HIGH SCHOOL ECONOMICS, COOPERATIVE LEARNING, AND THE END-OF-COURSE TEST—A CASE STUDY

by

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(Under the Direction of John D. Hoge)

ABSTRACT

The primary purpose of this twelve-week case study was to explore the use of a cooperative learning strategy with small groups of students in a 12th-grade economics class as diverse learners prepared for tests. The complete case study was based on observations of students, student surveys, focus group interviews, and interviews with educators at the school who had used cooperative learning strategies with their classes. The experiences of these students and educators informed the case study about individual and cooperative group learning, differentiated group roles, accountability, and test outcomes. Findings were consistent with the literature regarding secondary and higher education cooperative learning with positive outcomes for social and motivational factors.

INDEX WORDS: CL (Cooperative Learning), STAD (Student Teams Achievement Divisions), STAD-D (STAD augmented with differentiated group roles), GHSGT (Georgia High School Graduation Test), EOCT (End-of-Course Test), ESOL (English Speakers of Other Languages), ESS (Exceptional Student Services), IEP (Individual Education Program), LEP (Limited English Proficient)
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by

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DEDICATION

For Juan: You willingly sacrificed your young life for the dream of a better one in a foreign, and now grateful, nation. *Semper fi* . . . Rest in peace.
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CHAPTER 1

INTRODUCTION

Purpose of the Study

This action research case study explored how a class of diverse high school seniors responded to instruction to help them learn economics concepts. It includes an exploration and analysis of how a cooperative group learning strategy impacted students in this class, which culminated in their taking the Economics End-of-Course Test, a state requirement for Georgia high school graduation.

Cooperative learning was selected in this case study as a strategy to help students learn economic concepts that are tested on the Economics End-of-Course Test. Decades of research on cooperative learning indicate that it enhances achievement, motivation, self-esteem, social skills, and mutual success through collaborative effort (positive interdependence), group goals, and individual accountability for a wide variety of students.

Research Questions

How did the use of a cooperative learning strategy influence the learning of economics concepts by a class of diverse high school seniors? How and why would such effects have occurred?

Student Teams Achievement Divisions Cooperative Learning

Student Teams Achievement Divisions (STAD) was selected as a specific type of cooperative learning (CL) method during this case study. Cooperative learning has been demonstrated to have positive effects on achievement, motivation, social skills, and self-esteem across different
subject areas, ages, abilities, and ethnic groups (Johnson, D.W, Maruyama, Johnson, Nelson, & Skon, 1981). STAD is a relatively simple cooperative learning strategy to implement and has shown particularly positive results for single response answers (convergent), such as those found on end-of-course-tests. It also presents opportunities to observe differentiated learning roles within groups as well as some individual information processing within the group through discussion and evaluation.

The Problem

The state, through the Georgia High School Graduation Test and End-of-Course-Test mandates, has literally determined the immediate destiny of high school students, and local school systems and educators share the responsibility for appropriately preparing diploma-seeking students to pass these tests. The immediate educational and economic future of Georgia high school students depends on students being able to learn what they need to know to pass these tests in order that they may be afforded the opportunity to move on successfully to the next level of their lives so that they can compete for better jobs and have the opportunity to pursue post-secondary education. The STAD-D cooperative learning method may help to promote a positive learning outcome for high school seniors in terms of learning economic concepts that help them to pass the class and the Economics End-of-Course-Test and, therefore, to graduate.

Rationale

Democratic public education represents a transformative, ideal goal of education that seeks to prepare students ultimately to become thoughtful, participatory citizens. This goal requires equal opportunity for education based on a consideration for unequal conditions that inevitably exist. Ameliorative actions within the classroom that address this concern would include differentiated instruction that is structured through cooperative learning group methods such as STAD-D.
Such methods may be utilized to prepare students to move to their next level of learning that ultimately promotes equal access by enabling all students to successfully negotiate mandated academic “gatekeepers,” such as content end-of-course-tests, the Georgia High School Graduation Test, the Student Assessment Test, and the American College Test. Such success would result ultimately in the capacity for continued higher education that facilitates economic, social, and political equity, which supports and sustains engagement in the democratic process and comes full circle to the ideal of democratic public education.

As well as helping diverse students learn to work together as a community of learners to become better problem-solvers, to become reflective thinkers, and to develop meta-cognitive skills, communities, educators, and parents must also collaborate to enable such skillful, thoughtful students not only to complete high school but also to continue on to more advanced training, including higher education. As surely as a rising tide lifts all boats, access to advanced training and higher education would truly result in an educational outcome that would immeasurably benefit everyone.

**Definitions**

AYP (Adequate Yearly Progress)—federal public school achievement mandates

Block Schedule—a four-period class day (Monday through Friday) in which four classes are taken each semester of the school year

CL (Cooperative Learning)—a teaching strategy in which small groups of students work together to maximize learning

EOCT (End-of-Course Test)—state mandated tests in high school content subjects

ESOL (English Speakers of Other Languages)—students whose first spoken language is not English
ESS (Exceptional Student Services)--students who have an individual educational plan that require specific learning accommodations and modifications

LEP (Limited English Proficient)--students who are not fluent in the English language

NCLB (No Child Left Behind)--federal education policy that impacts state and local school systems by mandating student achievement results for adequate yearly progress

STAD-D (Student Teams Achievement Divisions augmented with differentiated group roles--a form of cooperative learning)

Summary

This action research case study explores how a class of diverse high school seniors responded to a cooperative learning strategy, STAD-D, to help them learn economics concepts in preparation for an End-of-Course-Test with the goal of affording them the opportunity to become more thoughtful, participatory citizens. The specific questions explored for this case study were as follows: How did the use of a cooperative learning strategy influence the learning of economics concepts by a class of diverse high school seniors? How and why might such effects have occurred?
CHAPTER 2
REVIEW OF THE LITERATURE

Introduction

This review of the research literature for cooperative learning was retrieved primarily from ERIC beginning in 2003 and continuing into April 2007. The search was limited to peer-reviewed educational journals and included cooperative learning and achievement (which produced primarily quantitative studies), and, most recently, cooperative learning and qualitative research, and cooperative learning and high stakes testing. Studies were selected based on preponderance of best evidence, as the same authors began to emerge. Later, consideration was given to studies that were of at least 4 weeks duration and were conducted by those considered to be leading researchers in cooperative learning and to articles that informed other dimensions of cooperative learning, such as cognitive learning, multiculturalism, learning styles, and multiple intelligences. The qualitative studies that were a good fit for this review were primarily based on quasi-experimental mixed methods design or action research models.

The review of literature explored cooperative learning, including group structures and methods, quantitative and qualitative studies, elementary, secondary, and higher education research, and, specifically, Student Team Learning, with regard to student achievement, social, ethnic, and affective outcomes. A conceptual and theoretical framework for this case study is also included.
Components of Cooperative Learning

Cooperative learning involves students working together to maximize their own learning as well as the learning of every other group member. According to D.W. Johnson and Johnson (1983), there are five important components of cooperative learning that should be included in group activities. These are positive interdependence, face-to-face interaction, individual accountability, interpersonal skills, and group processing. Positive interdependence requires all group members to participate in a given task through a design that provides group rewards and shared resources for tasks that are too difficult to complete individually. Face to face interaction requires group time and space for group meetings and equal participation among group members in completing the cooperative task. Individual accountability requires group participants to learn the material and to demonstrate that each has mastered it. While the group facilitates the learning of all members, each individual is responsible for understanding what is taught. Interpersonal social skills that individuals within groups must develop include learning how to communicate effectively (how to speak, how to listen, how to take turns) and deciding how to handle conflicts appropriately. Continuous observational feedback by the instructor should enhance such skills. Group processing, through debriefing, provides individuals within groups the time and space in which to reflect upon the processes that took place in their group that facilitated (or prevented) achieving the goals of the group (D. W. Johnson & Johnson, 1983). The intent is for all participants to learn more about group dynamics in order for each individual within the group and for the group as a whole to successfully and thoughtfully complete learning tasks.
Cooperative Learning Group Types

Smith, Johnson, and Johnson (1992) theorized that there are a variety of cooperative learning activities that may be classified into three group types: informal learning groups, formal cooperative learning groups, and cooperative base groups. Informal learning groups are less structured and of shorter duration, frequently requiring students to complete a task based on a lecture. Formal cooperative learning groups are longer in duration, are comprised of 2 to 4 member groups, and are usually established to complete a project. Cooperative base groups are stable, long-term, peer support groups composed of 3 to 5 individuals. According to Smith et al. (1992), base groups enhance the learning and attendance of students in larger classes and improve teaming skills. Therefore, in terms of cooperative learning paradigms, form should follow function.

Complexity of Cooperative Learning Research

It is precisely the complex nature of cooperative learning that makes it simultaneously compelling and difficult to study. A large body of research suggests that cooperative learning successfully promotes academic achievement and social skills development (Elmore & Zenus, 1992). This evidence presents cooperative learning as a useful, well-researched, data-driven educational improvement strategy that is often recommended by advocates of school reform (Carnegie Council on Adolescent Development, 1989).

In general, qualitative studies of structured cooperative learning seek to determine why and how outcomes have occurred with frequency or not, based on descriptive information that is used to classify and summarize phenomena. Such qualitative data are acquired by actions, tests, observations, and interviews that may then be frequency-counted and/or ranked and coded according to themes that reveal and explicate emergent variables, most importantly, from the
point of view of the subjects involved. While such subjective results are not intended to produce
generalizations, they add valuable intrinsic information to the overall body of knowledge
concerning the effectiveness of cooperative learning and include another important, possibly the
most important, perspective or voice, that of the stakeholders (Crotty, 1998).

Grossen (1996) identified a need for research in real life classrooms as opposed to researcher
controlled classes. According to Maxwell (2004), there is recognition of the practicality of
mixed-methods research based on a report by the National Research Council (2002) that calls for
a broad definition of science that encompasses both qualitative and quantitative approaches.
Such hybrid research design would be uniquely interesting and might prove both pragmatically
and realistically to be a useful model upon which to design inquiries that could inform and,
therefore, better elucidate cooperative learning cognitive constructs and their outcomes. This
represents an area of research that includes cognitive, elaborative mental processing of
information and is acknowledged to require further research and understanding (Slavin, 1995).
Additionally, the researcher might be able to understand the particular interaction processes by
which an event or situation occurs as well as address its general causal patterns.

