-Conference</td>
</tr>
<tr>
<td>RQ #1: How do teachers conceptualize, plan for, and deliver cooperative learning lessons in their content area?</td>
<td>X</td>
</tr>
<tr>
<td>RQ #2: How does the teacher infuse and assess the content learning objectives into a cooperative learning lesson?</td>
<td>X</td>
</tr>
<tr>
<td>RQ #3: How does the teacher infuse and assess literacy skills within the cooperative learning lesson?</td>
<td></td>
</tr>
<tr>
<td>RQ #4: How does the teacher infuse and assess thinking skills within the cooperative learning lesson?</td>
<td>X</td>
</tr>
<tr>
<td>RQ #5: How does the teacher infuse and assess social skills within the cooperative learning lesson?</td>
<td>X</td>
</tr>
<tr>
<td>RQ #6: How does the teacher reflect and interpret what occurred during the delivery of a cooperative learning lesson?</td>
<td>X</td>
</tr>
</tbody>
</table>

The first focus in the pre-conference interview was to examine the teachers’ background with and concepts about cooperative learning. When asked their definition of cooperative learning, the teachers responded as seen in Table 2.
Table 2

*Teachers’ Definition of Cooperative Learning*

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andy</td>
<td>“Students working in some form of group toward a common task, with individual roles.”</td>
</tr>
<tr>
<td>Bobby</td>
<td>“Students working in groups to come to their own conclusion and helping each other.”</td>
</tr>
<tr>
<td>Conny</td>
<td>“Students working together to achieve a common goal and each student held accountable.”</td>
</tr>
<tr>
<td>Danny</td>
<td>“A group where students work together and get further than they would individually.”</td>
</tr>
</tbody>
</table>

**Research Question 1**

*How do teachers conceptualize, plan for, and deliver cooperative learning lessons in their content area?*

To answer my research questions, it was essential to get teachers’ thoughts and ideas about how they conceptualize cooperative learning, specifically their beliefs about cooperative learning lessons, how they plan for, conduct, and assess a cooperative learning lesson. How teachers conceptualize and plan for cooperative learning lessons in their content area is described in the Phase I data, and how teachers delivered their cooperative learning lesson is described in the Phase II analysis. The following vignettes with tables provide a summary of the findings for each participant.

**Andy.** Andy has been teaching for 14 years. Formal training in cooperative learning was attained by attending Kagan (1994) workshops over a period of two summers. Dr. Spencer Kagan is well known in the educational arena as a leader in the training of cooperative learning strategies. The question “How often do you use
cooperate groups?” brought a response of “Maybe once a week.” Training in literacy skills was also formal through the services of the district’s literacy coach. The basis of Andy’s training in teaching thinking skills is “self-taught,” as Andy acknowledges reading books by Marzano and others on thinking skills. A summary of Andy’s beliefs about cooperative learning is presented in Table 3.

Table 3

Beliefs About Cooperative Learning: Andy

<table>
<thead>
<tr>
<th>Interview Questions</th>
<th>Andy’s Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>In your experience how has cooperative learning worked as an instructional strategy with adolescents?</td>
<td>“Cuts back on students mean spirits.” “Gets students to respect one another, to respect what others have to say.”</td>
</tr>
<tr>
<td>How do you plan for cooperative learning lessons?</td>
<td>“When there is a lot to cover.” “Beginning of year, I allow students to get into groups, based on ability levels.”</td>
</tr>
<tr>
<td>What is your purpose in using cooperative learning structures?</td>
<td>“Give students ownership of the goals.”</td>
</tr>
<tr>
<td>How do you establish individual accountability within a cooperative learning lesson or activity?</td>
<td>“Each person has a role. The goals are assigned and the roles are posted on the overhead. We rotate roles from time to time.”</td>
</tr>
<tr>
<td>What literacy skills do you try to develop in cooperative groups?</td>
<td>“I try to infuse ELA strategies, chunking (stopping points), and summarization to provide evidence.”</td>
</tr>
<tr>
<td>What are some of the thinking skills you try to teach in cooperative groups?</td>
<td>“Graphic organizers, brainstorming, Thinking Maps.”</td>
</tr>
<tr>
<td>What social skills do you try to develop in cooperative groups?</td>
<td>“Be a good listener, when one person is talking, all others are listening. To help to do this, I start the school year off using cooperative groups.”</td>
</tr>
</tbody>
</table>
**Bobby.** Bobby is also a 14-year veteran teacher. In addition to teaching in a core area, Bobby also teaches a study skills class. Training in cooperative learning was received through professional development workshops. Bobby’s use of cooperative learning is reflected in the statement, “We have had workshops and professional development in cooperative learning and I have been using it off and on at different levels for about ten years.” The district hired a literacy coach in 2013 and, as a result, all of the participants of this study have benefited from additional literacy training and support. When asked about training in thinking skills, Bobby responded:

Thinking skills. I haven’t had any actual training in thinking skills but we do talk about higher order levels of thinking. I don’t know that I have actually had any classes that were thinking skills classes, but we touch on topics like that and of course it’s something we try to bring out of our students as much as possible.

Bobby prefers not to assign groups and usually does so by “trial and error.”

I am not the type of teacher that is very structured in the sense of putting students in groups. I prefer for them to (group) based on wherever they sit; then that becomes their group because that becomes or ends a table and I move students as needed. If I see a problem, then I say that, “Ok, you can’t be in this group today.” But generally, I honestly do not stick with a seating chart. Especially with the classes as they are. You know you have Honors classes, and generally everyone there is doing well. And then I have my lower level classes, so generally everyone is in the same boat. It’s hard to mix. I wish we had more mixed classes so that I could put that higher level with the lower level. You know what I mean? And of course in every class there is always some that rise to the top. But often what I find with the classes that I have, is that I either have very high achieving, or I have . . . they’re all the same, I won’t even say low achievers, but they are all in the same area whether it’s all B’s or all C’s or mostly lower level. But it is hard to mix and match.

Each group of four used a small dry-erase board to record answers after the groups had put their heads together to discuss, solve, and decide on the correct answer. Table 4 gives a summary of Bobby’s beliefs about cooperative learning.
Table 4

Beliefs About Cooperative Learning: Bobby

<table>
<thead>
<tr>
<th>Interview Questions</th>
<th>Bobby’s Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>In your experience how has cooperative learning worked as an instructional strategy with adolescents?</td>
<td>“It has worked very well if you can find the happy medium of making sure the students are staying on task and making sure that the groupings are specific to what that class might need. And I say that because some students can work well with friends, some can’t, and as a teacher you have to find that balance. With adolescents especially, they are friends one day and an enemy the next. So you have some who feel that, ‘I can’t work with her,’ and part of that balance is, ‘Well, that’s a part of life.’ Unless there is an immediate hassle about to happen, it’s been very positive. The students generally like it as long as I can keep them on task. They enjoy being able to sit with others and work through problems together.”</td>
</tr>
<tr>
<td>How do you plan for cooperative learning lessons?</td>
<td>“Actually, it has become pretty common place so it’s just a matter of not doing the traditional lecture-listen. You just find ways, and even if part of the class is lecture-listen, you still find ways for them to work on things together even if it’s just ok, everyone has the same worksheet, but you all get to work on it together. Sometimes it can be really easy as doing something like that, sometimes it can be more challenging, especially in science, in turns of actually finding an experiment where they all have to work together. So it just depends, but it definitely has become more easier as I get used to working my lessons around that.”</td>
</tr>
<tr>
<td>What is your purpose in using cooperative learning structures?</td>
<td>“Research based. That it is more effective. So, especially at this point, with us becoming a more data driven school they are really leaning towards, ‘What we are doing isn’t necessarily working,’ which is the typical lecture-listen style. So over the years, we have looked at other strategies and that cooperative learning piece has become huge and effective.”</td>
</tr>
<tr>
<td>How do you establish individual accountability within a cooperative learning lesson or activity?</td>
<td>“Walking around. And I usually walk around with a checklist with each person’s name on it. For example, now the students are learning about density, so I would go to each group even though they are working on worksheets together to come up with how to solve the problem. I would ask each student a different question. So I would look at it based on how well can they answer the question that I have asked them. And then I can tell. You can always tell which students are getting it, which ones are not getting it, so that helps a lot. But you have to walk around. You can’t just assume that they are doing what they are supposed to be doing.”</td>
</tr>
</tbody>
</table>
Table 4—Continued

<table>
<thead>
<tr>
<th>Interview Questions</th>
<th>Bobby’s Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>What literacy skills do you try to develop in cooperative groups?</td>
<td>“Finding the main point, and understanding.”</td>
</tr>
<tr>
<td>What are some of the thinking skills you try to teach in cooperative groups?</td>
<td>“Do you realize your strengths and weaknesses and those of your group?” “Depends on the task, may be to infer, use your prior knowledge.”</td>
</tr>
<tr>
<td>What social skills do you try to develop in cooperative groups?</td>
<td>“Listen to others, work together, strengths of your peers, knowing when to listen.”</td>
</tr>
</tbody>
</table>

**Conny.** In addition to teaching in the core subject area, Conny also teaches one social studies class. Conny’s formal training in cooperative learning was acquired through participating in a one-week long Kagan cooperative learning workshop in the summer of 2013. Cooperative learning is used in this classroom, “One a week or every two weeks.” “Think Aloud, does your thinking help or hurt, use Thinking Maps, use Test Prep all the time” was how Conny described training and experience in thinking skills. As with the other teacher participants, Conny acknowledged that the recent focus on literacy is a district initiative. As described by Conny, “The district hired a literacy coach to build literacy skills through reading and we use different types of text.” Conny’s beliefs about cooperative learning are depicted in Table 5.
Beliefs About Cooperative Learning: Conny

<table>
<thead>
<tr>
<th>Interview Questions</th>
<th>Conny’s Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>In your experience how has cooperative learning worked as an instructional strategy with adolescents?</td>
<td>“When structured properly and monitored, it helps strong and struggling students. When you assign roles and monitor each group.”</td>
</tr>
<tr>
<td>How do you plan for cooperative learning lessons?</td>
<td>“Start with the end in mind, how many groups are needed, have students count off to form groups to eliminate best buddies working together.”</td>
</tr>
<tr>
<td>What is your purpose in using cooperative learning structures?</td>
<td>“Don’t have a grand idea. Just use it as another way, also to eliminate angry problems. Use it as a way to differentiate. No grand idea. Use it to provide variety.”</td>
</tr>
<tr>
<td>How do you establish individual accountability within a cooperative learning lesson or activity?</td>
<td>“Assign roles, have each student evaluate the other group member. Student evaluation is a part of the individual grade. Completing the evaluation is a part of the grading process. But the student evaluation will not hurt the grade.”</td>
</tr>
<tr>
<td>What literacy skills do you try to develop in cooperative groups?</td>
<td>“My hope that students will learn something from their peers that I might not have covered.”</td>
</tr>
<tr>
<td>What are some of the thinking skills you try to teach in cooperative groups?</td>
<td>“Comprehension, inferring, also locate essential details that they might not have found on their own and knowing how it relates to the task.”</td>
</tr>
<tr>
<td>What social skills do you try to develop in cooperative groups?</td>
<td>“Being able to work with others. Integrity, dependability, communicate or speak in front of people. All members of the group must stand together when groups report out.”</td>
</tr>
</tbody>
</table>

Danny. Table 6 summarizes Danny’s beliefs about cooperative learning. Danny has been teaching for 14 years. Just like his colleague, Bobby, Danny received training in cooperative learning through district-sponsored professional development. Professional development workshops in cooperative learning usually meant fellow Kagan-trained conference attendees were expected to share their training with the staff. Danny adds, “I have been using cooperative learning groups to some extent for about the last 10 to 12
years.” Training in literacy skills was provided by the district with recent literacy training in 2013. Danny gives as an example of literacy: “Having students use mathematical terminology to state exactly what you mean.” Danny does not have formal training in thinking skills; however, his experience involves using “analysis and synthesis,” resulting from skills acquired personally following supplemental materials based on Bloom’s Taxonomy.

Table 6

**Beliefs About Cooperative Learning: Danny**

<table>
<thead>
<tr>
<th>Interview Questions</th>
<th>Danny’s Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>In your experience how has cooperative learning worked as an instructional strategy with adolescents?</td>
<td>“It is challenging at times due to personality conflicts. They do like working together.”</td>
</tr>
<tr>
<td>How do you plan for cooperative learning lessons?</td>
<td>“Where do I want them to get to and what kind of activity would get me there.”</td>
</tr>
<tr>
<td>What is your purpose in using cooperative learning structures?</td>
<td>“To help the students that are lacking, and having students contribute.”</td>
</tr>
<tr>
<td>How do you establish individual accountability within a cooperative learning lesson or activity?</td>
<td>“The group is going to get a group grade and an individual grade.”</td>
</tr>
<tr>
<td>What literacy skills do you try to develop in cooperative groups?</td>
<td>“Have one person explain and someone else reports out.”</td>
</tr>
<tr>
<td>What are some of the thinking skills you try to teach in cooperative groups?</td>
<td>“Is there another way we can solve this problem, and using your solution to find the answer. Also, analyzing why the problem is wrong.”</td>
</tr>
<tr>
<td>What social skills do you try to develop in cooperative groups?</td>
<td>“Be kind, be respectful. Also, I give a survey at the beginning of the year to find out some of the students’ likes and dislikes and I use this information when setting up my groups. If a student says they don’t like (this course) then I try to put them in a group with someone who does like (this course).”</td>
</tr>
</tbody>
</table>
Phase II: Implementation of the Cooperative Learning Lesson

Research Question 1

*How do teachers deliver cooperative learning lessons in their content area?*

With the exception of Danny, who introduced the cooperative task as soon as the second bell rang, all of the other teachers began the hour with a strategy designed to get the students focused immediately upon arrival. This was done with a quick write in the form of a Do Now, a journal entry, or a Focus Question. The following provides a synopsis of the lesson delivery for each of the study participants.

**Andy’s Lesson**

*Setting up the lesson.* This is a first hour all girls class. Each student has a textbook to take home in addition to the text being available online. Students arrived and selected where they wanted to sit with the exception of a few who sat in their previously assigned seat.

CNN student news is playing when the class arrives in Andy’s classroom. Students know to complete their Focus Question after the CNN news, which the teacher devotes about 10 minutes of class time to. Exposing the students to world events is an important part of Andy’s core beliefs as these thoughts reflect:

So many of our students, when I am talking to them, don’t understand that the United States is just “a country,” that fits in a global type of situation, and CNN does a good job of explaining other stuff that is going on around the world. A lot of my students are interested in this plane that they still haven’t found, that had nothing to do with the U.S. per se.

How we normally find ourselves involved with certain stuff that’s going on around the world. President Putin and his involvement in the Ukraine countries. They have questions about that stuff. CNN lets them know that stuff that is happening around the world lets them know that we are very blessed to be in this part of the world.
Conducting the lesson. Students prior knowledge was activated when Andy reminded the class of what they have done up to this point. The objective, as well as the focus question and the text book page number referencing where the answers could be found were posted on the board. Andy explains:

Here is our task for today: Group Assignment – Each group will be given a subsection of Section 2 to read and explain. Once the section has been read by all members of the group, the group needs to decide what were the most important parts of that subsection? Provide these parts on the group sheet.