However, classroom teachers as action researchers are more likely to consider research
question, process, and application issues such as time constraints, curricular content, and student
factors when implementing cooperative learning models from which they will inductively form
conclusions (Siegel, 2005). Such constructivist teachers are, therefore, more likely to use a
commonly accepted cooperative learning research based model to the extent that it is both
applicable and adaptable to their particular classrooms and specific needs based on prior teaching
experience, teaching style, and teaching context (Siegel, 2005).
Overall, much of the available research deals with cooperative learning as a strategy to improve motivation and social cohesion as well as group and information processing skills through interdependence, group goals, and individual accountability in order to improve achievement. One higher education study concluded that retention for women as science, mathematics, engineering, and technology majors may be enhanced if they are taught with cooperative learning rather than competitive methods (Kreke, Fields, & Towns, 1998). There was not a plethora of studies of any kind that involved upper high school or higher education and cooperative learning outcomes. Inasmuch as structural contingencies must be met for successful, specified outcomes, simply grouping students to work on a common assignment in no way implies that cooperative learning as herein defined will naturally occur (D.W. Johnson et al., 1991a). Much remains to be learned about the ways in which cooperative learning activities are processed to produce positive outcomes.

**Cooperative Learning as a Strategy**

Cooperative learning is offered as an effective strategy for improving student achievement, motivation, self-esteem, thinking skills, and higher order learning; as an alternative to ability grouping, remediation, or special education; as a means of improving affective skills such as race relations and acceptance of mainstreamed students and bilingual students; and as a way to prepare students for an increasingly collaborative work force (Slavin, 1991).

While there are many different forms of cooperative learning and structures for its implementation (Kagan, 1994), all appear to involve having students work in small groups or teams to help one another learn academic material. Cooperative learning usually supplements traditional whole-class teacher instruction to provide an opportunity to discuss information or to practice skills or to discover information. It has been used and investigated in most subjects in
grades 2-12 and is increasingly used in college primarily within a collaborative context, which is less structured than cooperative learning paradigms. Significantly, upper secondary and higher education subjects may be representative of student groups that have already been significantly winnowed for academic achievement, motivation, social cohesion, and English language fluency.

While small-scale laboratory research on cooperation dates back to the 1920s (Deutsch, 1949), research on specific applications of cooperative learning to the classroom began in the early 1970s with four research groups, one in Israel and three in the United States in Maryland, Minnesota, and California. The best evaluated of the cooperative models from those include Student Team Learning, Jigsaw, Learning Together, and Group Investigation (Slavin, 1991).

**Student Team Learning Methods**

Student Team Learning (STL) methods and techniques were developed and researched at Johns Hopkins University. More than half of all experimental studies of practical cooperative learning methods involve STL methods. In STL, the tasks for students are focused on learning something as a team more than simply doing something as a team. Three concepts are central to all STL methods: team rewards, individual accountability, and equal opportunities for success. Teams earn rewards if they achieve above a designated criterion. Team success depends on the individual learning of all team members. Therefore, team members must explain concepts to one another and make sure that everyone on the team is prepared for individual assessment to ensure accountability. Students contribute to their team by improving their own individual previous performance. High, average, and low achievers should be equally challenged to do their best, and the contributions of all team members should be valued. The findings of experimental studies indicate that team rewards and individual accountability are necessary elements for producing basic skills achievement (Newmann & Thompson, 1987; Slavin, 1983a).
Four principal STL methods have been developed and researched. Two are general cooperative learning methods adaptable to most subjects and grade levels: Student Teams-Achievement Divisions (STAD) and Teams-Games-Tournament (TGT). The remaining two are comprehensive curriculums designed for use in particular subjects at particular grade levels: Team Assisted Individualization (TAI) for mathematics in Grades 3-6 and Cooperative Integrated Reading and Composition (CIRC) for reading and writing instruction in Grades 3-5. Other significant cooperative learning methods include Jigsaw, Jigsaw II, Learning Together, and Group Investigation.

**Student Teams Achievement Divisions**

With STAD (Slavin, 1978), students are assigned to four-member learning teams that are ideally heterogeneously mixed in performance level, gender, and ethnicity. There is a teacher-presented lesson followed by students working within their teams to make sure that all team members have mastered the lesson. Students then take individual tests on the material with no help from teammates. Individual quiz scores are compared to previous averages with points being awarded individually based on the degree to which a student exceeded his/her own earlier performances. These points are subsequently summed to form a team score. Teams that achieve specific criteria earn rewards. Time involved for the entire process is usually three to five class periods. Student Teams Achievement Divisions has been implemented in a wide variety of subjects from Grade 2 through college and is most appropriate for teaching well-defined objectives with a single correct answer. A study conducted in Lebanon (Ghaith, 2004), concerning the implementation of STAD in an English-as-a Foreign-Language (EFL) classroom, concluded that it may appeal more to interpretive teachers who view education as a process of self-directed problem solving, social development, and personal actualization. Specifically, the
dynamics of cooperative learning maximize opportunities for negotiated meaning, practice of social skills, and development of positive interdependence among learners (Ghaith, 2004).

**Teams Games Tournament**

Teams-Games-Tournament (DeVries & Slavin, 1978; Slavin, 1986) uses the same teacher presentations and teamwork as in STAD but replaces the individual quizzes with weekly tournaments. Students compete with members of other teams at three-person tournament tables with students of similar ability to contribute points to their team scores. A “bumping procedure” changes table assignments to keep the competition fair, and the winner at each tournament table brings the same number of points to his/her team, regardless of which table it is. Therefore, low achievers (competing with other low achievers) and high achievers (competing with other high achievers) have equal opportunities for success (DeVries & Slavin, 1978; Slavin, 1986). As with STAD, high-performing teams earn rewards. TGT is appropriate for the same types of objectives as STAD.

**Team-Assisted Individualization**

Team-Assisted Individualization (TAI) (Slavin, 1985) also uses four-member mixed-ability learning teams but combines cooperative learning with individualized instruction instead of single pace instruction. Whereas STAD and TGT apply to most subjects and grade levels, TAI is structured specifically for mathematics in grades 3 through 6 (or older students not ready for a full algebra course). Students are given a placement test and proceed at their own rates. In general, team-members work on different units. Teammates check each others’ work against answer sheets and help each other with any problems. Final unit tests are taken individually and without team help. Weekly, teachers total the number of units completed by all team members and give team rewards to those teams that exceed a criterion score based on the number of final
tests passed with additional points for perfect papers and completed homework (Slavin, 1985).

This process allows the teacher to spend more class time to present lessons to small groups who are at the same point in the mathematics sequence.

**CIRC and BCIRC**

Cooperative Integrated Reading and Composition, CIRC (Stevens, Madden, Slavin, & Farnish, 1987) is a comprehensive program for teaching reading and writing in the upper elementary grades. According to Stevens et al. (1987), in CIRC, students are assigned to reading groups in the traditional manner. However, all students are assigned to teams composed of two pairs from two different reading groups. While the teacher works with one reading group, the paired students in the other groups are working on a series of activities such as making predictions about the outcome of stories, summarizing stories, writing responses to stories, and practicing spelling, decoding, and vocabulary. If the reading class is not divided into homogeneous reading groups, then all students in the teams work with each other. Students work as a total team to master “main idea” and other comprehension skills. During language arts periods, students write drafts, revise and edit each other’s work, and prepare for “publication” of team books. In most CIRC activities, students follow a sequence of teacher instruction, team practice, team pre-assessments, and quizzes when their teammates have determined they are ready. Certificates are given to teams based on the average performance of all team members on all reading and writing activities. There is little research that evaluates programs designed to increases the Spanish reading performance of students in bilingual programs. Bilingual Cooperative Integrated Reading and Composition (BCIRC) is a Spanish bilingual adaptation of CIRC that has produced good student test results in Texas both before and after transition to English (Slavin & Calderón, 2001).
Success for All

Success for All (SFA) is a comprehensive school wide curriculum model for restructuring elementary schools that focuses on prevention and early, intensive intervention beginning in kindergarten. The program, which advocates for and relies on cooperative learning structures, has been found to be consistently effective on measures of reading, reductions in retention and special education placements, and other outcomes (Slavin, Madden, Dolan, & Wasik, 1994). Success for All adheres to a primary goal that all children will read on grade level by third grade.

Jigsaw and Jigsaw II

Jigsaw (Aronson, Blaney, Stephan, Sikes, & Snapp, 1978) assigns students to a series of six-member teams to work on academic material that has been broken down into sections. Each team member reads his/her section and then meets with members of different teams who have studied the same sections. These form “expert” groups for discussion. Students subsequently return to their teams to teach their teammates about their sections. Because students have to learn about sections other than their own, they must learn from (and be taught by) each other. Slavin (1986) developed a modified version of this process, Jigsaw II, in which students work in four-or five-member teams (as in TGT and STAD). Instead of each student being assigned a different section of a narrative in which to become an expert and then teach other teammates, all students read a common narrative (same section) with each student receiving a topic on which to become an expert. Students with the same topics meet in expert groups to discuss them and then return to their teams to teach their teammates. Students take individual quizzes, resulting in improvement scores and rewards similar to STAD. Jigsaw is primarily used in social studies and other subjects where learning large amounts of material from text is important.
Learning Together

Learning Together (D.W. Johnson & Johnson, 1987) was developed in the mid-west and involves students working together on assigned sheets in four-or-five-member heterogeneous groups. The groups hand in a single sheet group product and receive rewards. This method emphasizes team-building activities prior to working together as well as regular discussions within groups about how well they are working together. Slavin (1985) emphasizes the need for a minimum of at least 4 weeks for a cooperative learning treatment (median time was 10 weeks), but Johnson and Johnson accept a shorter timeframe for Learning Together under certain conditions.

Johnson and colleagues (D. W. Johnson, et al.,1981) conducted a meta-analysis of 122 achievement studies that also measured other outcomes. Their findings supported the effectiveness of cooperative learning for achievement, self-esteem, attitudes toward school, time on task, and attendance. D.W. Johnson and Johnson (1989) later conducted a meta-analysis of over 575 experimental and 100 correlation studies spanning over 90 years with different age subjects in different subject areas and in a variety of settings. A subgroup of 375 studies was reviewed to answer the question of how successful competitive, individualistic, and cooperative efforts were in promoting productivity and achievement. The results revealed higher achievement effects for cooperative learning. Consequently, is not surprising that the National Council of Teachers of Mathematics (1989) and the National Research Council (2002) recommended the adoption of cooperative learning as an instructional method.

Group Investigation

Group Investigation (Sharan & Sharan, 1976) was developed in Israel and is a general classroom organization plan in which students work in small groups using cooperative inquiry,
group discussion, and cooperative planning and projects. Students form their own 2 to 6 member groups and choose subtopics from a unit being studied by the entire class. Within groups, students further subdivide their subtopics into individual tasks in order to prepare group reports. Each group then presents its findings to the entire class.

Outcome evaluations for cooperative learning methods as alternatives to traditional whole-class instruction are extensive. Outcome evaluations are categorized as academic achievement, inter-group relations, mainstreaming, and self-esteem. Slavin (1990) evaluated 70 high-quality studies using various cooperative learning methods as the experimental groups and traditionally taught control groups pursuing the same objectives over periods of at least 4 weeks in regular elementary and secondary schools. Teachers and classes were either randomly assigned to cooperative or control groups or students were matched on pretest achievement level and other factors. There were measured effects for cooperative learning on student achievement for 67 (96%) of these. Twenty-five studies (36%) found no differences, and the control group in one study outperformed the experimental group.

**Group Goals, Individual Accountability, Task Differentiation**

However, the strategic effects of cooperative learning vary considerably according to the particular methods used. Two elements must be present for cooperative learning to be effective, group goals and individual accountability (Slavin 1983a, 1990). In studies of STAD, TGT, TAI, and CIRC, effects on achievement have been consistently positive in 37 of 44 or (84%) of such studies (Slavin, 1988). In contrast, only 4 of 23 studies (17%) lacking group goals and individual accountability revealed positive effects for student achievement (Slavin, 1989). Two of these positive effects were found in studies of Group Investigation in Israel (Sharan & Shachar, 1988) where students in each group were responsible for one unique part of the group’s
overall task with the overall performance of the group being evaluated. Even though there were no specific group rewards, the group evaluation probably served that purpose. Differentiated task structures that promote positive group interdependence both improve group relations and produce achievement (Sharan et al., 1984).

**Elaborated Explanations**

Studies of students’ behaviors within cooperative groups have consistently found that the students who gain most from cooperative work are those who give and receive “elaborated” explanations (Webb, 1985). Conversely, Webb found that giving and receiving answers without explanations was negatively related to achievement gain. Group goals and individual accountability motivate students to give explanations and to take one another’s learning more seriously instead of simply giving answers.

**Cooperative Learning Method**

Vygotsky (1978) supported the notion that spoken language drives understanding. Additionally, providing multiple representations helps to promote cognitive linkage between words and the acquisition of their meanings. Comprehensible input through the use of graphic organizers, building on prior knowledge, modeling meta-cognitive and cognitive strategies such as imagery, building for transfer, recombination, read-alouds, and reciprocal teaching, as well as the use of multiple media sources, including technology, provide an important context for language learning that can help to make instruction more effective. Furthermore, language can be learned only through its use, and the academic language for economics students was utilized contextually in order for concepts to become both better understood and internalized for long-term retrieval as well as higher order thought. Instructional conversation, once they have
acquired a cognitively guided process, provides students with opportunities for extended
dialogue and, therefore, meaning-making (Waxman & Tellez, 2002).

When small groups of diverse learners collaborate on a common task, they must clarify and
negotiate meaning with one another, resulting in complex language input that includes low-level
input (repetition of information), middle-level input (stating new information), and high-level
input (integrating information and creating rationales for its use) (McCloskey, 1990). A student
who is actively engaged in language thought and production is encouraged to reach higher
developmental levels because interaction positively affects developing language at all levels.
Furthermore, cooperative learning activities provide (ESOL) students with the practice for skills
necessary to function in real-life situations, such as using context for meaning, seeking support
from others, and using verbal and nonverbal cues (Alcala, 2000).

Cooperative Learning and Achievement

Cooperative learning methods generally work equally well for all types of students (Slavin,
1991). However, there has been more research on achievement effects for grades 3-9 than for
grades 10-12 or higher education. Cooperative learning methods have been found to be equally
successful in urban, rural, and suburban schools and with students of different ethnic groups,
although a few studies have found particularly positive effects for African-American students
(Slavin & Oickle, 1981). Among the cooperative learning methods, the Student Team Learning
programs have been most extensively researched and most often found to be instructionally
effective. Of 14 studies of STAD and closely related methods, 11 found significantly higher
achievement for this method than for traditional instruction alone. Only two of these studies
found no differences. Substantial differences favoring STAD have been found in social studies
(Allen & VanSickle, 1984), language arts (Slavin & Karweit, 1981), reading comprehension
(Stevens et al., 1987), mathematics (Sherman & Thomas, 1986), and science (Okebukola 1985).

Nine of 11 studies of TGT found similar results (DeVries & Slavin, 1978).

Largest Achievement Effects for Cooperative Learning

The largest achievement effects of Student Team Learning methods have been found in studies of TAI. Five of six studies found significantly greater learning of mathematics computations in TAI than in control classes with only one study finding no differences (Slavin, 1985). Significant gains were also found for mathematics concepts and applications in TAI than for control methods. Three experimental studies of CIRC have found substantial positive effects on scores from standardized tests of reading vocabulary, reading comprehension, language expression, language mechanics, and spelling (Madden, Stevens, & Slavin, 1986; Stevens et al. 1987, 1990). Significantly greater achievement on writing samples was also found favoring the CIRC students in the two studies that assessed writing.

Other than STL methods, the most consistently successful model for increasing student achievement is Group Investigation (Sharan & Sharan, 1976). One study of this method (Sharan et al., 1984) found that it increased the learning of English as a foreign language, while Sharan and Shachar, 1988 found positive effects of Group Investigation on the learning of history and geography. A similar study (Sharan, Hertz-Lazarowitz, & Ackerman, 1980) found positive effects for social studies on higher-level concepts, but the duration was for 3 weeks only. The Learning Together methods (D.W. Johnson & Johnson, 1987) have been found instructionally effective when they include the assignment of group grades based on the average of group members’ individual quiz scores (Humphreys, Johnson, & Johnson, 1982; Yager, Johnson, & Johnson, 1985). Subsequent studies of the original Jigsaw method have not generally supported this method (Moskowitz et al., 1983). However, studies of Jigsaw II, which uses both group
goals and individual accountability, have shown positive effects (Mattingly & VanSickle, 1990; Ziegler, 1981).

Social, Ethnic, and Affective Outcomes

Among the social and affective outcomes of cooperative learning are positive effects for inter-group relations, mainstreaming (academic and social), and self-esteem. Mainstreaming (inclusion) is an opportunity for physically and academically challenged students to take their place in the school and in society. The research on cooperative learning and mainstreaming has focused on the academically challenged student. The use of STAD significantly reduced the degree to which the normal-progress students rejected their mainstreamed classmates and increased the academic achievement and self-esteem of all students (Madden & Slavin, 1983). Improvements in self-esteem have been found for TGT and STAD (Slavin, 1990), for Jigsaw (Blaney, Stephan, Rosenfeld, Aronson, & Sikes, 1977), and for the three methods combined (Slavin & Karweit, 1981). Improvements in self-concept have also been found for TAI (Slavin, Leavey, & Madden, 1984).

Other important educational outcomes include liking school, development of peer norms in favor of doing well academically, feelings of individual control over the student’s own fate in school, and cooperativeness and altruism (Slavin, 1983b; 1990). TGT (DeVries & Slavin, 1978) and STAD (Slavin, 1978; Janke, 1978) have been found to have positive effects on students’ time-on-task. One study found that lower socioeconomic status students (SES) at risk of becoming delinquent who worked in cooperative groups in sixth grade had better attendance, fewer contacts with the police, and higher behavioral ratings by teachers in grades 7-11 than did control students (Hartley, 1976). Another study that implemented forms of cooperative learning beginning in kindergarten and continuing through the fourth grade found that those students who
had been taught cooperatively were significantly more social, friendly, supportive, and democratic as well as more adept at resolving conflicts appropriately (D. Solomon, Watson, Schaps, Battistich, & Solomon, 1990).

Cooperative learning studies have found consistently that students express greater liking for their classmates in general as a result of participating in a cooperative learning method (Slavin 1983b, 1990). This effect becomes even more significant when the students have different ethnic backgrounds. Left alone, ethnic separateness in schools does not diminish naturally over time (Gerard & Miller, 1975). Positive effects on inter-group relations have been found for STAD, TGT, TAI, Jigsaw, Learning Together, and Group Investigation models (Slavin, 1985). The U.S. studies of cooperative learning and inter-group relations involved black, white, and (in a few cases) Mexican-American students. The Israeli studies involved Middle Eastern and Western students.

**Importance of Cooperative Learning Training for Implementation**

The research consensus reveals the usefulness of cooperative learning for improving such diverse outcomes as student achievement at a variety of grade levels and in many subjects, if achievement refers to simple concepts and to simple application problems (Davidson, 1985). Inter-group relations and relationships between mainstreamed and normal-progress students, as well as student self-esteem, also appear to be positively affected by the appropriate use of cooperative learning. Inasmuch as cooperative learning has been studied, researched, and implemented on a widespread basis (Slavin, 1989), these learning methods appear to be practical and attractive to a wide variety of teachers and school districts for a variety of reasons. Cooperative learning has been proposed as a solution to a staggering array of educational problems such as truancy, graduation rates, motivation, achievement, social integration, self-
esteem, and mainstreaming. While there is considerable evidence that cooperative learning can, under certain circumstances, help to ameliorate these problems, it should not be considered the case that all forms of cooperative learning are so instructionally effective enough such as to preclude the use of other helpful interventions. Similarly, a good cooperative learning method that is poorly implemented is no panacea either. In order to implement cooperative learning proficiently and successfully, D.W. Johnson and Johnson (1992) indicated that teachers need extensive and solid training including approximately 20-30 hours of instruction, 15-20 hours of demonstration, and 10-15 hours of coaching sessions. Prior teacher training for cooperative learning instruction, as well as prior student team building strategies for their respective cooperative learning groups, is stressed as a necessary precursor for successful cooperative learning outcomes (D.W. Johnson & Johnson, 1987).

The use of reliable rubrics may allow researchers and evaluators to assess the products of cooperative learning. By holding groups accountable for their products, the teacher may do much to ensure the kind of group performance that will lead to individual learning. Teachers can and should assess group products and provide feedback based on the evaluation criteria clearly presented to the groups prior to their activity. This provides accountability at the classroom level where formative assessment directly supports the learning process. Teachers should share the task of evaluation with students. Cooperative learning should provide students with many opportunities to practice self-evaluation in order to become self-critical, an essential condition for doing well in groups. The ability to self-evaluate reflectively enables people to know when to think well of themselves and, therefore, to know when it is appropriate to alter their behavior (Strom, Strom, & Bernard, 1989).
Much of the cooperative learning research has found that group goals, individual accountability, and task differentiation are necessary components for positive achievement effects for cooperative learning. Without group goals, students are not as likely to engage in the elaborate explanations that have been found to be essential to the achievement effects of cooperative learning (Webb, 1985). Group goals may also help students overcome their reluctance to ask for help or to provide help to one another. Additionally, without individual accountability, one or two group members may do all of the work, and/or group members perceived to be low achievers may tend to be ignored if they contribute ideas or ask for help. Task differentiation that provides for positive group interdependence improves group relations and achievement (Sharan et al., 1984).

While cooperative learning is widely recommended as a strategy for creating more equity in heterogeneous classrooms, small groups may also develop status orders based on perceived differences in academic status such that high-status students will interact more frequently than low-status students (Cohen, 1984). Moreover, these differences in interaction can lead to differences in learning outcomes--that is, those who talk more probably learn more (Cohen, 1984). Assigning competence to low-status students through a differentiated “multiple ability treatment” (students within a group are assigned differentiated tasks) makes students aware of different multiple intellectual abilities required by collective tasks and may also help to reduce the problem of status differences (Cohen, 1986). Cohen (1994) refers to this comprehensive instructional process within cooperative learning as “Complex Instruction,” which is contingent less on inter-group competition and rewards.