Andy cautioned the groups that some may have just the section title on their group sheet and would need to read and write a summarization of their section only, while other groups will have a title and one or more questions to answer. This format was followed only if the textbook included these additional questions. The teacher continued with providing additional instructions as follows:

If you have a question that has been given to your group, please provide this also on the group sheet. When you are finished with your summarization, your group will hang your sheet in the designated area. Students will do a walkabout to read other group’s summarizations.

The teacher also confirmed with each group to see what section they had: “Who has question #1? Who has question #2? Once all groups’ assignments were confirmed, the teacher instructed the class to “go ahead and get started.” The activity generated a great deal of chatter for some of the students. The students worked in jigsaw groups discussing the assigned topic and preparing to present the final group project.

Assessing the lesson. The researcher did not observe assessment of the lesson as Andy discovered that there were only a few minutes before dismissal:

Unfortunately, I see it is taking us a great deal of time to get through some of the information and for some of us to get our parts done so what we will do, the bell is going to be ringing in 2-3 minutes. So what we will do, we will pick up here
tomorrow. The expectation will be to get done, to get through the walk about and everything else that is going on. However, I do see that there are some folks that need to get moving, they are moving really slow and part of the reason is that there is a lot of side-bar conversations going on that has to do with everything else besides what I am asking you to do that’s taking up some of the brain time and focus time.

**Elements observed in Andy’s lesson.** Table 7 summarizes the elements of Cooperative Learning plus other elements the researcher observed during the lesson.

Table 7

<table>
<thead>
<tr>
<th>Observed Elements of Implementing Cooperative Learning in the Classroom: Andy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five Essential Elements of Cooperative Groups</td>
</tr>
<tr>
<td>Positive interdependence (sink or swim together)</td>
</tr>
<tr>
<td>Promotive interactions (exchange of ideas) face-to-face interaction</td>
</tr>
<tr>
<td>Individual and group accountability (roles, tasks, tests)</td>
</tr>
<tr>
<td>Interpersonal and small group skills (social skills)</td>
</tr>
<tr>
<td>Group processing (student reflections on task)</td>
</tr>
<tr>
<td>Other Elements Observed:</td>
</tr>
<tr>
<td>Monitors and evaluates students’ off-task behavior</td>
</tr>
<tr>
<td>Supports academic conversations (outside of group)</td>
</tr>
</tbody>
</table>

The students’ social skills warranted much of Andy’s attention as is evident in Table 7. Andy was vigilant in checking on the progress and understanding of the groups, although included in this procedure were comments such as “Ladies, let me get your attention. We have too many sidebar conversations, first and foremost.” “I am concerned. This has nothing to do with what I am asking you to do.” At one point, Andy returned to
a group to tell them, “I need you to chill out.” These comments suggest that the students were not focused on the lesson. It is likely that the assigned reading material was somewhat of a challenge for some of the students. Andy’s reason for having each member read independently while in the cooperative group structure was, “I wanted to make sure that everybody in the group read the subsection, so that everybody at least had some form of information or some knowledge about what was going on in that subsection.”

Bobby’s Lesson

Setting up the lesson. During the time of my observation, students in Bobby’s class were engaged in a free exchange of ideas and discussion in the format of a group quiz. The teacher stated that the cooperative structure was chosen since the class was nearing the end of a unit and the teacher wanted to check for understanding. Bobby describes the role of the students in setting up the lesson as, “I did not assign a recorder, but just asked them to switch periodically.” “I had one person from each group come up to get supplies at the beginning of the class.”

Conducting the lesson. Teams put their heads together to solve and discuss quiz questions as the teacher displayed them on the white board. At the sound of the timer, the teacher would call out, “Boards up!” and the recorder of each team would hold the dry erase boards up so that the teacher could check answers. In some instances, some of the questions were read aloud by the teacher, if students didn’t appear to understand the question.

The following teacher questioning reflects the content learning strategies:

“Come on think about what it is saying.”
“Are you working by yourself?”

“Help him out, help him out.”

“Hold them up, hold them up, nice and high, nice and high.”

“This is a 5 point answer.”

“Fellows, do you know what you did wrong?” “Are you sure?”

“All right, can we move on now?”

“That’s why I made it a 2 point question because you have to have the answer and the correct units.”

“Fellows, since most of you got it wrong, mass is the amount of matter in something.”

“Ok, let’s look at this because I am surprised that more of you did not get this right.

Bobby retaught a concept when one of the students misunderstood an earlier concept.

Now what I did say, .10 is the same as .1 but .1 and 10 are two different numbers. So, those are some of the things we talked about but never is .1 and 10 the same number. All right? Ok, does everybody see how we got this?

**Assessing the lesson.** How well the students interacted was assessed by walking around and checking on each group by maintaining close proximity. Since roles were not assigned, the teacher announced sporadically: “Switch, if you haven’t done so already.”

“I want everybody to get a chance to write.” Multiple strategies were used to assess students’ individual and group understanding. The following exerts reveal Bobby’s strategy while probing for understanding:

“Fellows, do you know what you did wrong? Are you sure?”
“All right, can we move on now?”

“Ok, does everybody see how we got this?

“Definitions, not examples.”

“Ok, let’s look at this, because I am surprised that more of you did not get this right. Where are we starting? Where are we ending? How do you know that these are increments of 2?”

The level of student excitement may have reflected their level of enjoyment; however, Bobby indicated that having the students conduct a group assessment of this structure is not common place.

I’ll play this game maybe about once every six weeks. So within this school year we have taken a quiz like this, this is probably their 4th time. And they love it! They love it! Obviously, I can’t do it every time like that.

The students no doubt had an extra incentive to do well, to earn the most points, since Bobby distributed candy to the winning team.

**Elements observed in Bobby’s lesson.** Table 8 summarizes the elements of Cooperative Learning plus other elements the researcher observed during the lesson.

The social atmosphere was that of a game which the students all appeared to enjoy. The fact that the teams were competing led to a feeling of excitement that could be felt throughout the room and is reflected in the number of social skills occurrences that Bobby dealt with in the course of the group test. Bobby routinely demonstrated the “sink or swim together” attitude, including reminding students, “Everybody should be helping, this is your quiz grade.”
Table 8

*Observed Elements of Implementing Cooperative Learning in the Classroom: Bobby*

<table>
<thead>
<tr>
<th>Five Essential Elements of Cooperative Groups</th>
<th>Occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive interdependence (sink or swim together)</td>
<td>15</td>
</tr>
<tr>
<td>Promotive interactions (exchange of ideas) face-to-face interaction</td>
<td>11</td>
</tr>
<tr>
<td>Individual and group accountability (roles, tasks, tests)</td>
<td>12</td>
</tr>
<tr>
<td>Interpersonal and small group skills (social skills)</td>
<td>12</td>
</tr>
<tr>
<td>Group processing (student reflections on task)</td>
<td>0</td>
</tr>
</tbody>
</table>

Other Elements Observed:

| Monitors and evaluates students’ off-task behavior                                | 4           |
| Supports academic conversations (outside of group)                               | 4           |

**Conny’s Lesson**

**Setting up the lesson.** Conny has a well-established routine for this first hour all girls class. Upon entering, the students settled in and started work on the day’s “Do Now” warm-up activity. After approximately 10 minutes, two students shared their work orally and Conny proceeded to review the assignment which had been written on the board. “Directions: Each group is required to locate 3 quotes or 3 pieces of evidence to support their claim.”

The claims posted on the board were created by the students from each of the teachers’ core classes. The teacher assigned a claim to each group and distributed worksheets needed for completing the assignment followed by reading each groups
claim. Posted also were the roles to be used with today’s task; however, Conny announced,

I’ll let you determine who in the group is the time keeper, who is the researcher, who is the presenter, and who is the recorder. But if you can’t come to a consensus, call me over and I’ll make the decision, all right?

The teacher proceeded to review how to complete the assignment, including an emphasis on how to complete the work sheet properly.

Excuse me, when you write the group members name right here, I want you to also write what their role is ok? What their position is in the group. So next to their name, you put their role, what their position is within the group, ok?

To be sure the students completed the assignment in the time allotted, Conny announced, “Right now we have a little less than 20 minutes. Time keeper, at 8:45 your assignment within your group should be complete. Let me write that on the board, too.

Conducting the lesson. The time keeper’s role was twofold: keep watch of the time remaining and keep the groups on task. Conny informed the time keeper of a nearby group that one of its members was no longer focused, “I want you to notice that right away. I don’t want to say anything. I want you to notice what she is doing, then you just keep her right on task, ok? All right.” Conny provided students feedback when reviewing their work and suggested that “it was partially correct.” After announcing that “we only have a few minutes left,” the teacher shared with the groups the order in which they would report out. The class had just completed reading the class novel. Each group was given a claim from the novel and had to support it by locating three pieces of evidence from the book. The groups reported out according to the teacher’s predetermined schedule, which included all of the group members coming to the front of the class for the group presentation of their evidence; however, as Conny explained, “Everybody
comes up with the group, but only the presenter is the one who talks.” Conny follows this technique when the groups are reporting out because he feels that “the group members should stand in support of the speaker.”

**Assessing the lesson.** Through frequent reminders and well established criteria in the form of both oral and written instructions, Conny encouraged the cooperative groups to “find evidence to support their claims.” This core area is not constrained by the textbook, because as Conny explained,

> We don’t have a text book. Everything I teach, they have to write in their writer’s notebook. I have to make examples, samples, I have to create some graphic organizers, I have to have them to write notes. We do not have one book that they can just open it up and start reading about claims, or theories. I have to actually explain it.

Conny announced the order in which the groups would report out and what was expected to be included in the report:

> Ok, ladies, let me have everyone’s attention please. I have given every group the order in which they will present. Everybody comes up with the group, but only the presenter is the one who talks. You will present your claim, your evidence, and a little bit of explanation for why you chose certain pieces of evidence, ok?

Conny calls out, “Group One,” and proceeds to instruct them in how to present. “First you just say, Hi, my name is ______ our claim is _______, then read the evidence.” The class was asked to give Group One applause, the students clapped, and Conny asked that the next group come forward.

One member disagreed with the group’s evidence when they were presenting. This prompted the teacher to have that member read aloud the last sentence on their work sheet, which stated, “Make sure each member agrees with the evidence before
presentations.” The dissenting student smiled, and appeared to support her group’s claims.

Conny ended the cooperative lesson with a summary statement on the value of claims and evidence.

It is very important, in order for you to appear credible, (I’ll wait until I have everybody’s attention). It’s very important in your writing and in life to appear, that you have evidence to back up your claims, to support what you are talking about. Anybody can say how they feel, but to be more effective in your communication you want to have evidence to back up anything that you say, ok?

This was followed by an informal oral assessment,

You all did a great job today. All of your evidence was 100% accurate and correct. I just want to say thank you again. Jones, can you collect the books for me please? Brown, can you make sure the books get back in order. Ward, collect all the sheets from each group. And you have the weekend to get your journals in order because I am going to check them on Monday.

Elements observed in Conny’s lesson. Table 9 summarizes the elements of cooperative learning plus other elements the researcher observed during the lesson.

Conny’s concern with making sure the groups stayed focused and completed the task was evident as the timekeepers were expected to keep track of the time and keep their group on task. The timekeepers were reminded often of this responsibility.

Sixty-five percent of the interaction involved in setting up and utilizing cooperative groups dealt with individual and group accountability.
Table 9

*Observed Elements of Implementing Cooperative Learning in the Classroom: Conny*

<table>
<thead>
<tr>
<th>Five Essential Elements of Cooperative Groups</th>
<th>Occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive interdependence (sink or swim together)</td>
<td>11</td>
</tr>
<tr>
<td>Promotive interactions (exchange of ideas) face-to-face interaction</td>
<td>5</td>
</tr>
<tr>
<td>Individual and group accountability (roles, tasks, tests)</td>
<td>13</td>
</tr>
<tr>
<td>Interpersonal and small group skills (social skills)</td>
<td>4</td>
</tr>
<tr>
<td>Group processing (student reflections on task)</td>
<td>0</td>
</tr>
</tbody>
</table>

Other Elements Observed:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitors and evaluates students’ off-task behavior</td>
<td>12</td>
</tr>
<tr>
<td>Supports academic conversations (outside of group)</td>
<td>3</td>
</tr>
</tbody>
</table>

Danny’s Lesson

**Setting up the lesson.** The students in the cooperative learning structure in Danny’s classroom were charged with the task of problem solving. Specifically, “The objective was to have the students solve the equations and realize that some equations had: one solution, multiple solutions, or no solution.” A class warm-up activity (e.g., written prompt or journal entry) was not utilized as Danny states, “We got right into the lesson.”

**Conducting the lesson.** The teacher (Danny) reminded students about the task at hand by explaining that

You want to solve these equations by determining if it is sometimes true, always true, or never true. Can someone give an example of an equation that would never
be true? What would be an equation that would always be true? Are there some equations that are sometimes true?”

Danny visited the groups to check for understanding of the assignment and group progress.

**Assessing the lesson.** When asked, “How did you assess their work after they were done?” Danny responded,

It was just a group grade. I went through to see how many they had in each category that were correct; I gave them a score based on that. And then today we talked about, or went over with the “Do Now” categorizing some equations and then giving them the opportunity to go back over and make any adjustments that they needed to make and that also helps, for anyone that wasn’t here for the original exercise to hear someone explain the same things that I did in their language.

**Elements observed in Danny’s lesson.** Table 10 summarizes the elements of cooperative learning plus other elements the researcher observed during the lesson.

**Table 10**

*Observed Elements of Implementing Cooperative Learning in the Classroom: Danny*

<table>
<thead>
<tr>
<th>Five Essential Elements of Cooperative Groups</th>
<th>Occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive interdependence (sink or swim together)</td>
<td>7</td>
</tr>
<tr>
<td>Promotive interactions (exchange of ideas) face-to-face interaction</td>
<td>7</td>
</tr>
<tr>
<td>Individual and group accountability (roles, tasks, tests)</td>
<td>8</td>
</tr>
<tr>
<td>Interpersonal and small group skills (social skills)</td>
<td>3</td>
</tr>
<tr>
<td>Group processing (student reflections on task)</td>
<td>0</td>
</tr>
<tr>
<td>Other Elements Observed:</td>
<td></td>
</tr>
<tr>
<td>Monitors and evaluates students’ off-task behavior</td>
<td>0</td>
</tr>
<tr>
<td>Supports academic conversations (outside of group)</td>
<td>6</td>
</tr>
</tbody>
</table>
Danny’s students, after putting their heads together to solve the problems first, had the added responsibility of cutting, sorting, and pasting the answers in the correct columns representing sometimes, never, or always true, on a sheet of construction paper that had been provided by the teacher. One group discovered through group discussion that they had incorrectly placed an answer in the wrong column and asked if they could get another sheet of construction paper and start over. The teacher accommodated their request, and the team continued work. The girls in Danny’s class appeared to enjoy the addition of having to cut and paste as they worked together toward completing the assignment.

Social interactions that could lead to negative consequences were at a minimum in Danny’s class as the Table 10 shows. Danny’s task structure required both cognitive and physical involvement and tended to keep the students involved and motivated.

**Research Question 2**

*How does the teacher infuse and assess the content learning objectives into a cooperative learning lesson?*

To examine the teacher inclusion and assessment of the content learning objectives, the researcher focused on how the teachers set-up, implemented, and assessed the lesson. What were the big ideas and pertinent concepts brought out in the lesson? The following summary depicts the objectives of each participant, followed by a narrative of how the teachers sought to meet the objective.