When schools adopt cooperative learning methods to be implemented for the primary purpose of increasing student achievement, they should consider the research. While future research may
identify effective forms of cooperative learning that do not require group goals, individual accountability, and task differentiation, there is no reason to expect that simply because students work together or are rewarded on a single group product or task, that they are necessarily processing information at a higher cognitive level or that they will learn more than students who are taught with traditional (individually assessed/competitive) whole-class methods. Therefore, one could reasonably argue that traditional classroom competitiveness may not need to be reduced as much as high quality cooperative learning needs to be increased.

Cooperative Learning Effectiveness: Upper Grade Levels and Higher Education

There is some controversy raised among various researchers as to whether cooperative learning is effective at all grade levels. Newmann and Thompson (1987) question the effectiveness of cooperative learning in senior high school grades 10-12. While there is much evidence to support the effectiveness for grades 2-9, there have been fewer studies for grades 10-12. There are also fewer studies at the higher education level with less consistent results than those for elementary and junior high schools. However, there are some studies that have found positive effects for achievement in senior high school and college settings (Sherman & Thomas, 1986).

Most of the research on the effects of cooperative learning has been conducted in elementary and secondary schools, and the impact of cooperative learning methods is sometimes different when used with undergraduates. For example, the use of group incentives has been found to be crucial to the success of cooperative learning in elementary schools (Slavin, 1983b, 1991; Webb, 1992). Yet group incentives do not appear to influence achievement in higher education cooperative learning studies as effectively (Baer & Baer, 1996; Watson & Marshall, 1995). Self-
selected undergraduate cooperative learning groups have been found to achieve less than teacher-selected groups, whether homogeneously or heterogeneously grouped (Baer & Baer, 1996).

According to Bossert (1988), categories of group study cooperative learning methods that include group rewards which are contingent on individual performance but may not include task specialization are Student Team Learning, TGT, STAD, and TAI (Math). One, Jigsaw II, is contingent on individual performance but also includes task specialization in which a team member rotates from group to group in order to become an expert on the answer to one specific question, which is then shared with his or her own group. Large amounts of information may be easily broken down into different study groups, which specialize in one portion of the information to be learned. Visiting members from other groups learn the expert information from the study group and then share it with their own group. A cooperative learning method that does not provide for group reward and is not contingent on individual performance and does not require task specialization is Learning Together. Jigsaw I, Group Intervention, and Complex Instruction do not provide for group reward and are not contingent on individual performance but do require task specialization.

**Homogeneous and Heterogeneous Grouping**

In fact, most of the research on effective cooperative learning methods over the past three decades has centered on heterogeneous grouping (Slavin & Karweit, 1981; Watson & Marshall, 1995; Woolfolk, 1998). For this reason, there is little evidence of the effectiveness of heterogeneous cooperative learning in comparison to homogeneous grouping. What little research that has been conducted comparatively at the elementary and secondary levels suggests a pattern similar to that found in non-cooperative learning settings: high achievers do much better in homogeneous groups. Among average and low achievers, there is little difference
between students in heterogeneous or homogeneous groups. However, high achievers frequently express a poor attitude toward group work (Loveless, 1999; Sternberg & Willard, 2002).

The process of homogeneous grouping begins early. Children are typically ability grouped for reading by first grade and for mathematics by third grade. Therefore, throughout grades 1-12 students are already homogeneously grouped according to academic ability to some degree. Additionally, grouping criteria for reading and mathematics frequently serve as the criteria for grouping students in other academic content areas, such as social studies and science. Inasmuch as college and professional school entrance requirements continue the winnowing/selection process at a higher level, there might be very few academic classes for which heterogeneous academic ability grouping is truly heterogeneous at any level of the educational process, with this likelihood being most probable at the upper levels.

There may be no reason why cooperative learning groups could not be homogeneous with respect to academic achievement and heterogeneous with respect to other student characteristics, including gender, race, or ethnicity. In one college study, homogeneous grouping resulted in significant achievement gains among average and high-achieving students, while doing “no harm” to the achievement of low-achieving students (Halpern, 2000). However, grouping students for instruction based solely on past achievement is often a controversial practice (Loveless, 1999).

A growing body of research supports the use of cooperative learning in higher education (D.W. Johnson, et al.,1991a; McKeachie, 1999). These studies suggest that students taught with cooperative learning methods exhibit higher academic achievement, greater persistence through graduation, better high-level reasoning and critical thinking skills, deeper understanding of learned material, more on-task and less disruptive behavior in class, lower levels of anxiety and
stress, greater intrinsic motivation to learn and to achieve, greater ability to view situations from
the perspective of others, more positive and supportive relationships with peers, more positive
attitudes toward subject areas, and higher self-esteem (Felder & Brent, 1994).

**Peer Interaction, Instructional Processes, Cognitive Processes**

While much optimism exists about the efficacy of cooperative learning techniques, little is
known about the ways in which they produce their positive effects. A variety of mediating
mechanisms are possible such as student cognition; motivation; self-esteem and ability
conceptions; social-interpersonal, and self-perception; group processing; and peer tutoring.
However, only a few studies have begun to research the various interactive processes that very
likely constitute a vital part of cooperative learning. Furthermore, research on cooperative
learning is not well linked to the larger body of research on the effects of instructional processes,
and the appropriate place of cooperative learning methods in the classroom has not been
established. It is important to investigate and to understand how cooperative learning methods
and other forms of group relations in classrooms jointly operate to shape the behavioral, social,
and academic perceptions of students.

Slavin has not examined the nature of peer influence in his STL methods. Sharan and
associates (1984) do not describe the ways study groups select problems, choose different work
roles, or develop participation norms. The Johnsons structure situations that may entail
constructive controversy, but they have not catalogued the ways in which students express and
resolve conflict within their groups (D.W. Johnson & Johnson, 1992). It is important to closely
observe student-to-student interactions. Three areas of study from instructional research for
cooperative learning seem significant: peer interactions, cognitive processes of students, and
instructional analysis (Bossert, 1988).
Working together on an academic task and peer tutoring are essential cooperative techniques. Cooperative learning studies have shown that peer interaction can facilitate productive study and learning. Other studies also seem to demonstrate that peer tutoring benefits both the tutor and the person receiving the tutoring (Cohen, Kulik, & Kulik, 1982). However, few studies have documented the nature or quality of peer academic interactions in small cooperative groups. Swing and Peterson (1982) found that receiving explanations from peers does not always improve learning. Often, this type of peer teaching benefits the child who is the ‘teacher’ more than the child who is the ‘student.’ Consequently, receiving help from a fellow student may or may not improve a child’s learning (Peterson, Janicki, & Swing, 1981). As any educator understands, many factors are involved in how one person is able to help another to process information effectively. Among these are student motivation, cognitive ability, self-perception, and inter-and intra-personal skills.

**Socio-Economic Status**

Cazden (1986) hypothesizes that socioeconomic status (SES) differences among children may account for the variance in ability to reproduce adult teaching patterns. The quality of interaction and elaboration varies among groups and individuals. This suggests that cooperative learning methods that instruct students to help one another or that include helping roles may increase the quality of peer interaction, but they may not necessarily guarantee that children know how to give and to receive assistance that actually enhances individual learning (Cohen, 1986). Additionally, even if students have a prescribed process for interaction in small cooperative groups, other factors may shape their participation. Research indicates that various status characteristics can depress the involvement of some students in group work (Cohen, 1984). When status characteristics such as race, gender, or prior achievement become important, higher
status students are more active and influential in cooperative learning group work than lower status students. Therefore, higher status students may show higher levels of achievement (Cohen, 1984). Inasmuch as status also affects expectations that students have of themselves and their peers, it is possible that cooperative activities may simultaneously foster ethnic stereotyping and cross-ethnic friendliness. Increased contact may reduce interpersonal separation as well as reinforce perceptions of ability or status differences. Cohen (1986) suggests that cooperative methods must provide differentiated task structures that prescribe independent roles for students in order to counteract the self-selected participation of students in cooperative group work.

The research has not identified what types of cognitive processes are facilitated by peer interaction or in what ways these may relate to student learning. Furthermore, most of the research has occurred in classrooms that are not structured specifically for cooperative learning. A study by Wittrock (1986) suggests two important issues pertaining to cooperative learning methods: the types of cognitive processing that affect achievement and the ways in which students develop perceptions of the purposes for instruction. Research reveals that students selectively attend to and process (prioritize) information they encounter in the classroom, and they appear to use different strategies for analysis, synthesis, rehearsal, and encoding this information. Therefore, these differences in attention and engagement, as well as in cognitive strategies, influence their learning. Furthermore, how students think they are supposed to accomplish their academic tasks may also affect their performance.

Students who learn specific group processing strategies, such as relating information to prior knowledge, repeating or reviewing and summarizing information, and checking information with others, score higher on skills-specific tests. Cognitively linking information among lessons also correlates positively with test performance (Peterson, Swing, Stark, & Waas, 1984). Three
important techniques that students can be trained to use that may enhance their learning are learning how to orient their attention to important parts of a lesson, using operating skills such as comparing information, and consolidating information into categories (Winne & Marx, 1983). Other techniques involve activating meta-cognitive skills that improve learning and comprehension (Wittrock, 1986). In other words, information can be adeptly prioritized, categorized, and cognitively related to prior knowledge.

Teachers attempt to influence the ways in which students cognitively process information, and students respond to individually perceived instructional events by using cognitive strategies that they activate automatically or as a result of some amount of decision making (Winne & Marx, 1983). Therefore, students who are actively engaged in an instructional task may or may not attend to the appropriate information or use adequate cognitive strategies. Research on cooperative learning methods has not taken this fully into account. While some cooperative learning methods build in opportunities for students to use effective cognitive strategies (Jigsaw, Group Investigation and STAD—oral rehearsal and debate methods), little is known about what actually goes on in small, heterogeneous cooperative learning groups that stimulates the overt use of appropriate cognitive processes. Furthermore, less is known about how students in cooperative groups conceptualize their task(s). Students in the same group may have different conceptions of the academic task or of successful accomplishment. Additionally, these conceptions do not always match the conceptions of the instructor (Filby & Barnett, 1982).

How students interpret and act on what they perceive they are to learn as well as how best to learn it may offer some insight into how students may think about/through academic tasks (Doyle, 1983). Students actively attempt to discern the nature of a lesson or what procedures and answers are required by the teacher. Understanding of the academic task shapes how students
will direct their attention to aspects of the content and to specific ways of processing information. According to Doyle, classroom tasks fall into four categories: memory, procedural, opinion, and comprehension. Doyle concludes that memory tasks are the least ambiguous and comprehension tasks are the most ambiguous. Therefore, students will often attempt to minimize overall task ambiguity by turning comprehension tasks into memory, procedural, or opinion work. Task ambiguity may be clarified if the instructor increases the explicitness of the instructions or redefines the task itself.

Many cooperative learning methods such as STAD, TGT, TAI, and Jigsaw systematically help students lessen the ambiguity of academic work because they offer a pre-specified sequence of actions that students must follow as they study a lesson. This may promote task engagement by decreasing task ambiguity anxiety. Group Investigation and Learning Together do not provide for this. It is possible that the more prescriptive the process, the more effectively convergent thinking types of tasks are monitored and measured.

Some evidence suggests that the benefits of cooperative learning methods may be due to more than supportive peer interactions. At least part of the overall effect of such methods may result from the way in which lessons are organized, delivered, and interpreted. Effective instructional practices (highly structured) have proven relatively successful over less structured methods for ability-grouped teaching (Slavin & Karweit, 1985). The precise directions typically employed in CL for teachers in the use of instructional strategies, explicit feedback, and classroom management, as well as the well-specified routine for students, may have produced the achievement effects instead of the team rewards or peer tutoring aspects of cooperative learning. Research on cooperative methods has not been examined as carefully for teaching effects. Most quantitative research reports are often unclear about the nature of instructions offered to control
group teachers or about their specific instructional system. Therefore, cooperative learning
treatments may be more or less effective regarding achievement differences that could actually
be caused by differences in instructional quality and not as much from the results of cooperative
learning processes (Barr & Dreeben, 1983). While the benefits of cooperative learning strategies
are well established, greater attention should to be given to understanding the interactions among
variables that help to produce these benefits.

**Collective Action, Individual Goals, and Recognition**

The benefits of cooperative learning appear to result from the awareness of an individual that
collective actions are necessary for individual goal attainment (D. Johnson & Johnson, 1975).
Pepitone (1985) points out that exactly how individual goals may be transformed into a group
goal remains an, as yet, unresolved conceptual issue.

Most developers of cooperative activities are able to manipulate cooperative goal structures to
some degree by creating reward structures. Even when they are not formally linked to a group’s
product, rewards and recognition offered by the teacher for group processes may still constitute
contingent assessments upon which students may compare their performances to those of their
classmates. The role of teacher-pupil interaction may be crucial, as well as how students view
themselves, each other, and the reward structures under various cooperative conditions
(R. Johnson, Johnson, & Stanne, 1985).

Certain competitive and status aspects of existing cooperative learning strategies may not
sustain long-term benefits for some low-achieving students, especially if those students are often
systematically relegated to the lower level in work groups. Furthermore, some of the
consequences of cooperative learning activities may result from how students perceive the
differences among classroom tasks. Students may not change their usual work strategies unless
they sense a significant change in the importance of the task structure. In that instance, specific cooperative learning interventions may help to initiate *shifts in attention* that can help students recalibrate work strategies away from ineffective strategies. Therefore, an instructional program built entirely on cooperative learning strategies may not engender such changes due to the likelihood of structural similarity among lessons. The cumulative effect of participation in different academic activities is important for understanding the use of cooperative learning methods in the classroom. It may be that the most effective case for the use of cooperative learning as a cognitive strategy is the extent to which it enables students to make connections with prior knowledge by completing elaborated learning tasks that permit them to reveal, to activate, and to structure their own personalized meta-cognitive inputs and processes efficiently and effectively. This type of *divergent* thinking about cooperative tasks is highly desirable, especially for problem-solving and critical thinking, but it is also more difficult to measure.

The three main parameters used to describe cooperative learning methods--grouping, task structure, and reward structure--also help to characterize the overall system of instructional activities in a classroom. However, the level of analysis shifts from the internal dynamics of each academic task to the relationship among various instructional activities. Marshall and Weinstein (1984) argue that classroom research must examine the *interaction among variables* that typify classroom structures and processes because the overall effect of each structure or process lies in its interaction with other structures and processes. Whole-class and individual activities on a variety of tasks may be enhanced or diminished by the relationship to other classroom activities. Therefore, the configuration of activities within the classroom, as well as the internal dynamics within any specific cooperative learning group activity, is important.
Rosenholtz and Simpson (1984) conclude that academic ability is a social construction— it is influenced by the interrelationship between the structure of the classroom activities and how students learn about their own performances. By manipulating the interrelationships among grouping, task structure, and reward structure, cooperative learning methods have shown that lesson formats shape task engagement, interaction, and, consequently, the learning of students. However, because these studies typically examine only a single lesson or subject area, they have not assessed in what ways other task forms may either enhance or diminish the long-term effects of cooperative lessons. Therefore, research needs to address the relationship between learning and the configuration of classroom tasks.

Theories about the effects of cooperative learning methods focus on how students are motivated to engage in certain tasks, including peer interactions. Motivational properties within a lesson format are also important. Equally important are factors such as cognitive processing, helping behavior, and instructional variables, as well as interrelationships among various activities that develop as normal components of the entire school experience of students. Cooperative learning methods, as well as instructional practices, must consider intrapersonal learning processes that occur within different instructional groups and interpersonal learning that results from the cumulative effect of the participation of students in various groups (Bossert, 1988).

Cooperative Learning Literature Conclusions

Much cooperative learning research has been conducted with elementary and lower secondary school students. There is some suggestion among various researchers that homogeneous ability grouping may be more beneficial for gifted students as well as for higher education students who may function more effectively academically within
collaborative/associative learning structures. In this instance, heterogeneous grouping may be used alternately and more appropriately to promote affective social outcomes. There may also be those rare self-actualized students with a highly developed sense of academic meta-cognition who simply learn best or prefer to study/investigate on their own or whose learning style is so well synchronized with the teaching style of the instructor that individual learning becomes a relatively effortless, efficient, and effective process.

While the research concerning acknowledgement of and teaching to multiple types of intelligence and learning styles is certainly compelling for cooperative learning, the available research on cooperative learning in these areas probably generates more questions than it answers in that regard. In fact, there may be so many variable forces (academic, behavioral, and social) at work in a classroom at any given time with regard to learning, as to make it difficult for most researchers to quantify specific results without setting up highly structured preconditions by either attempting to mitigate for or even remove some of the variables. While this type of manipulation with regard to research design methodology might produce greater or more obvious effects, it could also prove to be impractical procedurally, if not ethically questionable, concerning data collection categories and, therefore, outcomes. Studies that could effectively compare alternative forms of cooperative learning in which most factors (other than the ones being studied) could be held constant, might help to clarify differences in measure, duration, subjects and other factors that might explain different outcomes.

Even though much of the cooperative learning literature methods suggest that the grade-competitive atmosphere of most traditional classrooms can create a negative learning environment for many students, the most successful research models for cooperative learning stress the necessity for an incentive/reward system of some kind (even intrinsic) for individual
and/or team accountability for a specifically structured task. The point is well made that cooperative learning should produce the responsibility for the result of each group member learning something specific on which they are assessed individually and as a team. Understanding exactly how this occurs within cooperative group learning may be a significantly more complex undertaking.

Over the past few decades, the use of standardized assessments has shifted from identifying areas of needed change to managing and aligning students and schools according to narrowly defined system goals (Rothman, 1995). Consequently, such tests are high stakes due to the consequences that are tied primarily to the performance of students. High stakes tests are mandated for students with the results simultaneously used to make inferences, decisions, or characterizations about students and the systems in which they are educated (Smith & Fey, 2000).

The larger body of the available research on cooperative learning methods suggests that cooperative learning appears to be most effective for well-defined, single-answer, convergent question activities and for students who do not lose patience with those who may need frequent re-teaching in order to comprehend specific information. This might actually be most appropriate for the current type of high stakes testing format. However, very little of the literature deals with the need for appropriate cooperative learning methods that specifically target and promote higher order thinking. One might assume that the “two heads are better than one” logic embodied within cooperative learning could lend itself naturally as a model for brainstorming, application, analysis, synthesis, evaluation, reflection, critical thinking, and thoughtful problem solving through elaborative processes. Further research on the use of
cooperative learning groups for the effective promotion of higher order thinking skills would be useful.

Inasmuch as most high stakes testing is currently based on the ability to respond correctly to one multiple choice question with one specific “best” answer, cooperative learning models/methods could prove to be effective in raising student test scores based on that definition of achievement. One university study of a social studies cooperative learning procedure for test review found that cooperative learning test review teams are most effective immediately after instructional activities are completed and just before students are tested (Steinbrink & Jones, 1993). The use of focused study items and skill-level tasks developed by the instructor, who becomes the academic “coach” within a cooperative learning structure, resulted in improved test scores.

Although a variety of cooperative learning research questions have been studied rigorously, and specific cooperative learning models have been reliably validated over time, there are still questions that remain to be answered (Slavin, 1995). Some of these include the effect of structuring the interactions among students in groups by teaching specific learning strategies, such as prediction, question generation, and summarization (Meloth & Deering, 1992). Another question involves the use of highly structured scripted dyadic methods with and without group rewards (Dansereau, 1988). While most of the evidence overwhelmingly supports it, are there some useful kinds of cooperative learning tasks that do not always require group goals and individual accountability? Are most cooperative learning tasks, as Cohen (1994) suggests, better suited for lower-level skills than for higher-level skills? Are the cooperative learning benefits of group rewards and individual accountability primarily indirect through the motivation of specific behaviors (Berg, 1993)? Could the benefits of the process of cooperative learning activities in
which there is no single correct answer be that students benefit mostly by hearing others as they think aloud (Bershon, 1992)? Could a hybrid combination of group rewards coupled with learning strategy training, such as with CIRC, consistently produce more favorable outcomes than either one alone (Fantuzzo, King, & Heller, 1992)? How does the use of cooperative learning curricular program material with instructor adaptations affect cooperative learning implementation and therefore, outcomes? What kinds of cooperative learning professional development are most likely to result in high quality, sustained use (Joyce, Hersh, & McKibbin, 1983)?

**Gaps in the Literature**

Importantly, more research on cooperative learning needs to take place at upper secondary and higher education levels. If cooperative learning is useful at all as a learning strategy, and a great body of longitudinal research indicates that it is, then it must be studied extensively to understand how and why and under what conditions it may be employed to the greatest benefit of diverse students. When all students can learn not only the required curricular content but are also cognitively activated to become better thinkers and problem solvers and more proficient standardized test takers in the process, then they are enabled to advance to their next best educational level and, thereby, become empowered to attain their fullest educational and personal potential. When individuals are so enabled, then society as a whole is ultimately well served.

**Conceptual and Theoretical Framework**

An epistemology deals with the nature of knowledge or how we know what we know. It is the theory of knowledge embedded in the theoretical perspective and in the methodology. Constructivism is defined as the view that all knowledge and meaningful reality is contingent
upon human practices being constructed in and out of interaction between human beings and their world and is therefore, developed and transmitted within a social context (Crotty, 1998).