**Andy’s lesson objectives.** The objective, to identify challenges in a pre-selected textbook scenario, aligned with Andy’s Focus Question. The teacher explained the
objective, reminded students of the day’s Focus Question, and emphasized the expectations for completing the activity. The following quotes capture the lesson set up:

“If you have a question that has been given to your group, please provide this also on the group sheet.”

“When you are finished with your summarization, your group will hang your sheet in the designated area.”

“Students will do a walkabout to read other groups summarization.”

**Conducting the lesson.** Once the section has been read by all members of the group, the group needs to decide what were the most important parts of that subsection. Provide these parts on the group sheet.”

**Assessing the lesson.** “Did we decide what we are going to put down?”

“So why would that be important?”

“What did we come up with?”

“Suppose you own some land and are forced to move—that would be a problem, right?”

“Think about those emotions.”

**Bobby’s lesson objectives.** Bobby stated that the lesson objective was to “Demonstrate mastery knowledge from the past 4 weeks. Another objective was the ability to collaborate with others to come to a final answer.”

**Lesson set-up.** Bobby’s group quiz entailed multiple types of question stems including knowing a definition to solving problems with missing data. The teams worked together to solve each problem that was displayed on the whiteboard. The teacher reviewed why an answer was either right or wrong. Answers that were partially correct
were given partial credit: “The other thing, units . . . you guys had ten but you are missing your units, ok. So I gave you guys 1 point. That’s why I made it a 2 point question because you have to have the answer and the correct units.” Bobby was flexible with the time allowed for answering each question and, in some instances, could be heard asking the class, “Do you need more time?”

Conducting the lesson. Bobby provided an ongoing stream of focused prompts to keep the students focused on the objective of the lesson, guide their process of doing the lesson, and provide feedback on how they were doing the lesson:

“Come on think about what it is saying”

“The other thing – units. You guys had ten but you are missing your units, ok. So I gave you guys 1 point. That’s why I made it a 2 point question because you have to have the answer and the correct units.”

“So those are some of the things we talked about but never is .1 and 10 the same number, all right?”

“You are missing the g [grams].”

“Team 2, it is in everything but I don’t think that’s a good definition, I am not going to say you are wrong—totally, but it’s not what I was asking for.”

Assessing the lesson. Bobby used a clipboard with a checklist of the group and the individual group members’ names for recording the scores that were derived by group consensus.

Conny’s lesson objectives.

Setting up the lesson. Assigning a different claim to each group and having the groups “present your claim, your evidence and a little bit of explanation for why you
chose certain pieces of evidence” reflected the teacher’s use of instructional strategies designed to address the lesson’s objective. The group’s cooperative activity as described by Conny was, “Each group is required to locate three quotes or three pieces of evidence to support their claim.” The teacher read aloud the claims for each group as they were recorded on the board.

**Conducting the lesson.** Conny provided additional clues about the lesson objective as it proceeded, with comments like:

“As you know we have been working on finding evidence to use in our essays, right, Smith?”

“The reason why I like to start with a summary is because it keeps you focused on what the novel is about. So, you will have to come to a consensus about what Nightjohn is about, ok?”

“Five sentence summary. That should be easy, right?”

“All right, you should be working on the summary first and don’t forget to write the claim down on that line right there.”

“And look at the last sentence. The last sentences stated, ‘Make sure each member agrees with the evidence before presentations.’”

“I think he is more telling in that statement about why he is doing it, right?”

From these comments, Conny’s objective was to have students utilize a variety of strategies previously taught (summarization, isolating “telling statements,” etc.) as a basis for providing evidence in written and verbal discourse.

**Assessing the lesson.** While Conny provided explicit instructions regarding how the students would present their argument evidence, there was no rubric or other device
used to evaluate the quality of the evidence to support each group’s claim; however, students were told to include an explanation of why they selected the evidence and how it supports the claim.

“I have given every group the order in which they will present.”

“Everybody comes up with the group, but only the presenter is the one who talks.”

“You will present your claim, your evidence, and a little bit of explanation for why you chose certain pieces of evidence, ok?

**Danny’s lesson objective.** Danny was very direct and stated the objective of the lesson in very straightforward terms: “The objective was to solve equations and realize that some equations had: one solution, multiple solutions, or no solution.”

**Setting up the lesson.** Danny reminded the class, “Ladies, over the last couple of weeks we have been working on equations.” Having spent the previous “couple of weeks,” solving equations, Danny challenged the students to solve the equations and “try to determine whether the answers to those equations are always true, never true, or sometimes true.”

“Can someone give an example of an equation that would never be true?”

“What would be an equation that would always be true?”

“Are there some equations that would sometimes be true?

Danny reminded the students of the task: “You want to solve these equations by determining if it is sometimes true, always true, or never true.”
Conducting the lesson. Danny clarified the learning objective by starting out soliciting examples of each of the three categories: “sometimes true, always true, and never true.” Some examples of such prompts include:

“Today, we are going to solve equations, but we are also going to try to determine whether the answer to those equations is always true, sometimes true, or never true, ok?”

“Can someone give an example of an equation that would never be true?”

“What would be an equation that would always be true?”

“Are there some equations that would sometimes be true?”

He also accessed prior learning through such statements as, “Ladies, over the last couple of weeks we have been working on equations.” These two procedures preceded his instructions for the cooperative learning activity:

Now, I am going to give each group a copy of the equations, and you are going to have to solve them first. And then I am going to give you a pair of scissors so that you can cut them apart. And then you are going to post these on a sheet of paper. You are going to have three categories.

Assessing the lesson. Danny reminded students of the steps to follow, gave helpful suggestions, then monitored the groups as they carried out the operations:

“Solve them first!”

“You might want to solve one column, and your team-mate solve one column and then compare your answers.”

“Would that be a good strategy?”

“This assignment will be a group grade.”
The Infusion and Assessment of Literacy Skills

Table 11 depicts specific literacy skills used by each teacher in conducting their cooperative learning lesson. The frequency of use is not indicated as the focus was on which literacy skills are used when teachers implement cooperative learning lessons.

Research Question 3

*How does the teacher infuse and assess literacy skills within the cooperative learning lesson?*

How Literacy Skills Were Infused in the Lessons

A myriad of literacy skills were apparent in each of the teachers’ delivery of the cooperative learning lesson. One strategy in particular, activating prior knowledge, was used by all of the participants in the beginning stage of conducting the lesson. Research shows that activating prior knowledge leads to student motivation (Jackson & Lambert, 2010). The students in Bobby’s classroom and in Danny’s classroom were engaged in activities that required them to manipulate and synthesize data. Andy’s and Conny’s lessons focused more on reinforcing content area concepts. The focus was on getting students to recall details, to read the specified content and articulate their ideas and opinions about it, and to respond to specific questions about the content through summarization. Questions asked by the students were procedural in nature and usually involved a student needing clarification of the instructions. Table 11 records the distribution of literacy skills observed during the delivery of each teacher’s cooperative learning lesson. Twelve of the 17 literacy skills (71%) were used by all of the teachers.
Table 11

_Distribution of Literacy Skills Observed Across Teacher Participants_

<table>
<thead>
<tr>
<th>Specific Literacy Skills Infused in the Lesson</th>
<th>Andy</th>
<th>Bobby</th>
<th>Conny</th>
<th>Danny</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Finding the main idea</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2. Comprehension</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>3. Recognizing understanding content vocabulary</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4. Discussion</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5. Oral communication</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>6. Finding evidence</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>7. Stating claims</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>8. Making an evaluation</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>9. Summary writing</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>10. Using graphic organizers</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>11. Activating prior knowledge</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>12. Problem solving</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>13. Listening</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>14. Explaining</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>15. Reading</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>16. Clarifying</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>17. Writing</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Andy, when asked a question by a student, would respond by summarizing the event, give an example, and encourage the students to think about the big picture. In an exchange with the researcher, Andy shared,

When the students are asking me questions, I am not trying to spoon feed them the answers. I am trying to think of ways to get around just straight out telling them, and getting them to think a little bit about what it is we are talking about and getting them to relate to some stuff that they may be familiar with.

Andy’s cooperative groups were charged with putting their heads together to solve, discuss, and agree on a group answer. Writing was evident in that once the group agreed on an answer, the recorder wrote the answer on the dry erase board.

Through reading, written summarization, and group oral presentations, the students in Conny’s room worked toward completing the assigned task. After the instructions were given and clarified with each group, Conny announced, “Right now we have a little less than 20 minutes. Time keeper, at 8:45 your assignment within your group should be complete. Let me write that on the board too.”

**How Literacy Skills Were Assessed in the Lesson**

Andy: Completed group worksheet (not observed)

Bobby: Heads-together team quiz (no specific assessment of literacy skills)

Conny: Written group summarization and oral group presentation

Danny: Problem solving (no specific assessment of literacy skills)

While all four teachers incorporated and created tasks that draw upon a variety of literacy skills, only one, Conny, actually included the application of literacy skills in the assessment process for the lesson through the use of group summarization culminating in a group presentation of their findings.
The Infusion and Assessment of Thinking Skills

Research Question 4

How does the teacher infuse and assess thinking skills within a cooperative learning lesson?

To fully describe how each teacher infused and assessed thinking skills in the cooperative learning lesson, Bloom’s Taxonomy was selected as the framework to describe the thinking skills level of use the students were asked to perform. Bloom’s was selected since it is a staple in many teachers’ classrooms through supplemental materials as well as through workshops. Beginning with Level I, Knowledge; Level II, Comprehension; Level III, Application; Level IV, Analysis; Level V, Synthesis; and Level VI, Evaluation, the thinking required at each level becomes increasingly more advanced. The teacher’s role in creating learning opportunities that lead students to think critically must be to create challenging tasks that the students can navigate through and feel successful, rather than to become frustrated or experience defeat. The teachers’ critical thinking instructional levels reflective of Bloom’s Taxonomy are shown in Tables 12 through 15.

The students in Andy’s jigsaw structure (Table 12) worked together to read and interpret preselected sections from the textbook. Content reading is a major part of this social studies class, requiring the students to read purposely and actively to reach a consensus of the summarization of the key ideas in this particular cooperative learning activity. Fifty-three percent (14 prompts of 26) of Andy’s instruction in critical thinking occurred at Levels III through VI of Bloom’s Taxonomy. Thirty-five percent (5 prompts of the 14) of the 53% required students to synthesize and evaluate to complete the
assignment. Considering the amount of reading that was necessary to complete the task, students relied heavily on the teacher for added instruction.

Table 12

*Andy: At What Level of Bloom’s Taxonomy of Learning and Thinking Processes Are Students Asked to Perform While Doing Cooperative Learning Activities?*

<table>
<thead>
<tr>
<th>Bloom’s Level of Taxonomy</th>
<th>Number of Prompts by Andy</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Knowledge</td>
<td>7</td>
</tr>
<tr>
<td>II. Comprehension</td>
<td>5</td>
</tr>
<tr>
<td>III. Application</td>
<td>5</td>
</tr>
<tr>
<td>IV. Analysis</td>
<td>4</td>
</tr>
<tr>
<td>V. Synthesis</td>
<td>3</td>
</tr>
<tr>
<td>VI. Evaluation</td>
<td>2</td>
</tr>
</tbody>
</table>

Sixty-three percent (21 of 33) of the quiz questions engaged students in critical thinking at Level III through Level VI of Bloom’s in Bobby’s group quiz structure (Table 13). Sixty-six percent (14 of the 21) of the critical thinking at these levels represented the higher levels of synthesis and evaluation.

Sixty percent (or 15 of 25 prompts) of Conny’s instruction (Table 14) focused on application through evaluation or Bloom’s Levels III through VI. Of that 60%, 40% (or 6 out of 15 prompts) were at the higher levels of synthesis and evaluation.
Table 13

Bobby: At What Level of Bloom’s Taxonomy of Learning and Thinking Processes Are Students Asked to Perform While Doing Cooperative Learning Activities?

<table>
<thead>
<tr>
<th>Bloom’s Level of Taxonomy</th>
<th>Number of Prompts by Bobby</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Knowledge</td>
<td>8</td>
</tr>
<tr>
<td>II. Comprehension</td>
<td>4</td>
</tr>
<tr>
<td>III. Application</td>
<td>4</td>
</tr>
<tr>
<td>IV. Analysis</td>
<td>3</td>
</tr>
<tr>
<td>V. Synthesis</td>
<td>7</td>
</tr>
<tr>
<td>VI. Evaluation</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 14

Conny: At What Level of Bloom’s Taxonomy of Learning and Thinking Processes Are Students Asked to Perform While Doing Cooperative Learning Activities?

<table>
<thead>
<tr>
<th>Bloom’s Level of Taxonomy</th>
<th>Number of Prompts by Conny</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Knowledge</td>
<td>3</td>
</tr>
<tr>
<td>II. Comprehension</td>
<td>7</td>
</tr>
<tr>
<td>III. Application</td>
<td>4</td>
</tr>
<tr>
<td>IV. Analysis</td>
<td>5</td>
</tr>
<tr>
<td>V. Synthesis</td>
<td>2</td>
</tr>
<tr>
<td>VI. Evaluation</td>
<td>4</td>
</tr>
</tbody>
</table>

Seventy-three percent (or 22 out of 30 problems) of Danny’s linear problem solving cooperative learning problem tasks involved the students in critical thinking skills
at Bloom’s Levels III through VI (Table 15). Sixty-eight percent (or 15 of the 22) instructional problems required students to work at the higher levels of synthesis and evaluation.

**Table 15**

*Danny: At What Level of Bloom’s Taxonomy of Learning and Thinking Processes Are Students Asked to Perform While Doing Cooperative Learning Activities?*

<table>
<thead>
<tr>
<th>Bloom’s Level of Taxonomy</th>
<th>Number of Prompts by Danny</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Knowledge</td>
<td>4</td>
</tr>
<tr>
<td>II. Comprehension</td>
<td>4</td>
</tr>
<tr>
<td>III. Application</td>
<td>4</td>
</tr>
<tr>
<td>IV. Analysis</td>
<td>3</td>
</tr>
<tr>
<td>V. Synthesis</td>
<td>8</td>
</tr>
<tr>
<td>VI. Evaluation</td>
<td>7</td>
</tr>
</tbody>
</table>

**The Infusion and Assessment of Social Skills**

The school is committed to the prevention of problem behavior and utilizes a school wide behavior intervention program known as PBIS or Positive Behavior Intervention Support. The PBIS program has been in use for approximately eight years with a heavy emphasis during the first semester in appropriate school behavior and ongoing activities throughout the remainder of the year that are designed to support positive student behavior both in and out of the classroom. Tables 16 through 19 summarize the infusion of social skills in the teachers’ cooperative learning lessons.
**Research Question 5**

*How does the teacher infuse and assess social skills and/or personal responsibility skills within the cooperative learning lesson?*

Table 16

*Andy’s Infusion of Social or Personal Responsibility Skills*

<table>
<thead>
<tr>
<th>Specific Social Skills Infused in the Lesson</th>
<th>Andy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group discussion</td>
<td>X</td>
</tr>
<tr>
<td>Group decision making</td>
<td>X</td>
</tr>
<tr>
<td>Collaboratively create a group product</td>
<td>X</td>
</tr>
<tr>
<td>Getting along with others</td>
<td>X</td>
</tr>
<tr>
<td>Following directions</td>
<td>X</td>
</tr>
<tr>
<td>Following rules and procedures</td>
<td>X</td>
</tr>
<tr>
<td>Practicing honesty</td>
<td></td>
</tr>
<tr>
<td>Helping others</td>
<td>X</td>
</tr>
<tr>
<td>Encouraging others</td>
<td></td>
</tr>
<tr>
<td>Working together</td>
<td>X</td>
</tr>
<tr>
<td>Respecting time constraints</td>
<td></td>
</tr>
<tr>
<td>Displaying leadership skills</td>
<td></td>
</tr>
<tr>
<td>Team spirit</td>
<td></td>
</tr>
</tbody>
</table>

When asked, “What social skills do you try to develop in cooperative groups?”