Ethnography is a kind of research based on the intensive study of a specific social group by observing the group in its normal setting. Ethnographers often supplement observations with in-depth interviews (Denzin, 1997). Critical social research seeks insights into the social world in order to help people change oppressive conditions. Consequently, critical ethnography observes groups in settings with a view toward alleviating oppressive circumstances (Crotty, 1998). Max Weber (cited in Crotty, 1998, p. 69), defines the study of groups as a science that attempts the interpretive understanding of social discourse, action, or order to arrive at a causal explanation of its course and effects. Therefore, according to Weber (1962), an understanding of causation must be interpreted through an understanding of social action.

Symbolic Interactionism is a theoretical perspective that rests upon a constructionist epistemology. It is an interpretivist approach to social research drawn primarily from pragmatist philosopher and social psychologist George Herbert Mead (1863-1931). According to Mead (cited in Crotty, 1998, p. 62), a person is a personality because he belongs to a community and takes on the roles with others within the institutions of that community. We see ourselves as social objects through adopting the standpoint of others. While social constructionist and interpretive approaches are varied, they share the premise that all social reality is constructed or created by social actors. In methodology, symbolic interactionism informs ethnography (from American cultural anthropologist Franz Boas), and grounded theory (Crotty, 1998). These approaches require a focus on interaction.

Symbolic interactionism is based on three premises: (1) humans act toward things based on the meanings those things have for them, (2) the meanings of things arise out of social
interaction, and (3) meanings are created (and changed) through a process of interpretation (Blumer, 1969, cited in Crotty, 1998 p. 72). There are implications inherent within this process for qualitative research based on social constructions, social meaning making, and therefore, human interpretations.

Action research is a systematic observation of teaching practice. The goal is to understand what is happening in a particular classroom or school. It may be defined as the process of studying a real school or classroom situation in order to understand and to improve the quality of actions or instruction (Henson, 1996; McTaggart, 1997; Schmuck, 1997). It is a systematic and orderly way for teachers to observe their practice or to explore a problem and a possible course of action (Dinkelman, 1997). Action research is a type of inquiry that is preplanned, organized, and shared with others (Foshy, 1998; Tomlinson, 1995).

Kurt Lewin is considered to be the intellectual father of contemporary theories of applied behavioral science, action research, and planned change. The resolution of social conflict, particularly that of minority or disadvantaged groups, was the primary concern of Lewin, a Jew who left Nazi Germany in 1933 (Marrow, 1969). The basis of this concern was a strong belief that only the permeation of democratic values into all facets of society could prevent the worst extremes in social conflict. Lewin viewed democracy, and the spread of democratic values, as the primary bulwark against authoritarianism and despotism. To that end, Lewin believed that change in culture requires a change in leadership forms in all walks of life, especially from those in positions of power. Lewin viewed action research as a tool—a means to that end (Burnes, 2004). He viewed group behavior as an intricate set of symbolic interactions and forces that affect group structures and modify individual behavior. Therefore, individual behavior becomes a function of the group environment or the field, or group, dynamics. The term action research
was coined by Lewin in 1946 to offer help to organizations, institutions, and individuals in the field of group relations, which is referred to as field theory (Back, 1992).

While some types of quantitative methodologies are useful for such purposes, action research is not designed per se to prove or to disprove hypotheses or to produce data to be generalized to larger populations (A. P. Johnson, 2005). Therefore, quantitative methodologies in action research are employed basically to inform and to provide a picture of what is occurring in a particular situation.

There are five essential steps to the action research process: (1) ask a question, identify a problem, or define an area of exploration; (2) decide what data to collect, in what ways to collect it and how frequently; (3) collect and analyze the data; (4) describe in what ways the research findings may by utilized and applied by creating a plan of action; (5) report findings; and position the findings or the question within a theoretical context within a literature review. Action research is a recursive process and does not always proceed in a linear fashion (Patterson & Shannon, 1993). Therefore, the above steps may be repeated in differing orders.

Action research may employ triangulation and multiple methods and thereby strengthen and enhance the validity of inquiry by combining researchers, perspectives, methods, and data, including both qualitative and quantitative approaches as needed. Reflexivity reminds the qualitative researcher to attend to cultural, political, social, linguistic, and ideological origins of personal perspectives as well as those of others (Patton, 2002).

Summary

This chapter contains a review of literature that explored cooperative learning, including group structures and methods, various studies, elementary, secondary, and higher education research, and, specifically, Student Team Learning, with regard to student achievement, social,
ethnic, and affective outcomes. The complexity of cooperative learning is described, as well as gaps in the literature.

A conceptual and theoretical framework is included that describes mixed methods, constructivism, and critical ethnography, the foundation upon which this case study was based.
CHAPTER 3

METHODS AND PROCEDURES

This chapter describes the design of this narrative case study, including the research questions, population, site, subjectivities statement, assumptions and limitations, and student risk. Overviews of the CL STAD-D method, process, and data collection for this 12-week case study are also presented.

The conceptual framework for this descriptive case study is based primarily on a constructivist epistemology, a theoretical perspective that is both critical and interpretive, a methodology that is informed by ethnography and quasi-action research, and case study triangulated mixed methods that include observation of groups within the classroom setting including descriptive data, (open-ended questionnaires, focus group interviews, teacher interviews), quiz and test score results including pretest and EOCT, and thematic comparative analysis (Patton, 2002). This study is quasi-action research in that the researcher was not the teacher. However, the teacher, Mrs. Jones, participated in this research process and the resulting case study with the purpose of enhancing her teaching methods in order to improve student learning.

This case study included triangulation in order to facilitate validity in the form of quantitative quiz and EOCT standardized test score data, qualitative data analysis from the group work based on student surveys, focus group interviews of students based on cooperative learning differentiated roles, and interviews with teachers who have utilized cooperative learning strategies at this school.
Research Questions

How did the use of a cooperative learning strategy influence the learning of economics concepts by a class of diverse high school seniors? How and why would such effects have occurred?

Case Study

This project is reported in the form of a descriptive case study. It represents a particular activity, the use of a cooperative learning strategy, studied in its natural context in a fourth period block economics class of diverse students during a 12-week period in the Fall of 2007 in a northwest Georgia high school.

It was hoped that the results of the EOCT economics scores would be positively affected by the use of the STAD-D cooperative learning strategy by a highly qualified teacher who had received specialized training for using CL with diverse students. But, more importantly, this case study was viewed as an opportunity to observe the overt informative verbal and social interaction of students within the individual groups in order to provide insights into the “how” and “why” of the research questions: How did the use of a cooperative learning strategy influence the learning of economics concepts by a class of diverse high school seniors? How and why would such effects have occurred?

Population Research Site and Background

This research took place at a public high school in Northwest Georgia with an enrollment of 1412 students (606 Hispanic, 34 African-American, 37 multi-racial, 10 Asian and 744 White/non-Hispanic). Of this student population, over 153 were listed as economically disadvantaged, and 57% were receiving free and reduced lunch. The current dropout rate for this
high school is 30%. However, during most of the 33 years that this high school has existed, the dropout rate hovered around 40% to 50%, which was based on the number of graduating seniors compared with their numbers as entering freshmen. A convenience sample of diverse twelfth grade tech prep students participated in this 12-week study.

**Subjectivities Statement**

Because the researcher previously taught for 30 years at this high school, she would subjectively be considered an insider. The researcher holds Secondary Social Studies and ESOL certification and would be considered an advocate for Hispanic students and for cooperative learning as a teaching strategy.

**Assumptions**

This study assumed the following:

1. Students gave a true and accurate report of their feelings, comments, and concerns on the questionnaires and in the CL STAD-D focus groups.
2. School data for student population enrollment were accurate and up to date. The permanent records for each student in the study were accurate and up to date.
3. The time of day of the class was not a factor in student performance.
4. Ten weeks was sufficient time to observe these students.

**Limitations**

The following limitations in the study were recognized by the investigator:

1. This sample was one classroom of senior level students (27 of 232) seniors and (27 of 1412) of the entire student body.
2. The findings and conclusions reached in this study are limited inasmuch as the results cannot be generalized to diverse 12th grade economics students in other schools.

Research Risk

The research risk for the students in this case study would be that the cooperative learning experience either produces no positive outcome in test results or, worse, produces lower test results. Certainly, there could be those students who simply prefer not to work cooperatively and, therefore, resist the effort both intellectually and behaviorally. It was the intent of this research to do no harm. There was a follow-up as to whether all of the students graduated in 2008.

From a critical point of view, it could be reasonably argued that high stakes testing may actually produce the overall effect of “culling kids out” rather than “catching kids up.” As schools struggle to make Adequate Yearly Progress (AYP) based on these high stakes tests and other criteria, one has to wonder if some will tend to counsel marginal students to transfer to alternative educational programs when these exist. The researcher also teaches at such a school with a compensatory program at night, and the enrollment there has increased dramatically in recent years.

The worst case scenario would be a self-fulfilling prophecy in which more students either fail these high stakes tests or are forced to seek other educational venues (alternative schools, GED, for instance), or leave school altogether, because they believe that they will not be able to pass EOCTs and, therefore, not graduate in a timely manner. This can always occur despite the best efforts of educators. Because these mandated testing programs are frequently not funded with the appropriate necessary resources for true remediation, especially for those not currently completely fluent in English, one has to wonder who will be left behind. This investigator did not want that fate to apply to these students. Given that they were already high school seniors at
the time of this study, it would have been more probable than not that these students should have been able to graduate on time.

**Mixed Methods**

From a quasi-experimental standpoint, this study is considered mixed methods in that it contains a pretest, economics content quiz data, team score data, and a state mandated End-of-Course Test (EOCT) (Patton, 2002). A pretest (a released 2004 economics EOCT) was administered to each student in the study near the beginning of the semester of the economics class. The same pretest was re-administered at approximately the midpoint of the study. Each of these scores was used as base values for the STAD-D individual scores during the first and second rounds of the. Students in this senior economics class were taught using whole class instruction and a specific cooperative learning method known as STAD (Slavin, 1978), which was preceded by team building activities. The team building activities included introduction interviews, choosing the team name, and working together to answer content and vocabulary questions posed during a game. All teams participated in these ice-breakers. This study augmented the STAD procedure with differentiated roles within each team, referred to in this study as STAD-D. By differentiating the roles within each group, it was hoped that all team members would share responsibility for participation and team performance.

Students provided qualitative information by responding to a learning styles survey, numerous open-ended questions concerning how they learn best, including their attitude about economics, and by providing demographic information and group member rating sheets. Students also participated in an audio-recorded focus group discussion concerning their specific differentiated group roles. The researcher was an observer. Additionally, Ms. Jones, the
instructor, and other faculty at this school who have been trained in and used the CL strategy were interviewed.

The researcher had access to all EOCT scores, as well as other student records, and is still employed by this school system on a part-time basis at an alternative high school and during the summer school session.