Andy responded, “Be a good listener, when one person is talking all others are listening.”
To help do this, I start the school year off using cooperative groups.” A multitude of social skills were evident in Andy’s instruction of the cooperative task as shown above. The groups were also expected to reach a group consensus as Andy announces to the class, “Once the section has been read by all members of the group, the group needs to decide what were the most important parts of that subsection. Provide these parts on the group sheet.” Andy demonstrated a commitment to maintaining positive student interactions through verbal reminders such as “This has nothing to do with what I am asking you to do,” and “Listen, we have too much brain power in this group to be unproductive.”

Jigsaw, Andy’s chosen method of cooperative group structure, has been recommended by some as supportive of critical thinking and comprehension skills. One feature of jigsaw involves the students teaching the content to their peers. This method allows the student teachers to become “experts” on a particular portion of the text. Unfortunately, the students in the observed lesson needed much redirection and re-prompting to focus on the task, clarify the process, and follow the process. This may suggest that, while Andy pays close attention to social and personal responsibility skills, he has yet to establish routines for this group of students that support and maintain those skills.

The nature of the cooperative task, a group quiz, contributed to the various kinds and levels of social skills observed in Bobby’s class. As would be expected, the tempo was relaxed and casual. The students enjoyed the competitive structure as evidenced through the entire class showing excitement when all groups got the right answer to a question. The teacher encouraged the class to “Give yourselves a hand.” During post
conference the teacher shared that “When they put their head together trying to figure out that answer, usually, unless they are arguing with each other, they are pretty quiet. Then they get louder once the points are given out.” There is a sense that classroom procedures were well established and are used by the students without prompting. One example of this occurred when the phone rang during the competition and a student immediately proceeded to answer the phone, allowing the competition to continue.

Table 17

*Bobby’s Infusion of Social or Personal Responsibility Skills*

<table>
<thead>
<tr>
<th>Specific Social Skills Infused in the Lesson</th>
<th>Bobby</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group discussion</td>
<td>X</td>
</tr>
<tr>
<td>Group decision making</td>
<td>X</td>
</tr>
<tr>
<td>Collaboratively create a group product</td>
<td></td>
</tr>
<tr>
<td>Getting along with others</td>
<td>X</td>
</tr>
<tr>
<td>Following directions</td>
<td>X</td>
</tr>
<tr>
<td>Following rules and procedures</td>
<td>X</td>
</tr>
<tr>
<td>Practicing honesty</td>
<td>X</td>
</tr>
<tr>
<td>Helping others</td>
<td>X</td>
</tr>
<tr>
<td>Encouraging others</td>
<td>X</td>
</tr>
<tr>
<td>Working together</td>
<td>X</td>
</tr>
<tr>
<td>Respecting time constraints</td>
<td>X</td>
</tr>
<tr>
<td>Displaying leadership skills</td>
<td>X</td>
</tr>
<tr>
<td>Team spirit</td>
<td>X</td>
</tr>
</tbody>
</table>
As to the question of, “What social skills do you try to develop in cooperative groups? Bobby’s response was,

Taking social cues off of people, being able to listen to others’ ideas, and being able to work together. And that’s what I was thinking, taking the strengths from others, knowing when to just listen, when to lead, taking leadership, and not being afraid to lead.

Evidence of classroom management could be heard in expressions such as, “I am about to subtract a point over here” and “waiting on silence.”

Table 18

*Conny’s Infusion of Social or Personal Responsibility Skills*

<table>
<thead>
<tr>
<th>Specific Social Skills Infused in the Lesson</th>
<th>Conny</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group discussion</td>
<td>X</td>
</tr>
<tr>
<td>Group decision making</td>
<td>X</td>
</tr>
<tr>
<td>Collaboratively create a group product</td>
<td></td>
</tr>
<tr>
<td>Getting along with others</td>
<td>X</td>
</tr>
<tr>
<td>Following directions</td>
<td>X</td>
</tr>
<tr>
<td>Following rules and procedures</td>
<td>X</td>
</tr>
<tr>
<td>Practicing honesty</td>
<td></td>
</tr>
<tr>
<td>Helping others</td>
<td>X</td>
</tr>
<tr>
<td>Encouraging others</td>
<td>X</td>
</tr>
<tr>
<td>Working together</td>
<td>X</td>
</tr>
<tr>
<td>Respecting time constraints</td>
<td>X</td>
</tr>
<tr>
<td>Displaying leadership skills</td>
<td>X</td>
</tr>
<tr>
<td>Team spirit</td>
<td>X</td>
</tr>
</tbody>
</table>
Conny engaged students in reading text relative to a clear purpose of providing evidence to support their pre-assigned claim. To increase the likelihood of every group completing the assigned task, Conny relied on time keepers to both monitor the time and to keep their group members on task. Some of the time keepers seemed somewhat reluctant to “check” their fellow classmates, which led the teacher to remind them of the importance of their role: “I need to remind you to keep everybody on task, you should not be talking about anything other than finding evidence.” Other evidence of the important role that the time keeper played is reflected in the following comments:

You are the time keeper? Ok, make sure they stay on task then, all right? If you hear ____ talking about anything other than Nightjohn, you have to remind her to stay on task, all right? ____ I want you to notice that (meaning unfocused behavior) right away. I don’t want to say anything. I want you to notice what she is doing, then you just keep her right on task, ok? All right?

Afterwards, the groups maintained “indoor voices” as they proceeded to work on completing the cooperative task. The groups appeared to have stayed focused as every group completed their work and presented it orally to the class, followed by Conny’s suggesting that, “Ok, everybody, give yourselves a round of applause.” An unexpected occurrence during the groups’ reporting out led to one member of the group being asked by the teacher to read aloud the last sentence on their work sheet. Protocol during group presentation is that all members of the group are expected to stand together during the presentation; however, only the presenter speaks. The dissenting student was seen shaking her head as the presenter for the group read the claim and their evidence. The student read the last statement on the worksheet, “Make sure each member agrees with the evidence before presentations.” The student smiled and appeared to support her group’s claims. During our post-conference, Conny explained that the student changed
their mind about dissenting at that point after he reminded them of the final statement written on the work sheet. In other words, the student accepted that she had missed the appropriate time and situation for voicing dissent.

Choosing to forego the usual routine of having the students respond to a Do Now class warm-up, Danny started the lesson as soon as the second bell sounded. This additional time allowed more time for activating the students’ prior knowledge, which Danny did using a scaffold instruction approach to provide students with the skills to analyze and synthesize information in a new way. Activating prior knowledge is a powerful support strategy that can be both motivating and provide a frame of reference for students (Jackson & Lambert, 2010). In doing so, students benefited from a review of previous concepts taught that would be necessary to complete the cooperative problem solving task of sorting linear equations in categories of sometimes true, always true, or never true.

Prior to my observation, the class had spent “a couple of weeks solving equations.” Students readily joined in the review and received immediate feedback from the teacher: “Ok, we could solve that, and that would be true, right? Ok.” Danny’s disciplinary style was to redirect the students with a reminder of the task, “You want to solve these equations by determining if it is sometimes true, always true, or never true.” This appeared to work as Danny moved to the next group checking for students’ understanding of the assignment and their progress. The question, “What social skills do you try to develop in cooperative groups?” yielded a response of “Kind, respectful.”
Table 19

*Danny’s Infusion of Social or Personal Responsibility Skills*

<table>
<thead>
<tr>
<th>Specific Social Skills Infused in the Lesson</th>
<th>Danny</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group discussion</td>
<td>X</td>
</tr>
<tr>
<td>Group decision making</td>
<td>X</td>
</tr>
<tr>
<td>Collaboratively create a group product</td>
<td>X</td>
</tr>
<tr>
<td>Getting along with others</td>
<td>X</td>
</tr>
<tr>
<td>Following directions</td>
<td>X</td>
</tr>
<tr>
<td>Following rules and procedures</td>
<td>X</td>
</tr>
<tr>
<td>Practicing honesty</td>
<td></td>
</tr>
<tr>
<td>Helping others</td>
<td>X</td>
</tr>
<tr>
<td>Encouraging others</td>
<td>X</td>
</tr>
<tr>
<td>Working together</td>
<td>X</td>
</tr>
<tr>
<td>Respecting time constraints</td>
<td></td>
</tr>
<tr>
<td>Displaying leadership skills</td>
<td></td>
</tr>
<tr>
<td>Team spirit</td>
<td>X</td>
</tr>
</tbody>
</table>

Contributing to a cooperative effort, the teachers utilized close proximity as a strategy to facilitate effective classroom management designed to keep the students on-task. Teachers checked for understanding, reminded students of expectations, and encouraged students to work together. The following summarizes the teachers’ reflections of their cooperative learning lesson.
Phase III: Post Conference: Reflective Assessment

Research Question 6

*How does the teacher reflect and interpret what occurred during the delivery of a cooperative learning lesson?*

The teachers’ reflective thinking on the *cooperative learning* part of the lesson focused on how they attempted to keep the students engaged and working cooperatively. Table 20 presents a few highlights of each teacher’s reflective assessment statements revealing the issues that the teachers addressed in their post-lesson reflections.

Table 20

*Teachers’ Reflective Assessment Statements*

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Statement</th>
</tr>
</thead>
</table>
| Andy    | “Some girls set in their actual assigned seats, and some, because of being first hour and being kind of tardy a little bit, just came in and slide into a group which is kind of outside of their normal regular assigned seats.”  
“Normally, when we do group work there are roles that are assigned, from presenting the information to reporting out, but because we were not going to do an out loud presentation of the information they were going to finalize, it was going to be a walk about, I didn’t think that specific roles were needed for that part, so what I did was I wanted to make sure that everybody in the group read the subsection, so that everybody at least had some form of information or some knowledge about what was going on, what they thought was important, they would transfer information to their group sheets for the walk about.” |
| Bobby   | “You go to different groups and you help them with what they need.”  
“I try to give everybody a chance. A couple of times when I said rotate, I had noticed that one group was not rotating.”  
“When they put their heads together trying to figure out that answer, usually, unless they are arguing with each other, they are pretty quiet. Then they get louder once the points are given.”  
“You may not win, but you still need to get as many points as possible. Thank goodness, I noticed that with todays’ teams, they were all kind of neck and neck. So they stayed motivated.” |
Table 20—Continued

<table>
<thead>
<tr>
<th>Teacher (cont.)</th>
<th>Statement</th>
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</thead>
</table>
| Bobby           | "Unfortunately, you will always have one or two who are going to look at it as, “This is an easy day, I am going to sit back and ride some coat tails and get an easy grade.”

"That’s why, as a teacher, especially with the cooperative learning, you have to walk around. You have to make sure students are doing what they need to do because those students that want to slip through the cracks will try to find a way to do so.”

Conny         | "I thought that by counting off it allowed for a good mixture of students that would not actually socialize but would do their work. Because that’s what my goal was when I counted off. I wanted them to not be comfortable by choosing their friends or something like that. So, it just worked out pretty well. Like sometimes I’ll have a group that may have 3 or more struggling students in one group, then I will start to move people around. But I didn’t see that in this group, so I just left it the way it was.”

"That was really a good mix in each group. I couldn’t have made it better myself.”

"So what I was doing here, I was trying to go to each group and give them individual directions as to what I wanted them to do. Sometimes it just be hard for them to start. Nobody wants to be the person in charge, or everybody wants to be the person in charge.”

Danny         | Roles were not assigned as Danny explained, “because of the type of group activity.”

The activity required the teams to solve linear equations.

“Some of the groups divided up the columns and compared answers. The group of five students had two ESL students that worked well with the other stronger students in the group.”

“And I stress to them that they need to pay attention because you need to know A, B, C, in order to get this.”

“And sometimes we need someone to take the notes, to record, to report out.”

“Yes, when they peel the paper off to move it to a different column, or as they are working through the problems and comparing their answers, then they are analyzing and looking deeper.”

“Walking around, and keeping them on task. If I hear something off math talk, I’ll come by and say something like, ‘Oh, I don’t see anything here about that performer in these equations,’ and just walk on by.”

“They know I have heard it and they know that it’s a group grade, everyone is going to have the same grade.”
As illustrated by the quotes in Table 20, all of the participants’ narratives spoke of role assignment to some degree and on keeping the students on task. Roles were assigned if the teacher deemed it appropriate for the particular cooperative goal structure chosen. Maintaining close proximity by walking around and visiting each group regularly was the strategy of choice for all of the participants for helping to keep the students on task. Participants utilized the group visits to check on the status and progress of the groups as well as check on the groups’ behavior. Those not focused were reminded of the task and the remaining time to complete the task by some of the participants.

Teacher reflections of the content knowledge and skills part of the lesson include a review of the objectives and how manifestation of the objectives were met, specifically, how the teachers linked the objectives to the cooperative task. Table 21 depicts the objectives of each participant and the teachers’ reflections on the lesson relative to the objective.

Table 21

Teacher Reflection on the Lesson Objectives

<table>
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<tr>
<th>Teacher</th>
<th>Reflection</th>
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<tbody>
<tr>
<td>Andy</td>
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</tbody>
</table>
Objective: “When you leave class today you will be able to identify many of the challenges that Jackson faced trying to remove the Native Americans through a jigsaw and a walkabout.”

Sample Supporting Quotes: “I wanted to make sure that everybody in the group read the subsection, so that everybody at least had some form of information or some knowledge about what was going on, what they thought was important.”

“They would transfer the information to their group sheets for the walkabout.” |
Table 21—Continued

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Reflection</th>
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</table>
| Bobby   | *Objective:*  
|         | “Demonstrate mastery knowledge from the past four weeks. Another objective was the ability to collaborate with others to come to a final answer.”  
|         | *Sample Supporting Quotes:*  
|         | “Our bell ringers are always structured on information that we have been working on.”  
|         | “After this quiz, they actually had a small quiz type assessment which was their individual grade.”  
|         | “I like doing the games and I count it as a quiz grade, but I still need to see where everyone is at.”  
|         | “Can you do a density problem? After all of this, after going over density, doing probably 20 problems in class, having homework, taking this group kind of quiz, now, the rubber is hitting the road. Now, can you sit down and take ten minutes and do five density problems?”  
|         | “In a typical setting, when they are not playing a game, if you will, because this was structured more as a game, I actually make sure I call on everybody. I always look for the one I haven’t called on today and even if it’s a student who I know may not be getting it, I will give him or her some kind of question that I know they know, no matter what. It could be something just discussed. So, you have to find ways to include them.”  
| Conny   | *Objective:*  
|         | “Directions: Each group is required to locate three quotes, three pieces of evidence to support their claim.”  
|         | *Sample Supporting Quotes:*  
|         | “I felt that my summary would focus them on the task at hand and it would allow them to remember what the book was about before they started looking for evidence, and then it would focus the group on the assignment so that when they got to looking for evidence, they would be all working together, versus asking them to look at the evidence first, and then it takes a little more time for the to even get to working together cohesively or in harmony because they are not focused. So I wanted to kind of focus them.”  
|         | “It is a challenge for the students to formulate an opinion. The students created the claims themselves, as a class. They had to choose one of the claims to write an essay about. So now that you have a claim, which is your opinion at this point, if you can find evidence that supports it, then that makes it a valid statement.”  
|         | “In any writing assignment in ELA, we ask for evidence. We don’t use topic sentences, or thesis statements, we use claims. We start with a claim and then evidence, you can write the essay, you can formulate the paragraphs around the evidence. But if you don’t have that, you will always struggle trying to write it. You will be forcing yourself to make up stuff to meet the criteria of a five sentence paragraph.”  

The teacher reflections in Table 21 reveal that each of the teachers had both primary content based objectives and secondary literacy, thinking, and or social interaction/personal responsibility objectives for the lesson. While the teachers each used some form of group rating and feedback process, they all included individual responsibilities and acknowledged the importance of assessing student learning in multiple ways. Each of the teachers chose to shape the cooperative learning lessons around concepts, competencies, and skills already taught; however, there were noticeable differences in how much the teachers had established and taught specific cooperative learning routines. Additionally, the teachers did not demonstrate the application of more specific thinking strategies, e.g., concept maps, compare/contrast, etc. The exception was the use of summarization. The same was true for the literacy skills infused into the lessons—they were generalized and not targeted at specific comprehension or other literacy strategies like the interpretation of graphs and tables, looking for inter-text clues, etc. All of the teachers’ cooperative learning lessons were based on the Learning Cycle initiative, which includes a depth of knowledge (DOK) focus. The teachers described the

<table>
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<tr>
<th>Teacher</th>
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<tbody>
<tr>
<td>Danny</td>
<td><strong>Objective:</strong></td>
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<td></td>
<td>“The objective was to solve equations and realize that some equations had: one solution, multiple solutions, or no solution.”</td>
</tr>
<tr>
<td></td>
<td><strong>Sample Supporting Quotes:</strong></td>
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<td></td>
<td>“I think they know how to solve the equations and because now they need to sort the out by types of equations, I think some of them may have been a little confused, maybe.”</td>
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<td></td>
<td>“So we have been dealing with equations that are sometimes true because X is equal to a certain amount, or Z is equal to a certain amount. And so we talked about equations that would never be true and equations that no matter what you did, would always be true.”</td>
</tr>
</tbody>
</table>
four-level DOK chart as being similar to Bloom’s Taxonomy and maintained that the curriculum focus was on getting the students to the higher levels of three and four. This school-wide focus on the Learning Cycle initiative may account for the use of non-specific literacy skills.

Tables 22 and 23 illustrate examples of how the teachers reflected on their infusion of literacy and thinking skills, respectively.

Table 22

*Teacher Reflections on the Literacy Skills Part of the Lesson*

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Reflection</th>
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<tbody>
<tr>
<td>Andy</td>
<td>“Obviously, we had some subsections to read and try to pull the most important parts out of the subsection, which is obviously summarization.”</td>
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<td>“We focused a little bit on chunking with providing them with only one small subsection to read.”</td>
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<td></td>
<td>“I guess looking in hindsight, as we move to day two of this, they get the opportunity to see how their smaller part was a part of the whole, or they have a piece underneath the umbrella of what the entire them was, so as they began to do a walk-about, they were able to take the information they learned from their subsection and start to apply it to where they wove throughout the other groups and see, “Now this makes sense a little bit,” of what was happening in these other groups because I didn’t have this information because they had not read that part.”</td>
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<td>“Normally, we always do some kind of writing piece along with each chapter that we are completing.”</td>
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<td></td>
<td>“The social studies department had identified some strategies we wanted to use with fidelity on a regular basis and summarization was one of those, as we noticed that some of our kids were having a hard time in being able summarize what they had read, not just in social studies but also in ELA. So in trying to cooperate with the other disciplines, we wanted to work on summarization and so some of this lesson worked on summarization.”</td>
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Table 22—Continued

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Reflection</th>
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<tbody>
<tr>
<td><strong>Bobby</strong></td>
<td>“The expectation is that they write a response to the bell ringer, we go over it immediately. That gives them lots of opportunities to get feedback on what they know.”&lt;br&gt;“We have been working on “chunking” assignments.”&lt;br&gt;“I mean the whole school. Really the school was told, and this was through the guidance of the ELA department, we were basically told, ‘You know what, you might be giving them too much to do at one time,’ and that was like an epiphany moment because it’s like you, you know what, you are right, we need to just take small amounts and go deep instead of having all that, ‘We got to get chapter 1 done.’”&lt;br&gt;“I have it broken up so that the students will have about fifteen minutes of individual time to read a small chunk of information and take notes (they are still sitting in a group at this time), then when I announce it is group time, they are to turn with their partners in their groups at which time they will have a focus question and they will all need to come together with the best answer to get on their paper. They will have another twenty five minutes or so, from what they did individually, to do this.”</td>
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<tr>
<td><strong>Conny</strong></td>
<td>Yes, writing a 5 sentence summary is standard in ELA at 8th grade.”&lt;br&gt;“I felt that the summary would focus the on the task at hand, and it would allow them to remember what the book was about before they started looking for evidence . . . So I wanted to kind of focus them.”&lt;br&gt;“Finding evidence, which is what we did, they have been doing that for the past 2 weeks. Prior to that, we read Nightjohn for the previous weeks or maybe even 4 weeks.”&lt;br&gt;“They are writing an essay on the book.”&lt;br&gt;“We don’t have a textbook. Everything that I teach they have to write in their writer’s notebook. I have to make examples, samples, and create graphic organizers. I have to have them to write notes. We do not have not one book that they can just open it up and start reading about claims, or theories. I have to actually explain it.”</td>
</tr>
<tr>
<td><strong>Danny</strong></td>
<td>“Students were pleased with learning how to ‘plug and chug.’ They finally understood how to try various values for X.”&lt;br&gt;“Plug and chug is to take a number, plug it in and do the math.”&lt;br&gt;“Some of the students, even today, when we were reworking some of them realized that now it’s not that difficult if you actually get in the mindset and actually get into it.”&lt;br&gt;“There is nothing better than hearing people argue about math concepts.”</td>
</tr>
</tbody>
</table>
Danny (cont.)

“I think their comprehension skills increase after cooperative group work. When they are able to see that other people are able to verbalize what they have done or even in some of the groups, the criticism of one from another, where they are kind of saying no, you are not right because . . . and they are able to back that up with some support.”

“I don’t really assess the students reading comprehension. I am more concerned with the math concepts than the reading.”

“And we do kind of do, like the stopping points. Vocabulary is very big as far as: less than, greater than, the difference of, equally distributed, so all of those would be math concepts and it is important for them to know how these words relate to multiply, add, subtract, and divide.”

“If we read over a problem like . . . ‘Michael has 13 baseball cards. His cousin has 4 more than twice as many as that.’ Then we kind of like, ‘Ok, let’s stop. What do we know? We know how many cards he has. We know his cousin has twice as many . . . and what don’t we know? When don’t know something we use a variable.’ Once we are able to use words and create an equation, then we can talk equations.”

“And sometimes, just having them verbalize what it is you are looking for gets them focused in the right direction.”

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Reflection</th>
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</table>
| Danny (cont.) | “I think their comprehension skills increase after cooperative group work. When they are able to see that other people are able to verbalize what they have done or even in some of the groups, the criticism of one from another, where they are kind of saying no, you are not right because . . . and they are able to back that up with some support.”

“I don’t really assess the students reading comprehension. I am more concerned with the math concepts than the reading.”

“And we do kind of do, like the stopping points. Vocabulary is very big as far as: less than, greater than, the difference of, equally distributed, so all of those would be math concepts and it is important for them to know how these words relate to multiply, add, subtract, and divide.”

“If we read over a problem like . . . ‘Michael has 13 baseball cards. His cousin has 4 more than twice as many as that.’ Then we kind of like, ‘Ok, let’s stop. What do we know? We know how many cards he has. We know his cousin has twice as many . . . and what don’t we know? When don’t know something we use a variable.’ Once we are able to use words and create an equation, then we can talk equations.”

“And sometimes, just having them verbalize what it is you are looking for gets them focused in the right direction.” |

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Reflection</th>
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</table>
| Andy | “So in trying to cooperate with the other disciplines, we wanted to work on summarization and so some of this lesson worked on summarization.”

“When the students are asking me questions, I am not trying to spoon feed them the answers, I am trying to think of ways to get around just straight out telling them and getting them to think a little bit about what it is we are talking about and getting them to relate to some stuff that they may be familiar with.”

“Then what they were supposed to do was to kind of do a turn-and-talk and figure out what they thought was important in the subsection that they read. Once a consensus had been made on what they thought was important, they would transfer this information to their group sheets for the walk-about.”

“They talked a little bit.” |
### Table 23—Continued

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Reflection</th>
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</table>
| Bobby   | “Well, this was actually a unit that we were on for about 3 weeks. Almost a month, because we started it right after the break.”  
“I think the most impressive thing to me is it if always interesting to hear the questions they are asking each other. There were a couple of questions that were geared towards inferring.”  
“There hasn’t been a discussion saying, ‘This is what you should focus on,’ I think the discussion has been look, whatever subject you are teaching, you do have to find a way to include that critical thinking piece.”  
“Right now we are working on depth of knowledge (DOK).”  
“The goal is to get the students away from the DOK Level 1 and Level 2 and into the deeper Level 3 and Level 4 types of questions.” |
| Conny   | “The depth of knowledge (DOK) initiative in ELA helps us to formulate tasks that challenge the students on all levels. Because most often we find ourselves just challenging students on certain levels, and it’s always those low levels. And students are experiencing false success, when they get into a challenging situation, they don’t know what to do. So with the depth of knowledge chart, it helps you to add rigor to the curriculum.”  
“It is a challenge for the students to formulate an opinion. The students created the claims themselves, as a class. They had to choose one of the claims to write an essay about. So now that you have a claim, which is your opinion at this point, if you can find evidence that supports it, then that makes it a valid statement.” |
| Danny   | “Students were pleased with learning how to ‘plug and chug.’ They finally understood how to try various values of X.”  
“Anything not finished as classwork is given as homework.”  
“When we are graphing linear equations, they are going to see that yes, there is a solution to this one, no, there is no solution, or there are multiple solutions.”  
“I think the cooperative lesson helped with critical thinking because when they realize that, ‘I have an answer, that’s enough,’ but now they realize, ‘Oh, wait a minute, there is more than one right answer,’ or vice versa, ‘this doesn’t work so it must never be true.’ Never is a lot. That’s a big idea.” |
Again, Tables 22 and 23 illustrate a general awareness of and attention to the integration of both literacy and thinking skills, but the lessons observed and the comments made by the teachers did not reveal a specific framework for the instruction of thinking or literacy skills that teachers use either individually or collectively. This is a somewhat surprising finding regarding the teaching of literacy skills since the school has entered into a major literacy initiative, but may be reflective of an early stage status for implementing the initiative. The finding of non-specific thinking skills instruction is not so surprising, given the fact that none of the four teachers reported having received specific training in this area.

As illustrated by the quotes in Table 24, the infusion of and attention to social skills is where the four teachers demonstrated the greatest diversity in thinking and strategy. For instance, Andy and Bobby appear to provide more open-ended structures for cooperative learning activities and take a contingency approach in addressing both social and individual behaviors as they arise. Conny and Danny, on the other hand, create tighter structures and procedures for cooperative learning activities and closely monitor the adherence to those structures. Both of these teachers spent less time than Andy and Bobby re-focusing and re-directing student attention and behavior. Bobby, however, used the reminder of a “group grade” to keep students on task or, at least, not distracted from the task.
<table>
<thead>
<tr>
<th>Teacher</th>
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</table>
| Andy    | “They talked a little bit. So right where you had some folks talking a little bit about, ‘This is what I took from it,’ it took place a little bit.”
|         | “The next day, we started off with the turn-and-talk about what your section was about, because most of them didn’t get a chance to finish with the first go through.”
|         | “The second day we started off with the turn-and-talk. It helped to refresh what the session was about as well.”
| Bobby   | “I’ll play this game maybe about once every six weeks. So within this school year we have taken a quiz like this, this is probably their 4th time. And they love it! They love it! Obviously, I can’t do it every time like this.”
|         | “I think that because for whatever reason he wasn’t participating in the contest, and he normally does, so I knew he probably was having a bad day, and you can kind of tell by their body language and he kind of looked at me when I said, ‘I need a judge,’ and so I said, ‘Come and be my judge.’”
|         | “When they put their heads together trying to figure out that answer, usually, unless they are arguing with each other, they are pretty quiet. Then they get louder once the points are given out.”
|         | “I have had situations where some teams have been so far behind that they give up. Not often, because I encourage them not to give up and I remind them that this is still your grade. You may not win, but you still need to get as many points as possible.”
|         | “Thank goodness, I noticed that with today’s teams, they were all kind of neck and neck. So they stayed motivated.”
|         | “I love music. I don’t use it as a way for them to concentrate. Because typically since I am not playing what research says, like Classical music is supposed to help them learn. I have music playing when they come in, it’s almost like this is your free time, this is your play time, get it all out. Sing, if you want to. I don’t necessarily want them up dancing.”
|         | “They like music and I try to play some of the songs that they like (language appropriate) and I definitely play a lot of the songs that I like because I try to expose them to some different types of music and they tend to like it.”
|         | “So I just use it as a transition piece. But when we play this particular game, I do try to play it in between as they are formulating their answers.”
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<tr>
<th>Teacher</th>
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<tr>
<td>Bobby (cont.)</td>
<td>“Actually, for certain assignments, where I don’t feel like they have to formulate deep answers, I let them wear their ear buds. I don’t mind that. Because honestly some students do work better because they know they can listen to their music, they are not worried about the other person, they are more focused, they are more apt to get the work done. So in terms of how that affects them socially, it does cut down on socialization.”</td>
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<td>“And then with my music, if I play it, the deal is, I’m only playing it so loud. If you can’t hear it, it is probably because people are talking too much. As a matter of fact, they will tell each other, ‘Come on now, I want to hear this song.’”</td>
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<td></td>
<td>“A lot of teachers do not allow the ear buds and I understand that, but for me it works because my students know when they can use it and they know when they can’t.”</td>
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<td></td>
<td>“They know they can’t have them in any time I am talking, certain lessons I will say no ear buds, they can’t use them while taking tests. There are certain times when they are off limits and there are certain times when I say, ‘This is an ear buds day.’”</td>
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<td></td>
<td>“No, I don’t teach social skills. The only thing I can say would be as they work in groups they do learn how to work with people and sometimes people they don’t care for. I get students all the time that say, ‘I really don’t like her, don’t like him,’ and I say, ‘I hate to tell you but that’s life.’ I’ll even give them an example, I say, ‘I work with thirty other teachers, I can’t say I love them all, but if we get an assignment from our Principal, we have to look at the bigger picture.’ So that is a bonus and I think that contributes to social skills.”</td>
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<tr>
<td></td>
<td>“Listening to each other, knowing how to work in a group, I don’t teach a lesson on how to work in a group, but I look at the groups that are having trouble and I break it down and say look, ‘You don’t seem to be listening to anyone.’ You think you might know it all but you really have to sit back sometimes, you know what I mean? You go to different groups and help them with what they need.”</td>
</tr>
<tr>
<td>Conny</td>
<td>“I allow them to use the phones and their ear buds, and I always allow them to use their phone for the internet if we are looking up something. I keep my wireless password posted on the board for the student to use. But this was not a cell phone day.”</td>
</tr>
<tr>
<td></td>
<td>“I like to use examples that are personal. I use their names even when I create tests so that they can feel more involved, take a little bit more ownership.”</td>
</tr>
<tr>
<td></td>
<td>“They think it’s funny, they think it’s nice. They feel proud.”</td>
</tr>
<tr>
<td></td>
<td>“I use close proximity. Keeping in close proximity with all the students in the group. My presence keeps them focused on the task at hand. I give individual help. I remind each group member of their role and make sure they are doing it, that they are performing the task at hand.”</td>
</tr>
</tbody>
</table>
Table 24—Continued

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Danny</td>
<td>“And I stress to them that they need to pay attention because you need to know, A, B, C, in order to get this. And then sometimes we need someone to take the notes, to record, to report out.”</td>
</tr>
</tbody>
</table>

“Walking around, and keeping them on task. If I hear something off math talk, I’ll come by and say something like, ‘Oh, I don’t see anything here about that Performer in these equations,’ and just walk by. They know I have heard it and they know that it’s a group grade. Everyone is going to have the same grade.”