**Procedure**

In this mixed methods, quasi-experimental, case study, students took an economics EOCT pretest (a released economics test by the Georgia State Department of Education from a previous year) and the current state EOCT in economics, which was administered in early December at the end of the semester. The pretest was used to determine a base score for each student in the STAD-D cooperative learning class, which was then compared with a subject matter test score (for instance, over supply and demand) for the first three quizzes in order to produce individual improvement scores. The second pre-test became the base score for the second round of three quizzes. The base score for the third round of two quizzes was determined by an average of the quizzes from the second round of quizzes. This occurred for three rounds, and then a new base score (test average) was determined for each student. From these scores, individual improvement scores were derived for each team.

The researcher observed the CL STAD-D class an average of three days per week (Tuesday, Thursday, and, occasionally, on Friday) from 2:00 to 3:30 P.M. While the numbers changed slightly due to enrollment shifts, 27 students returned the IRB consent forms signed by themselves (some were 18 years old) or their parents permitting them to participate in this study. The consent forms were printed in both English and Spanish.
All students were administered a learning styles inventory, and biographical information was obtained from each of the students. Additionally, all students responded to open-ended questionnaires. Importantly, the researcher observed students within the CL STAD-D groups as they were assigned group roles and as they subsequently worked together processing and completing activities and worksheet information in their CL STAD-D practice review sessions. Students from each of the two different CL STAD-D groupings during the 12-week period participated in an audio-taped focus group discussion concerning their participation in the group process, including their differentiated roles/tasks and the ways in which CL STAD-D may have helped or not helped them to learn economics content information on which they were tested.

The class was composed of a convenience sample of senior tech prep diploma endorsement students, and there is often great diversity among students within such classes. Students in this tech prep economics class incorporating the CL STAD-D method participated briefly in structured team-building activities and were instructed in the use of STAD-D. Additionally, these students chose team names for each of the two team groupings. Each team received certificates of recognition based on an average of individual team member improvement points (Good Team, Great Team, Super Team), and their team names were placed on a chart which was posted in the classroom. A team average of 25 or above earned a Super Team award.

Students were initially grouped according to criteria that heterogeneously mixed ability levels (based on the pretest), as well as whether a student was ESS (Exceptional Student Services) or ESOL or had recently exited from all but ESOL standard accommodation services. This was done in order to achieve an English proficiency balance among the groups. All of the bilingual students had been exited from ESOL and were being monitored only for potential academic problems. Therefore, they were eligible for standard classroom accommodations only. Most of the ESS students had an IEP (Individual Education Plan) with modifications and
accommodations for testing, and they could take all tests with an ESS teacher in another classroom.

The students in the CL STAD-D teams were re-grouped about midway through the 12-week study with most receiving new differentiated roles. This was done to provide an opportunity for each student to work with a variety of other students as a team, as well as to participate in new team roles. The instructor, Ms. Jones, who taught the class daily, was a veteran educator with several years of experience teaching secondary broad field social studies, including all levels of economics. She had also taught sheltered ESOL social science classes. Additionally, Ms. Jones had previously taught many of these students other social studies courses at this high school. The text used for the class was Prentice-Hall *Economics: Principles in Action, 2005*, by O’Sullivan and Sheffrin. The curriculum was based on the State of Georgia standards for secondary economics. Ms. Jones additionally used materials from the Georgia Council on Economic Education, as well as a Junior Achievement simulation about absolute and comparative trade advantage.

Upon completion of this study, Ms. Jones was interviewed concerning EOCT outcomes for the class, as well as her role as a participant. Specifically, Ms. Jones shared her reflections concerning the effectiveness of CL STAD-D as a method, including its impact on economics EOCT results for her diverse ESOL/ESS students. Additionally, Ms. Jones served as a member-check, especially for initial grouping decisions (heterogeneous balancing) as well as for observations of those group interactions. While Ms. Jones has received staff development instruction in the use of cooperative learning as a strategy, she has been trained in STAD-D by the researcher for this study utilizing the Johns Hopkins manual, *Cooperative Learning* (1995), developed by Dr. Robert Slavin and his team.
Data Analysis

Data analysis included comparison of economics content quiz and pretest and EOCT scores, as well as CL STAD-D group scores. Qualitative data were examined, compared, and analyzed descriptively. Themes, preponderance of responses, and coding were used to categorize qualitative interview and survey data. Teams were observed during group sessions. The researcher was present for all CL STAD-D team group sessions. Surveys and focus group interviews were conducted with students. Interviews with other teachers at this school who have utilized specific cooperative learning techniques with their classes were also conducted prior to this study in order to determine in what ways these students had been exposed to other cooperative learning structures. Many of these educators also received training in the use of cooperative learning strategies, primarily with applied English, applied mathematics, and ESOL classes, and they shared a variety of opinions concerning strengths and weaknesses of the cooperative learning process as used for students at this high school in those courses. Applied English and mathematics classes are composed of diverse tech prep diploma endorsement students, including ESOL students and inclusion-only ESS students.

Method

The teacher, Ms. Jones, introduced the economics content standards material via whole class, direct instruction presentation, clearly focusing on expectations, standards, and objectives for the information to be utilized within the CL STAD-D groups. Therefore, students were able to recognize that it would be necessary to focus on the lesson in order to work together on the guided practice review to improve individual quiz scores that determined overall group scores. Teams were composed of four to six students who were matched heterogeneously based on academic performance (pretest results in economics and, later, quizzes), gender, personality
attributes, and ethnicity. Additionally, LEP/ESOL (Limited English Proficient) students were matched initially based on their level of language development as prescribed by their ESOL assessment, pairing one who was stronger in English with one who was not as strong an English speaker within a group. The CL STAD-D teams and how individuals functioned together within them were the most important features of CL STAD-D. The primary goal of the team was to complete a guided practice review to prepare all team members to do well on the quizzes. Sometimes, this included preparing a poster or a manipulative together. For instance, groups prepared a finger paper manipulative game for each member representing the different types of business organizations. Paper was folded in half and then in quarters. A type of business organization, such as a monopoly, was chosen, and vocabulary words that described a monopoly covered the four edges. When the thumb and index finger were used to maneuver the four sections, a definition of the specific term appeared on the inside. At every opportunity, emphasis was placed on team members doing their best for the team, as well as the team doing its best to support its individual members. The team functioned to provide the peer support for academic performance that is important for learning, as well as the mutual concern and respect necessary for inter-group relations, self-esteem, and acceptance of mainstreamed students. Therefore, team-building activities preceded the use of STAD-D as a cooperative learning strategy. These activities included student introductions, learning group member names, descriptive interviews, naming groups, and games.

After each standards-based economics lesson was presented as whole class instruction by the teacher (using multiple representations), each team met to study, discuss, and explain guided practice review worksheets (answer check sheets were provided at the end of the group work and obtained by the gopher), as well as to cooperatively complete the guided practice work, which
was followed by their individual group assessments. Each team was initially provided with only one guided practice review worksheet (writer), which forced team members to work cooperatively in order to complete it (they could each obtain a worksheet after the original was completed by the group). Team members were instructed to quiz each other in order to correct misconceptions and to use the team guided practice reviews to be sure that everyone had mastered the content. Leaders were responsible for this. Students were required to explain answers to one another instead of simply checking each other against the answer sheet. One member, the explainer, summarized. If there were questions, team explainers were required to ask all team members first before asking the teacher. The teacher facilitated this process by circulating among teams and by sitting in with each team in order to observe team interactions as well as to hear how each team member was responding. Team spokespersons for each group related guided practice review outcomes/findings to the entire class, often by completing and explaining information or drawings on a poster. Each group was provided a folder containing the guided practice review information so that any group member who was absent would be able to get a copy of the materials. Each group member was individually responsible for the guided practice review material he or she missed due to an absence. Additionally, it was the responsibility of each group to keep all group members up to date on the group work in order to prepare for quizzes.

The class was taught the state economics curriculum content standards using whole class instruction. Guided practice reviews were completed using a CL STAD-D strategy. These reviews included a standardized guided practice sheet for each economics standard content area, as well as vocabulary crossword puzzles, cartoon interpretations, and group activities such as an assessment presentation based on limited resources in which the town council had to decide
which budget cuts to make, an activity, In Shirt Supply, in which each team had to determine the price of a shirt their company would produce based on production costs, marketing, competition, and profitability. A comparative and absolute advantage trade simulation activity at the end of the study combined two sets of teams each that were designated as three countries. Each country began each round of trade with only one kind of candy bar with a specific value. For instance, one Reese Cup was worth two Baby Ruth bars. At the end of three rounds, each country had learned how to trade their candy with the other two countries in order to get the specific candy bars in the amounts they wanted. A review of the standards-based economics concepts as well as specific test-taking skills took place prior to the End-of-Course Test in economics. One day of review before the EOCT was missed due to a bomb threat that resulted in evacuation to the football field.

Before beginning CL STAD-D, each student was assigned a base score (derived from his or her pretest, a released economics EOCT from a previous year) which became the minimum individual score to achieve on each quiz. During STAD-D, individual quizzes were given in which students could not help each other. Therefore, every student was independently responsible for knowing the content.

Students earned points for their team based on the amount that their quiz scores exceeded their base (individual improvement) scores. The individual improvement score gave each student a performance goal that could be attained if he or she worked hard and, therefore, performed better than in the past. After every three or more quizzes, base scores were recomputed using the mean of the more recent quizzes for adjustment and challenge purposes. As soon as possible after each quiz, individual improvement scores and team scores were computed with improvement awards presented to the highest scoring teams. The purpose of base
scores and improvement points was to make it possible for all students to bring maximum points
to their teams, whatever their personal level of past performance may have been. These students
enjoyed the friendly nature of the team competitions and the team awards and the frequent pizza
“participation rewards” very much.

It was fair to compare each student with his or her own level of past performance because all
students entered class with different levels of skills, experience, and expectations. Everyone was
competing primarily with himself or herself within each group to improve self-performance
regardless of how the rest of the class performed. To compute a team score, improvement points
of each team member were recorded on the team summary sheet, and total team improvement
points were divided by the number of team members who were present. Therefore, team scores
were a reflection of those who were present and were based on team summary improvement
scores, not simply raw quiz scores.

Team recognition award criteria were based on three levels of accomplishment that were
based on average team scores and were displayed on the bulletin board. Additionally, teams
earned certificates of achievement that emphasized the challenge that doing well as a team was
important. All teams could achieve the awards because they were not competing specifically
with one another. They were also competing with themselves. Student team scores were used
to determine up to 20% of their grades (Slavin, 1988). Therefore, this CL STAD-D study
consisted of a regular cycle of instructional activities based on presenting a lesson, team
study/practice/activity, individual testing, assessment, and team recognition.

Dr. Robert Slavin (1995) suggests a minimum of four weeks duration for the STAD-D
treatment. This study began with the Fall Semester block in 2007 in late August and concluded
in early December 2007 (approximately 12 weeks). The administration of the state End-of-
Course-Test in economics took place on December 10 and 11, 2007. Teams were reassigned once for the CL STAD-D economics class during the study in order to provide those who were on low-scoring teams another opportunity for improvement as well as to work with other classmates.