“Some of the groups divided up the columns and compared answers. The group of 5 had 2 ESL students that worked well with the other stronger students in the group.”

“Yes, when they peel the paper off to move it to a different column, or as they are working through the problems and comparing their answers, then they are analyzing and looking deeper.”

“They (the district) like to see us in cooperative groups because overall scores do rise but sometimes it is tough with the socialization aspect of it.”

Chapter IV Summary

The purpose of this study was to describe how content area teachers in a middle school with low reading achievement levels utilize cooperative learning in their content area given the current context of accountability for student mastery of tested core content outcomes. Qualitative data were collected through audio-recorded pre-conferences, classroom observations, audio-recorded post-conferences, and field notes.

The data were analyzed three times using in vivo coding yielding the following key findings: (a) teachers have a general understanding of cooperative learning, with various interpretations; (b) group processing, which allows the students to discuss what worked and what didn’t work for their groups, was not included in any of the teachers’ cooperative structures; and (c) teachers’ use of instructional actions was significantly more consistent across lessons within the literacy skills area. The cooperative learning
lessons were at various stages of implementation, indicating that the teachers were reinforcing or scaffolding earlier concepts. These strategies provided the students with multiple opportunities to use what they had learned in pursuit of improving their reading comprehension. A specific set of literacy skills or critical thinking skills did not appear to be the focus of the lesson; however, all of the teachers included reading, writing, problem solving, and discussion in the cooperative learning activity. Specifically literacy skills required students to read for information (evidence), summarization, confirming comprehension, as well as to recognize claims and evidence. Teachers demonstrated a relentless dedication to incorporating the elements of DOK as prescribed by the Learning Cycles initiative by focusing their instruction on one or two strategies (i.e., summarization and “chunking”) at a time as opposed to multiple strategies which had been shown to hamper students’ understanding.

One striking pattern that emerged from the observations is that none of the teachers included student group processing in their cooperative structures. One of the benefits of working cooperatively is being able to discuss how the group needs to proceed with future assignments, as well as taking a look at what worked well in this particular assignment. Across the continuum of discussions, many of the same patterns of actions and interactions occurred among students as they carried out cooperative learning activities, but they were not afforded the opportunity to reflect on their group processes and the outcomes of those processes. The constructivist lens along with Johnson and Johnson’s social interdependence theory provided the lens through which this study was based and both lenses would suggest that students can accomplish more (i.e., capture
more learning opportunity) by working interdependently and co-constructing the most effective processes for doing so.

My observations revealed that in spite of perceived pressure to cover content, some teachers recognize the benefits of cooperative learning in the middle school environment and the benefits of improving students’ ability to think critically, use important literacy skills, and develop social and personal management skills. The teachers in this study readily agreed to demonstrate how they attempt to address these areas through a cooperative learning instructional model. The findings of this study suggest, however, that teachers may or may not have explicit mental models or procedural/strategy frames for the specific elements of cooperative learning, thinking skills, literacy skills, or social/personal responsibility skills they choose to integrate and infuse with content based instruction. Even where teachers reported the completion of explicit training (cooperative learning) or participation in a school-wide initiative (literacy), they appeared to have vastly varying concepts about what characteristics make up an effective cooperative learning experience for students, what literacy and thinking skills are important to develop and apply in their content, and what social or personal management skills will most enhance the classroom environment and contribute to the expansion of learning opportunity.
CHAPTER V
DISCUSSION

An overview of the findings from this research study along with the importance of those findings (summarized in Chapter IV) are presented in this final chapter. The chapter also connects the findings with existing research and discusses the limitations of the study as well as implications for further research.

Summary of Major Insights

Social interaction is inherent in reading, writing, and speaking. When these interactions are systematically and intentionally expanded, they can strengthen students’ ability to comprehend and to think critically, thus expanding overall learning opportunity. Of particular interest to schools serving middle grades students who lag behind in literacy (and specifically reading) development is the evidence that group processing, inter-dependent thinking, and team problem solving can all be devices to expand students’ opportunity to think critically, increase comprehension, and gain confidence as readers and learners. By way of illustration, all three of these cooperative learning strategies have been shown to improve overall literacy skills in all content areas (National Council of Teachers of English, 2006), reinforcing the theory that knowledge is socially constructed.

Cooperative learning can improve reading comprehension, one of the most important skills that students need to access learning opportunity and increase achievement. With the increased focus on 21st century literacy skills, which includes being able to analyze, synthesize, and evaluate information, and to work well in groups,
educators will want to develop and maintain a repertoire of available strategies that allows the students to be active participants in the learning process.

The focus of this investigation was to describe how content area teachers in a middle school with low reading achievement levels utilize cooperative learning in their content area given the current context of accountability for student mastery of tested core content outcomes. The overarching research question for this study was, “Where, how, and why do middle school core content teachers from a school with low levels of assessed student proficiency in one or more core content areas use cooperative group learning as an instructional model in their classes?” To explore this overarching question further, the following sub-questions were also investigated:

1. How do teachers conceptualize, plan for, and deliver cooperative learning lessons in their content area?
2. How does the teacher infuse and assess the content learning objectives into a cooperative learning lesson?
3. How does the teacher infuse and assess literacy skills within the cooperative learning lesson?
4. How does the teacher infuse and assess thinking skills within the cooperative learning lesson?
5. How does the teacher infuse and assess social skills within the cooperative learning lesson?
6. How does the teacher reflect and interpret what occurred during the delivery of a cooperative learning lesson?
Recap of the Findings

The findings from the four cases examined in this study revealed that the middle school core content teachers have a general awareness and appreciation for the benefits of cooperative learning for their core content discipline. The case study teachers also revealed a general sense of how cooperative learning can be beneficial, especially for their students of poverty who may also have cultural characteristics related to their racial, economic, and social backgrounds, and who often are underperforming as compared to grade level peers at the state average level. Additionally, the teachers demonstrated both a willingness and predisposition to address both higher order thinking skills and literacy skills in their instructional use of cooperative learning. Finally, the teachers all recognized and addressed in various ways the shaping of social interactions and individual behaviors within cooperative learning activities.

Drilling deeper into the analysis, one common finding was that, while each of the teachers both demonstrated and referenced training and use in cooperative learning based activities, they varied in how much structure they applied to those activities. The study was not conducted over a long enough period of time or with a sufficient number of teaching episodes to state how many of the cooperative learning strategies any of the four teachers know and routinely use, but there did seem to be evidence (the way the students actually responded to and performed within the observed cooperative learning activities) that the amount and type of learning process structures and procedural expectations they have for students varied depending on the particular teacher. Two of the observed teachers seemed to take a more spontaneous or contingency based approach to creating and holding students to specific processes and procedures, while the other two seemed to
be more intentional about setting up, teaching, and holding students to specific structures and processes. The teachers, with the exception of Andy, were specific about what particular social interaction and/or personal responsibility behaviors they were attempting to develop in students through the cooperative learning activities. Specifically, Bobby expected students to take turns being the recorder/reporter, Conny expected a certain process for students to follow for reaching consensus and handling dissent, and Danny expected students to follow a process of deliberation in categorizing the math problem.

In keeping with the district’s focus on Learning Cycles, the teachers addressed both literacy and thinking skills in their content area by shaping activities that incorporated and brought students to extended levels of Bloom’s Taxonomy and through the use of cueing patterns that increased the students’ efficiency to think critically. This focus of enacting content literacy strategies in ways that align with instructional goals and on the use of cueing patterns confirms the findings of Adams and Pegg (2012) and the findings of Beyer (2008).

The data collected from the audio-recorded pre-conferences, video-recorded observations, audio-recorded post-conferences, and field notes showed teachers have a general understanding of cooperative learning; however, their interpretations of its definition varies. This may, in turn, account for the lack of group processing evident in the teachers’ instructional actions. Group processing is an essential element in a cooperative group structure. Perhaps the most likely explanation for not utilizing group processing may be that teacher education programs do not introduce prospective teachers to the idea of cooperative learning except on a cursory level. Plus, employing districts may or may not invest in cooperative learning training, coaching, and feedback in a
sustained enough manner for teachers to become fully adept and knowledgeable in the nuances of creating effective cooperative groups and group activities. Research shows that allowing students to reflect on the learning process benefits the students both academically and socially (Johnson & Johnson, 2005). Teachers tend to emphasize the strategies that they feel the most comfortable with, which is indicative of a comfort level that usually takes time to achieve.

Even with training, teachers may also have limited or varied amount of experience with the application of cooperative learning processes depending upon the context where they work. For instance, if there is not a school-wide commitment to and framework for using cooperative learning, teachers can be left to their own devices in how they understand, use, and develop their cooperative learning practices. The same might be said for how secondary content teachers become exposed to, trained for, coached, mentored, and provided feedback on the application of either literacy or thinking skills in their core content area. This certainly applies to the teachers in the four cases examined in this study. They did not have formal training in thinking skills and were only recently engaging with a school-wide literacy initiative which did not appear to have been developed enough to provide the teachers with a specific set of literacy strategies to employ in their disciplines or the training, coaching, and feedback to develop sustainable competency in doing so.

The findings from this study also suggest that when students are motivated, they will most likely put forth a greater effort than usual. Teachers that included both cognitive and physical involvement in their cooperative structures appeared to have increased student motivation while also engaging students in higher levels of Bloom’s
Taxonomy of learning and thinking. There is also a need for instruction in cooperative learning to be ongoing and specific, especially in middle and high school where adolescents tend to prefer working with their peers. Lastly, the results indicated that the teachers’ use of literacy instructional strategies were similar regardless of the core area, suggesting that teachers do not focus on making explicit the discipline-specific literacy practices of their content areas or that they choose instead to focus on generic literacy strategies.

In general, the teachers recognized that students in middle school prefer to work together, but that all students should contribute to the groups’ success. Teachers selected the instructional strategies that they thought would be successful for all of their students, choosing to use the cooperative structures of Jigsaw, heads together, a variation on the Teams-Games-Tournament process, and a group project.

**Relationship of Results to Existing Studies**

The first research question examined the teachers’ beliefs about cooperative learning, how they plan for cooperative learning groups, and the manner in which cooperative learning was implemented. Two of the participating teachers identified cooperative learning as students working together to accomplish a common task or goal. While all of the teachers recognized cooperative learning as an opportunity for students to work together to help each other, Johnson and Johnson (2005) and Kagan (1994), who are the leading researchers in cooperative learning, define cooperative learning as the instructional use of small groups for students to work together, maximizing their own and each other’s learning—the emphasis being on maximizing or expanding learning opportunity. Analysis of the responses of the interview questions leads to the conclusion
that teachers believe cooperative learning to be beneficial in a middle school environment based on middle school students’ developmental needs, but they do not necessarily know which developmental behaviors they will address or how.

Participants’ beliefs about cooperative learning and approaches to carrying out cooperative learning activities parallel the findings of other studies that suggest how a group is structured affects the students’ achievement and peer relationships (Leonard & McElroy, 2000; Roseth et al., 2008). For instance, Leonard and McElroy examined student interaction in cooperative small groups over a six-week period with 95 sixth-grade students in three math classes and found that the students were on task and worked cooperatively to accomplish the goal, but that teachers’ decisions about how the tasks were set up, conducted, and completed affected students’ interactions in cooperative groups. Observations of the four lessons taught by the teachers in this study also showed that how the teacher sets up the structures and processes for cooperative learning has a direct bearing on how the students respond and what they accomplish.

The teachers in this study did not have the benefit of training, coaching, and feedback consistent with the research showing the amount of training teachers need in order to use cooperative learning successfully. Johnson and Johnson (1993) found that teachers require approximately 20-30 hours of instruction, 15-20 hours of demonstration, and 10-15 hours of coaching sessions just to become someone independent and consistent with best practice applications in the use of cooperative learning. By contrast, the training in cooperative learning for the teachers in this study ranged from two 1-week summer workshops given by Kagan to sporadic district-sponsored professional development workshops. Earlier research by Bassett et al. (1999) suggests that the more training a
teacher has, the more frequent will be his or her use of cooperative learning. The district where the four teacher participants for this study teach has begun an initiative of Learning Cycles, which requires all teachers to focus on cooperative learning; however, at the time of this study, this initiative had not produced a comprehensive process for ongoing training, observations, feedback, and conferencing on teachers’ use of cooperative learning. Nor has the initiative produced a specific repertoire of cooperative learning strategies, structures, and processes that teachers are expected to apply to their disciplines.

None of the teachers mentioned the constraints of high-stakes testing and the potential effects on utilizing cooperative learning structures. The fact that the district has now adopted an initiative that requires the teachers to utilize cooperative learning weekly and the fact that this study took place during the second semester, after the completion of the standardized tests, may shed light on why this was not given as an issue. The limited amount of time available to create and carry out a demonstration lesson may have accounted for the fact that the jigsaw structure, used by one of the participants, was modified and did not require the students to break into “expert” groups.

Research question 2 investigated content learning objectives and their relationship to the instructional strategies and to the cooperative task. The teachers’ beliefs about and predisposition to the integration of thinking and literacy skills with their content objectives in a cooperative learning instructional model aligns with work by Roseth et al. (2008), which found that cooperative learning should be embedded in the curriculum to foster open communication and engagement between teachers and students, and to promote problem solving and critical thinking. The kinds of activities students were
involved with in the cooperative learning activities observed in this study required open
communication and engagement, problem solving, as well as critical thinking for two of
the teachers. Students in the other classrooms were involved in completing worksheets
and textbook type of assignments that touched on some higher levels of thinking, but
focused more on application of prior learned content.

Teachers used cooperative learning structures for various purposes: holding
students accountable, student achievement, and adding variety to instruction within a
rather vaguely established notion of its developmental appropriateness for middle school
students. Only one teacher implied its importance relative to adolescents, i.e., that it is
research based and more effective. The National Middle School Association (2003)
asserts that middle school programs must be based upon the developmental readiness,
needs, and interests of young adolescents. The teachers in this study appeared to have a
general sense of this, but no specific operational definition of what that looks like or how
to achieve it.

The third research question investigated the manner in which literacy skills were
implemented and assessed in the cooperative learning lesson. The teachers appeared to
have a surface understanding of what constitutes literacy skills, which was evident in the
amount and kinds of reading and writing the cooperative tasks required. However, it is
possible that being asked to teach a cooperative lesson within a one-hour time slot did not
allow for advanced literacy skills. The four participating teachers all employed literacy
skills that were similar regardless of the core content area, with many of them centering
on reading comprehension strategies such as writing a summary, finding the main idea,
finding evidence, or establishing a claim. Contrary to the findings of Ness’s (2009) study
on reading comprehension in middle and high school social studies and science classrooms where teachers appeared to view reading comprehension as an instructional add-on, the teachers in this study acknowledged that cooperative learning does improve comprehension. Ness’s qualitative findings revealed that teachers did not feel qualified or responsible for providing explicit instruction on reading comprehension. This feeling may also be indicative of the teachers in the study relative to teaching comprehension, but the data did not reveal or hint at this.

My observation revealed that the two areas with the highest concentration of reading, namely, social studies and language arts, tended to create the most student-to-teacher interaction, possibly due to some group members needing help with comprehending or interpreting what was read. This proclivity of these content teachers for addressing at least the most rudimentary forms of literacy skills reflects acceptance of the argument that all teachers must attend to the teaching of disciplinary literacy in every subject area (Meltzer et al., 2001; Rainey & Moje, 2012).

Research question 4 investigated how teachers implemented and assessed thinking skills within the cooperative learning environment. General problem-solving, decision making, and critical thinking appeared to occur in some of the classrooms as an outcome related to working with others and trying to reach a group consensus. Assignments were designed to require students to think critically, which may be a direct result of the district’s Learning Cycles initiative. Again, the teachers in this study did not provide enough information about this initiative to draw conclusions about its potential to develop greater clarity, consistency, and operational definitions for specific cooperative learning or thinking skills processes and strategies. It might be interesting to repeat this
study one or two years into the implementation of the Learning Cycles initiative to assess changes in these areas.

At any rate, neither instruction in specific thinking skills nor assessment of either thinking or literacy skills was observed during the lesson or discussed by the teachers after the lesson. This may be because there was insufficient time to complete an instructional cycle, or because teachers’ assessments remain fixed on the core content outcomes, or a combination of both. In light of studies that continue to show that secondary students who struggle with literacy will not benefit from tasks that are too hard or require them to operate at a literacy level to which they are not accustomed (Beyer, 2008), this lack of specificity about what literacy (or thinking) skills to teach and why is a concern. Studies have shown that literacy at the secondary school level involves students being able to synthesize, analyze, and evaluate information from various sources of text (Alfassi, 2004). A number of researchers share the view that cooperative learning can advance students’ ability to think critically and, by extension, develop important literacy and learning strategies (Gillies & Ashman, 2003; Johnson & Johnson, 1988; Johnson et al., 2010; Marzano et al., 2001; Slavin, 1989).

Marin and Halpern (2011) conducted two studies that compared two modes of teaching for critical thinking: explicit instruction and imbedded instruction. In both studies, the participants were high school students from low-performing high schools with a large minority enrollment. Research tells us that deliberate and repeated practice is needed as well as is using real-life situations to teach critical thinking. Marin and Halpern found, however, that in both investigations the students that received explicit instruction in critical thinking showed much larger gains than those that received embedded
instruction. The question is, by augmenting direct instruction with a cooperative learning instructional model, can teachers provide students with both?

With the exception of the group quiz format, the teachers made group assignments and assigned roles which engaged students in activities that would directly affect what and how they learned. The teachers in this study differed, however, in how they implemented group assignments and how they distributed roles and responsibilities. Both Kagan (1994) and Johnson and Johnson (2005) present a more nuanced process and a range of options for forming groups, creating roles and responsibilities, and assigning students to those roles and responsibilities. With an eye to increased student-centered learning and student-to-student interdependence, both leading researchers on cooperative learning suggest that teachers need to start out with much more teacher control and evolve toward more student control, while making sure that they teach and assess students’ readiness to take on increasing amounts of learning and learning process responsibility.

Research question 5 investigated how the teachers implemented and assessed social skills within the cooperative learning lesson. Since this study took place during the second semester, the students were very familiar with the classroom rules and expectations. This, coupled with the teachers’ assigning groups and role assignments (in some cases), allowed for a minimum amount of what could be considered “negative social” interruptions. Teachers assessed the students’ social skills through constant physical monitoring. Where the teacher underestimated students’ need for more direction or structure, however, the teacher had to spend more time re-focusing, re-directing, and
correcting. Additionally, time lost to this process impeded the students from successfully completing the assigned cooperative work during the time allotted.

Studies show that unskilled group members cannot cooperate effectively (Frey et al., 2009; Johnson & Johnson, 2005) and that students must be explicitly taught interpersonal and small group skills. Contrary to the Johnson’s five essential skills deemed necessary for effective cooperative groups, the teachers in this study did not employ the element of group processing. This came as somewhat of a surprise to the researcher since all of the teachers indicated that they had been using cooperative group structures for some time. The exclusion of this essential aspect of the cooperative learning process deprives students of the opportunity to evaluate their own learning behaviors, the learning behaviors of the group, the needs for corrective action, and the possible strategies for achieving more in future cooperative learning sessions. Omission of the group processing strategy also deprives the teacher of important feedback data upon which to make future decisions about how to best structure, focus, and carry out cooperative learning processes in ways that match both their students’ readiness and needs.

Constructivist based programs that require less structured cooperative learning experiences, group investigations, and student debates are more reflective of the middle grades philosophy; however, middle school students must be systematically prepared to successfully function and achieve intended learning outcomes within those structures. There appears to be a mismatch between this study’s findings in the area of group structure and the developmental needs of adolescents. Middle school students require plenty of opportunities for social interactions. Interventions should focus on establishing
contexts and experiences that can reduce potential problems and enhance positive growth and appropriate behavior. Based on their research findings, Eccles et al. (1993) caution that negative psychological changes that are associated with adolescent development are the result of a mismatch between the needs of developing adolescents and the opportunities they encounter in their social environment.

Finally, research question 6 investigated teacher reflections and interpretations of the cooperative learning lesson. The teachers’ reflections and interpretations of their cooperative lessons tended to be a reflection of their beliefs about cooperative learning as shared in the pre-conference. One theme that emerged during the post-conference was that all of the teachers relied heavily on maintaining close proximity by constantly walking around in order to monitor students’ academic progress and their behavior. Interestingly, teachers’ beliefs and reflections were parallel in recognizing the role of structure and adolescents social needs. It seems clear that teachers who hold beliefs that cooperative learning is a valuable tool for adolescents will most likely be inclined to incorporate that instructional model in teaching their content; however, that does not necessarily translate to greater clarity about how to get the most out of cooperative learning experiences, especially when integrating content, literacy, thinking, and social skill objectives.

Gillies and Boyle (2010), in a report on teacher reflections on cooperative learning, found that, similar to the present study, the teachers had positive experiences with cooperative learning. Socializing during groups, group composition, and the task assigned to the group were also areas of concern for both studies. Specifically, for the present study, these concerns manifested themselves in the teachers’ conceptualization
and beliefs about cooperative learning and were evident in how they conducted the lesson. Unlike Gillies and Boyle’s study, however, the teachers in the present study did not reflect on issues such as managing time effectively, the preparation required to implement cooperative lessons, or the social skills training needed to teach students how to work cooperatively.

The findings from this study are consistent with Leonard and McElroy’s (2000) case study showing that students need to have plenty of time to talk and to work their ideas out, to listen and exchange ideas, and to present their ideas to each other as well as to an outside audience. Mueller and Fleming’s (2001) study revealed that when working in groups, children require periods of unstructured time to organize themselves and to learn how to work together toward a common goal. Both studies show the benefits of group processing during cooperative learning tasks, but raise the question of how much instructional time it takes to have students achieve high functioning cooperative groups through trial and error versus direct structures provided by the teacher. This study suggests that, at least initially, until students gain the experience to co-construct workable cooperative learning structures and processes based on past experience and confidence gained, teachers might be well advised to err on the side of a little more structure and guidance to students about how to conduct themselves during the cooperative learning activities.

Roseth et al.’s (2008) meta-analysis reviewed 148 independent studies that compared the relative effectiveness of cooperative, competitive, and individualistic goal structure in promoting early adolescents’ achievement and positive relationships, which ultimately provided the impetus for this study. Their study, as predicted by social
interdependence theory, indicated that higher achievement and more positive peer relationships are associated with cooperative rather than competitive or individualistic goal structures. The teachers who participated in this study appear to trust that time invested in cooperative learning will pay off in greater learning opportunity. In the meantime, they are encouraged by students’ positive response to, engagement with, and accomplishments from the cooperative learning activities they incorporate into their core curriculum instruction. Even when the lessons do not go quite as planned, when students get off task and need to be redirected, and when the teacher realizes further development of the cooperative learning processes is needed, these teachers remained hopefully optimistic and determined to continue experimenting with both cooperative learning ways to learn the core content and cooperative learning ways to apply and enhance literacy, thinking, and social skills.

These four case study teachers sustain their belief in the value of cooperative learning despite some of the complications and complexities of actually designing and carrying out this instructional model. What is clear, however, is that these four teachers would benefit greatly from clear instructional models for the use of cooperative learning in their discipline, clear models for the development and application of thinking skills to their discipline, and clear behavior models for the types of social and personal responsibility skills middle school students need most at this stage of their lives and learning. Without such models, teachers are left to figure it out alone or with colleagues who share the same interests and concerns. The district that employs these four teachers appears to be moving in the direction of providing initiatives that could provide such
models and a dependable process for training, supporting, and reinforcing the work teachers are doing to employ these models.

**Summary of Recommendations for Further Research and Practice**

Further research is necessary to determine if using domain specific literacy strategies in the context of cooperative learning structures yields similar results as using generic literacy skills in each of the core content areas. It would also be helpful to provide ongoing and specific professional development training in cooperative learning, which would assist teachers in developing in greater detail the strategies and skills needed for effective implementation of cooperative classroom structures and processes. Strategy implementation takes time to implement effectively. Through extended use, teachers may develop explicit mental models or procedural/strategy frames for the specific elements of cooperative learning, thinking skills, literacy skills, or social/personal skills they choose to integrate and infuse with content based instruction.

Another area of practice needing further attention relates to prospective teacher training. This recommendation is based on the observation that none of the teachers included student group processing in their cooperative structures. Group processing is a necessary component for cooperative groups (Johnson & Johnson, 2005) to be successful and can be an ideal means of capitalizing on the developmental characteristics of adolescents (Slavin, 1996). Adolescents tend to prefer to work with peers; therefore, instruction in cooperative learning needs to be ongoing and specific (Johnson & Johnson, 1993). Teacher training programs should not only provide classroom knowledge of cooperative learning structures, but should also provide pre-service teachers the opportunity to experience a cooperative learning interaction. While the teachers in this
study had received training in cooperative learning either formally or informally, further training with a focus toward the benefits of group processing may motivate teachers to continue to employ this strategy.

Finally, while there has been solid research to isolate specific cooperative learning strategies, thinking skill strategies, literacy strategies, and social/emotional development strategies, more work is needed to identify how strategies in any of these areas can leverage the development of strategies in other areas and how strategies in any of these areas can leverage learning attainment within specific academic disciplines.

Research shows that the “Matthew effect” is evident in students from urban schools, namely, that they start school behind students from a higher SES status and remain behind often throughout middle and high school. The teachers in this study, in spite of perceived pressure to cover content, recognized the benefits of cooperative learning, the benefits of improving students’ ability to think critically, using important literacy skills, and the benefit of developing social and personal management skills.

Table 25 summarizes the three most significant findings from this study. First, cooperative learning is a complex and multi-faceted teaching and learning framework. To implement it well, teachers must plan lessons on multiple levels and establish the structures within which students can successfully achieve the intended learning, thinking, application, and group processing outcomes. Previous studies have shown that teachers require specific and ongoing professional development to develop and refine their ability to create dynamic learning experiences within a cooperative learning context; however, the teachers in this study did not have the benefit of either in-depth or sustained professional development and, thus, found it difficult to establish the structures and
processes that characterize the most effective cooperative learning experiences for students.

Table 25

**Significant Findings from Wells (2014)—Compared to Previous Research Findings—Recommendations**

<table>
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<th>Significant Findings (Wells, 2014)</th>
<th>Previous Research Findings</th>
<th>Recommendations</th>
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<tr>
<td>Teachers have a general understanding of and appreciation for the potential benefit of cooperative learning, but have varying interpretations and knowledge of the structures and processes that are associated with the cooperative learning process.</td>
<td>Aligns with findings by Gillies &amp; Ashman (2003) teacher implementation of cooperative groups; Johnson &amp; Johnson, (2005) group structures; Dewitz, Jones, &amp; Leahy (2009) skills and strategies.</td>
<td>Ongoing and specific professional development training in cooperative learning would assist teachers in developing, in greater detail, the strategies and skills needed for effective implementation of cooperative classroom structures and processes.</td>
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<tr>
<td>Group processing which allows students to discuss what worked and what did not work for their group was not included in any of the teachers' cooperative structures.</td>
<td>Shows a glaring omission of one of the key best practices of cooperative learning as established by Johnson &amp; Johnson (2005) identification of five essential skills necessary for effective cooperative groups; Mueller &amp; Fleming, (2001) supportive, non-directive teachers; Leonard &amp; McElroy (2000) benefits of group processing.</td>
<td>Develop pre-service courses and field experiences to introduce prospective teachers to cooperative classroom methods with a focus on the benefits of group processing. This could also contribute to providing teachers more tools for building student responsibility for learning.</td>
</tr>
<tr>
<td>Teachers used a wide array of literacy skills within the cooperative learning sessions with a high degree of similarity (10/16) between teachers relating to the specific literacy skills.</td>
<td>Aligns with work by Freedman &amp; Carver (2007) adolescent literacy development; Roseth, Johnson, &amp; Johnson (2008) embedded cooperative learning strategies in the literacy skills curriculum; National Institute for Literacy (2007) provide opportunities for students to interact through reading.</td>
<td>A study is needed to determine if domain-specific literacy strategies would work best for each of the core content areas and would be beneficial in allowing for modification of the strategies used to teach cooperative learning.</td>
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</table>
Second, as illustrated in the second entry of significant findings in Table 25, the cooperative learning lessons observed in this study contained no evidence that teachers taught students the structures of group processing, developed the habits of group processing, or consistently included group processing in their cooperative learning lessons. This finding illustrates a departure from what Johnson and Johnson (2005) and Mueller and Fleming (2001) found to be essential practices for teachers who are moving students from teacher dependent learning to independent and interdependent learning.

Third, the last entry in Table 25 illustrates that specific training and support for the use of specific literacy skills leads to the consistent application of those skills by teachers across the curriculum. This raises the question of the potential benefit of further study to identify domain-specific literacy strategies for each of the core curriculum areas. In schools that have established common literacy strategies and provided both the initial training and ongoing support for the use of those strategies, might there be both the opportunity to and potential benefit from also identifying certain literacy strategies and skills which are of particular value for students to engage effectively with the content of each of the core disciplines? How might a program of a combination of general literacy strategies and discipline or content specific strategies increase students’ command of the core subjects and broaden students’ repertoire of reading strategies for life-long learning in multiple contexts and multiple subject areas?

Revisiting the Study Limitations

The research was conducted using a qualitative case study methodology with a limited number of four study participants. This rendered detailed descriptive findings which provided the grounding for insights and understandings related to middle school
content teachers’ use of cooperative learning and integration of literacy, thinking, social and personal management skills with core content concepts and learning outcomes. By virtue of opting to conduct a study that would go into this kind of depth, the researcher must acknowledge that the findings may not be generalized to teachers in other districts or other schools within the district. Furthermore, since all of the results were collected at one specific point in time, causal inferences cannot be made. Additionally, because of focusing on description only, and ignoring other potentially relevant categories (such as student motivation, teacher training, or gender), the findings of this study may be limited in use. Despite these limitations, however, results of this study indicate that teachers’ implementation of cooperative learning is influenced by their prior knowledge, training, and their current curriculum obligations. Additionally, teachers’ development as skilled designers and users of cooperative learning is limited in schools where there is not a shared commitment to this instructional model, clear operational definitions, established practices, and an ongoing process for monitoring, feedback, and adjustment.

Finally, the researcher is a retired middle school teacher from the district in this study. During my tenure, and as a co-worker of the participants, cooperative learning was not a focus of instruction and did not receive the attention afforded at this point in time as a result of the newly adopted district initiative, Learning Cycles. Since the Learning Cycles is relatively new, in the early stages of implementation, and not well enough understood by the teachers who participated in this study, nothing can be inferred about the current or potential impact of the initiative over time.
Implications for Policy, Practice, and Organization

Effective literacy instruction in middle and high schools is not just the job of the English and language teachers. Literacy is a perquisite of all other courses and therefore should be a staple in all teachers “toolbox.” The lack of adequate literacy skills may play a major role in the massive achievement gaps along socioeconomic lines. Teachers need a fundamental understanding of the similarities and differences of literacy across disciplines so that they can help students navigate the various disciplines that they will encounter.

District changes are needed that stress the relevance of cooperative learning for students and communicate to staff, students, and parents how cooperative learning expands learning opportunity for their children. Districts should also adopt curriculum maps that overlay literacy skills and critical thinking skills with both the core and non-core academic disciplines so as to ensure their application on classwork, homework, and exams. It is further recommended that literacy coaches who also have training in thinking skills be utilized at the secondary level to assist all teachers in examining best practices related to adolescent literacy and strategic use of thinking skills in the core curriculum disciplines. Finally, school and district student success initiatives and programs must be chosen wisely and given time to succeed, at the school and district level, noting that the most powerful initiatives could take years to fully implement and assess. The cognitive, social, and emotional aspects of cooperative learning are well documented influencers of academic achievement. All school initiatives to improve student success would do well to take seriously the ways that cooperative learning can leverage learning opportunity for
students and support that seriousness with greater intentionality in helping teachers learn,
apply, and evaluate cooperative learning practices within their disciplines.

Summary

In this manuscript, which details a multiple case analysis of middle school content
teachers’ use of cooperative learning, I have reviewed research indicating the many
benefits of allowing adolescents to work cooperatively. Research indicates that
cooporative learning can be taught at any time regardless of age and that it is a necessary
skill for academic advancement and in the workplace. However, cooperative learning,
when effectively implemented, requires time and consistency. As a result, this could be
an issue in urban districts where teachers have limited access to resources, teacher and
administrator turn-over is frequent and ongoing, and, thus, initiatives come and fade
away without ever being given the benefit of full implementation, authentic evaluation of
impact, or sustained support where that impact is established. This process of two steps
forward (in terms of what we know to achieve better results with students) and one or
more steps back (in terms of what we actually commit to, implement, and support) is
undermining the capacity to revitalize schools that serve high needs student populations.
This study concludes with the hope that researchers, policy makers, and school leaders,
alone, will take this seriously. It is also this researcher’s hope that we will begin to find
ways for sustainable school renewal that incorporates the best of what is already known
(about how students benefit from cooperative learning, how to teach literacy and thinking
skills, how to develop social skills, and how to develop students’ capacity for self-
directed learning) with sustained inquiry regarding how to weave what we know into
more effective change models for our schools.
REFERENCES


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Jones, R. C., & Thomas, T. G. (2006, September). Leave no discipline behind. *The Reading Teacher, 60*(1), 58-64. doi:dx.doi.org/10.1598/RT.60.1.6


gingread
ters-literacy/index.html


Appendix A

Superintendent’s Consent Letter
Superintendent’s Consent Letter

August 7, 2013

Dr. Daveda Colbert  
Superintendent, Oak Park School District  
14000 Granzon Street  
Oak Park, Mi. 48237

Dear Dr. Colbert:

This is a request to conduct a Research Study in the Oak Park School District at the Middle School. I am in the process of completing my dissertation at Western Michigan University and am a member of the Oak Park WMU Cohort.

I would appreciate the opportunity to meet with middle school staff to recruit teachers to participate in my qualitative study. The title of the study is: How Does Participation in Cooperative Groups affect Critical Thinking? I hope to recruit teachers from the core areas of math, science, social studies, and language arts who have been trained in differentiated instruction (i.e. cooperative learning, team learning).

Participating teachers will be contacted to schedule a meeting outside of the regular school hours. I will meet with each participating teacher to co-construct a mini unit using the existing curriculum. The focus during my observation of the lesson will be on how students’ critical thinking skills are affected after exposure to cooperative groups.

Those who agree to participate will not be identified. The data gathered will be used in this dissertation only.

Please contact me if additional information is needed: Martha (Mart) Wells 248 680-9749 or wvogratamercv@yahoo.com.

If approval is granted, please sign and date below. Contact me via email and I will be glad to pick up the completed form from your office. I look forward to working with the Oak Park team.

Thanking You in Advance,

Martha Wells
Approved by:
Daveda J. Colbert  
Signature  
Date

Print – Name and Title  
Signature  
Date
Appendix B

Letter of Invitation for Teacher Participation
Letter of Invitation for Teacher Participants

Dear Oak Park Preparatory Academy teacher,

My name is Martha Cunigan-Wells, a retired Oak Park School District teacher. I am completing my doctoral work at Western Michigan University and am looking for teacher participants from the core areas of math, science, social studies, and language arts. The study focuses on adolescent literacy, critical thinking, and cooperative learning in the middle school environment and is titled: How Do Middle School Core Content Area Teachers in a Title I School Use Cooperative Learning In The Context of High Accountability for Student Proficiency? A Multiple Case Study. I am excited about this study and hope that you can help me find the answer to its question.

If you should decide to participate, your involvement will consist of: 1) a pre-conference 9 question interview 2) your planning and teaching a cooperative learning lesson that will be video-recorded. Implementation of the lesson will also be observed by the researcher. 3) a post conference to debrief the video-recorded lesson. The video will remain on site at all times.

I look forward to the opportunity of working with you and to learning about your thoughts and perceptions relative to adolescent literacy, critical thinking, and cooperative learning as well as to provide further explanations of the study.

Respectfully,

Martha Cunigan-Wells
Researcher
Western Michigan University
Appendix C

Consent Form
Consent Form

Western Michigan University
Educational Leadership, Research and Technology

Principal Investigator: Patricia L. Reeves, Ed.D.
Student Investigator: Martha Cunigan-Wells
Title of Study: How Do Middle School Core Content Area Teachers in a Title I School Use Cooperative Learning in the Context of High Accountability for Student Proficiency? A Multiple Case Study

You have been invited to participate in a research project titled “How Do Middle School Core Content Area Teachers in a Title I School Use Cooperative Learning in the Context of High Accountability for Student Proficiency? A Multiple Case Study - This project will serve as Martha Cunigan-Wells’ dissertation research project for the requirements of the Doctor of Philosophy degree. This consent document will explain the purpose of this research project and will go over all of the time commitments, the procedures used in the study, and the risks and benefits of participating in this research project. Please read this consent form carefully and completely and please ask any questions if you need more clarification.

What are we trying to find out in this study?
The overarching research question for this study is, where, how, and why do Middle School core content teachers from a school with low levels of assessed student proficiency in one or more core content areas use cooperative group learning as an instructional model in their classes?

Who can participate in this study?
Inclusionary criteria for participating will be that the teacher teaches primarily a schedule of classes in one or more of the four core content areas and have taught in the school for at least a year. Exclusionary criteria will pertain to any teacher who is pre-tenured or on a plan of assistance due to ineffective or minimally effective teacher evaluation ratings.

Where will this study take place?
The study will take place in a middle school classroom at a time that is convenient for the participating teachers.

What is the time commitment for participating in this study?
The study will be conducted in phases. Phase I (the initial meeting) and Phase II (investigator observation of teacher implementation of a cooperative learning lesson and videotaping of said lesson) will require a time allotment of 1 hour each. Time required for Phase III (post-conference) is 45-60 minutes. The teachers will video tape themselves teaching a cooperative lesson as the researcher observes the implementation of the lesson.
The video-taped lesson will be watched by the teacher and the researcher. The video will remain on site at all times.

**What will you be asked to do if you choose to participate in this study?**
During Phase I, the initial meeting, you will be asked to respond to 9 interview questions. You will also be asked to construct a cooperative learning lesson, prior to phase II observation, in which you will use a learning format to engage students with a learning activity that blends cooperative learning, critical thinking, literacy, and some aspect of the subject matter content that you believe most students have mastered. The lesson should be designed to fit into one class period. The investigator will audio record and take field notes of the initial meeting to guide observations of the lessons and the post lesson conference.

During Phase II, the classroom observation, you will be asked to implement the cooperative learning activity in the classroom. The investigator will also ask that you video record implementation of the lesson. The video recording will not leave the school site. The investigator will use the “Researcher Protocol for Conducting the Observation,” to take notes during the observation.

A post-conference meeting during Phase III will take place to allow the teacher and investigator to work together to debrief the video recorded lesson and the investigator’s notes recorded on the “Researcher Protocol for Conducting the Observation” during phase II. The teacher will talk through what is going on in the video. An audio recording will be taken during the post conference meeting.

**What information is being measured during the study?**
The teacher interviews, classroom observations, lesson plans, field notes, and transcriptions when combined with existing research, will help to provide a rich descriptive analysis of the process teachers employ to integrate literacy, content, and critical thinking elements within a cooperative learning lesson and the manner in which students respond to such an integrated lesson.

**What are the risks of participating in this study and how will these risks be minimized?**
There are no known risks from participation in this research.

**What are the benefits of participating in this study?**
Secondary educators equipped with various forms of interventions may have a better understanding of the interrelationship between critical thinking, cooperative learning, and social skills and may become more competent and confident in the use of them. Furthermore, this study will address some of the challenges teachers face teaching adolescents and teaching students who are functioning below grade level in reading and other basic skills while also teaching social/behavior skills.
Are there any costs associated with participating in this study?
Some teachers may feel apprehensive due to pre-existing time constraints.

Is there any compensation for participating in this study?
Your participation in this research is voluntary.

Who will have access to the information collected during this study?
If you agree to participate in this study, your identity will be kept strictly confidential. No identifying features will be used in any analysis or in any reporting of the research. Participants will be referred to as “Teacher A, Teacher B, and etc.” Data will be reported only in aggregate form. The collected data will be kept for at least three years in a locked file coded with identifying marks, in the principal investigator’s office. Only the co-principal investigators will have access to the file.

What if you want to stop participating in this study?
You can choose to stop participating in the study at any time for any reason. You will not suffer any prejudice or penalty by your decision to stop your participation. You will experience NO consequences either academically or personally if you choose to withdraw from this study.

The investigator can also decide to stop your participation in the study without your consent.

Should you have any questions prior to or during the study, you can contact the primary investigator, Patricia Reeves at patricia.reeves@wmich.edu or Martha Cunigan-Wells at 248-321-3181, marti.wells@wmich.edu. You may also contact the Chair, Human Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.

This consent document has been approved for use for one year by the Human Subjects Institutional Review Board (HSIRB) as indicated by the stamped date and signature of the board chair in the upper right corner. Do not participate in this study if the stamped date is older than one year.

------------------------------------------------------------------------------------------------------------------

I have read this informed consent document. The risks and benefits have been explained to me. I agree to take part in this study.

Please Print Your Name

________________________________________________________
Participant’s Name

________________________________________________________
Date
Appendix D

Teacher Interview Prompts for Initial Lesson Planning
Session Between Researcher and Teacher
Teacher Interview Prompts for Initial Lesson Planning
Session Between Researcher and Teacher

Please respond to all questions to the best of your ability.

What grade do you teach? ______   Number of students? _____
Subject taught? ___________________ How many years have you been teaching? _____

1. Please describe the training and experience that you have had in developing and using strategies in the following areas
   a. Cooperative Learning
   b. Thinking Skills
   c. Literacy Skills

2. What is your personal definition of cooperative learning?

3. In your experience, how has cooperative learning worked as an instructional strategy with adolescents?

4. How do you plan for cooperative learning lessons?

5. What is your purpose in using cooperative learning structures?

6. How do you establish individual accountability within a cooperative learning lesson or activity?

7. What literacy skills do you try to develop or apply in cooperative groups?

8. What are some of the thinking skills you try to develop or apply in cooperative groups?

9. What social skills do you try to develop in cooperative groups?
Appendix E

Researcher Protocol for Conducting Observations and Researcher Protocol for Debriefing the Lesson During the Post-Observation Conference
# Researcher Protocol for Conducting the Observation/Post-Conference

**Teacher:** A – B – C – D   **Lesson Objective:** _____________________   **Date:** _____

**Group Type:** (i.e. Jigsaw; Think-Pair-Share; Groups of four)____________________

**Codes for Bloom’s Taxonomy Levels:** K – Knowledge; C – Comprehension;  
A – Application;  An – Analysis; S – Synthesis; E – Evaluation

*Teacher’s Role:* Direct/Explicit Instruction – Modeling – Scaffolding – Facilitating – Participating

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*Adapted from Gambrell, Morrow, and Pressley (2007). *Best Practices in Literacy Instruction*
Appendix F

Human Subjects Institutional Review Board
Letter of Approval
Date: March 12, 2014

To: Patricia Reeves, Principal Investigator
    Martha Cunigan-Wells, Student Investigator for dissertation
    Sue Poppink, Co-Principal Investigator

From: Amy Naugle, Ph.D., Chair

Re: HSIRB Project Number 14-01-25

This letter will serve as confirmation that your research project titled “How Do Middle School Core Content Area Teachers in a Title I School Use Cooperative Learning in the Context of High Accountability for Student Proficiency? A Multiple Case Study” has been approved under the expedited category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note: This research may only be conducted exactly in the form it was approved. You must seek specific board approval for any changes in this project (e.g., you must request a post approval change to enroll subjects beyond the number stated in your application under “Number of subjects you want to complete the study.”) Failure to obtain approval for changes will result in a protocol deviation. In addition, if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

Reapproval of the project is required if it extends beyond the termination date stated below.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: March 11, 2015