Summary

This chapter described the mixed methods, quasi-experimental design of this narrative case study, including the research questions, population, site, subjectivities statement, assumptions and limitations, as well as any potential risk to students. An overview of the CL STAD-D strategy and data collection as implemented in this classroom for this 12-week case study was presented within the context of a diverse high school setting.
CHAPTER 4

DATA AND RESULTS

Introduction

This chapter presents student data and the results of this study. Student survey responses and student focus group interview responses provided the themes for the qualitative data analysis within the context of the CL STAD-D process during the 12 weeks of this case study (see Appendixes C, D, E, F, and G for copies of all data collection instruments). The individual students who participated in this case study, the CL STAD-D team members in their differentiated roles, the CL STAD-D process, the individual student improvement scores, and the team scores are presented. Pretest and EOCT scores are also presented in ranked order.

Background information on each student has been provided in order to better represent individual personalities and actions within a group context. Included are high school cumulative averages of the 27 participants in order to establish prior academic achievement both individually and as a mean for the entire class prior to this case study. Economics pretest and first EOCT scores are included for the purpose of comparison of economics content knowledge from the beginning of the study until the final EOCT was administered, which was 12 weeks later. A seating chart is also provided to indicate where each student sat in class during whole class instruction when not participating in a CL STAD-D group (Figure 4.1).
<table>
<thead>
<tr>
<th>Joaquin</th>
<th>Josh</th>
<th>Daniel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lupe</td>
<td>Juan</td>
<td>Kimberly</td>
</tr>
<tr>
<td>Marguerita</td>
<td>Deisy</td>
<td>Shawntay</td>
</tr>
<tr>
<td>Isabel</td>
<td>Mark</td>
<td>Alvaro</td>
</tr>
<tr>
<td>Antonia</td>
<td>Jorge</td>
<td></td>
</tr>
<tr>
<td>Miguel</td>
<td>Antonio</td>
<td>Luke</td>
</tr>
</tbody>
</table>

**Front of Classroom**

*Figure 4.1 Class Seating Chart (when not in groups).*

The Georgia Department of Education Performance Standards established the economics content on both the pretest and the EOCT. This content included economic concept fundamentals, microeconomics, macroeconomics, international trade, and personal finance. When the economics EOCT concept attainment area scores were disaggregated, the results were reported as follows from the table by the Georgia Department of Education (Table 4.1).
Table 4.1

*Economics Fourth Period EOCT Concept Attainment*

<table>
<thead>
<tr>
<th></th>
<th>Fundamentals</th>
<th>Microeconomics</th>
<th>Macroeconomics</th>
<th>International</th>
<th>Personal Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>52.12%</td>
<td>40.5%</td>
<td>38.62%</td>
<td>42.9%</td>
<td>49.9%</td>
</tr>
</tbody>
</table>

Source: Georgia State Department of Education, EOCT Content Area Summary Reports

Additional background information included students who received other instructional services, such as ESS, the number of hours some students worked per week, extra-curricular activities, and attendance in order to establish any observed behavioral impact on teams or on quiz score outcomes. Whether or not students planned to pursue education or training beyond high school was also considered as a probable motivational factor. The total number of missed quizzes, ethnicity, gender, birth nation, language spoken in the home, whether or not the student lived at home, whether or not all portions of the GHSGT had not been passed at the time of this study, summer school attendance, and other special circumstances represented ancillary, but important, contextual information that defined each student individually and the class holistically.

Each student is described individually. Woven into those descriptions are the observations of the researcher based on field notes of those students within their two respective groupings in the context of their differentiated roles within those groups during their group review sessions. Individual and respective team performance data also included with the student descriptions.
Table 4.2

Cooperative Learning Fall Semester 2007
Student Quantitative Data  (N=27)

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>H.S. GPA</th>
<th>Econ Fall Sem. Avg.</th>
<th>ESL /ESS Status</th>
<th>Work hrs per week</th>
<th>EOCT Pre-test Grade</th>
<th>EOCT Post-Test Grade</th>
<th>Percent Increase Abs. Fall Sem 07</th>
<th>Miss Quiz (zes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antonio</td>
<td>18</td>
<td>74.2</td>
<td>79</td>
<td>ESL</td>
<td>0</td>
<td>43</td>
<td>75</td>
<td>74</td>
<td>2</td>
</tr>
<tr>
<td>Juan</td>
<td>17</td>
<td>77.3</td>
<td>76</td>
<td></td>
<td>0</td>
<td>28</td>
<td>70</td>
<td>105</td>
<td>1</td>
</tr>
<tr>
<td>Enrique</td>
<td>17</td>
<td>75.8</td>
<td>70</td>
<td></td>
<td>0</td>
<td>27</td>
<td>55</td>
<td>104</td>
<td>2</td>
</tr>
<tr>
<td>Joaquim</td>
<td>18</td>
<td>80.0</td>
<td>71</td>
<td>ESS</td>
<td>0</td>
<td>13</td>
<td>68</td>
<td>423</td>
<td>8</td>
</tr>
<tr>
<td>Jorge</td>
<td>17</td>
<td>79.6</td>
<td>70</td>
<td>ESL</td>
<td>0</td>
<td>24</td>
<td>51</td>
<td>113</td>
<td>2</td>
</tr>
<tr>
<td>Alvaro</td>
<td>17</td>
<td>83.3</td>
<td>72</td>
<td></td>
<td>0</td>
<td>30</td>
<td>61</td>
<td>103</td>
<td>3</td>
</tr>
<tr>
<td>Moises</td>
<td>17</td>
<td>76.6</td>
<td>72</td>
<td>ESL</td>
<td>0</td>
<td>28</td>
<td>64</td>
<td>129</td>
<td></td>
</tr>
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Note: Some values are missing (esz) or have a minus sign (-30).
Table 4.2 (continued).

(N=27)

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<th>Summer School/ Phoenix for 08 grad.</th>
<th>Live with Parent/ Special Circumstance</th>
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<td>Y</td>
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<td>Y</td>
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</tr>
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<tr>
<td>Shawntay</td>
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<td>F</td>
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</tr>
<tr>
<td>Paul</td>
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<td>USA</td>
<td>Engl</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
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</table>

Totals:  
- H-15  
- USA-9  
- Engl-14  
- Y-7  
- N-16  
- B-2  
- M-15  
- Other-13  
- Span-13  
- Y-14  
- If Needed-4  
- Y-25  
- M-1  
- F-12  
- N-2
Group Team Assignments

Group team assignments were selected heterogeneously based on the CL STAD model. The heterogeneous groups were balanced for ability level based on the pretest scores and IEP accommodations for small group instruction for the ESS students. Students who were bilingual (Spanish and English) were placed in groups with ESOL students who had more difficulty with English and might need additional explanation with economics vocabulary and concepts. The groups were changed halfway through the case study as dictated by the CL STAD process.

The CL-STAD process was augmented for this study with differentiated roles within the groups. The researcher refers to this in the study as CL STAD-D. Role differentiation was used to provide each group member with a specific individual responsibility for team participation. It was hoped that such individual role responsibility would reduce a common cooperative learning observation of the interviewed teachers that a few group members often do most of the work while other group members participate minimally.

Groups in the first part of the semester were composed of five to six members, but there was an overlap within two of the groups with the differentiated roles in which two team members shared responsibility for the same role. Group roles included a gopher, whose responsibility was to pick up and put back handouts and answer sheets; a writer, who was to fill out the group worksheet, take notes, record responses; an explainer, who was to verbally explain answers or re-state information; a leader, who was to make sure everyone learned the information by informally quizzing the group members; and a spokes person, who was to summarize the information within the group and sometimes, in the case of a specific activity, present group findings or conclusions to the whole class.
It was anticipated when those groups were formed at the beginning of this study that two or more students might be shifted to another class. However, that did not occur, and since the groups had already participated in their respective team building activities, it was decided to leave them as they were. When a student was absent from a group, another group member or members would assume or share their role responsibility. For instance, Kimberly and Joaquin shared the role of gopher for the Go Dawgs team, and David and Denzel shared the role of writer for that team. Antonia and Lupe shared the role of writer for the Eggheads. However, an additional group was created for the second part of the semester in which groups were composed of four to five members, in order that there would be no role sharing within a group. In the second grouping, Daniel was both the gopher and the speaker for the A-Team, and Moises was the explainer and the gopher for the Mighty Raiders, as they had also served in those respective roles (speaker and gopher) in their previous groups.

When the students switched into the second grouping at the midpoint of the study and after the fourth quiz, they also usually switched their differentiated roles (Table 4.3). It was anticipated by the researcher that the switch would be made smoothly. However, that was not the case. Many of the students were adamantly unhappy with their new group assignment and a few others did not like their new role assignment. This result could have very likely been alleviated by repeating the team building and ice-breaker activities with the second groups that had been used at the beginning of the study with the first group. Even though group members were assigned specific roles and observed others within their groups in differentiated roles, the students required additional time to adapt to new groups, new group members, and new roles.
Table 4.3

*Groups/Differentiated Roles*

<table>
<thead>
<tr>
<th>First Grouping Period:</th>
<th>Second Grouping Period:</th>
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</thead>
<tbody>
<tr>
<td><strong>Group I-Brainiacs</strong></td>
<td><strong>Group I-Quiz Kids</strong></td>
</tr>
<tr>
<td>Jennifer-writer</td>
<td>Mark.-ESS-gopher</td>
</tr>
<tr>
<td>Juan-leader</td>
<td>Joaquin-ESS-leader</td>
</tr>
<tr>
<td>Mark.-ESS-explainer</td>
<td>Shawntay-explainer</td>
</tr>
<tr>
<td>Jorge-ESOL-gopher</td>
<td>Tiffany-writer</td>
</tr>
<tr>
<td>Alvaro-speaker</td>
<td>Paul-speaker</td>
</tr>
<tr>
<td><strong>Group II-Nerds</strong></td>
<td><strong>Group II-Geniuses</strong></td>
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<td>Luke.-gopher</td>
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<td>Luke-leader</td>
<td>Denzel-ESS-leader</td>
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<tr>
<td>Deisy-ESOL-gopher</td>
<td>Isabel-ESOL-writer</td>
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<tr>
<td>Miguel-explainer</td>
<td>Sonia-ESOL-speaker</td>
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<td>Sonia-ESOL-writer</td>
<td>David-explainer</td>
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<td><strong>Group III-Smarties</strong></td>
<td><strong>Group III-A-Team</strong></td>
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<tr>
<td>Josh-ESS-explainer</td>
<td>Alvaro-writer</td>
</tr>
<tr>
<td>Shawntay-writer</td>
<td>Daniel.-gopher/speaker</td>
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<tr>
<td>*Isabel-ESOL-speaker</td>
<td>Lupe-explainer</td>
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<td>Paul-leader</td>
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<td><strong>Group IV-Go Dawgs</strong></td>
<td><strong>Group IV-Geek Squad</strong></td>
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<tr>
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<td>Jennifer-explainer</td>
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<tr>
<td>Kimberly-gopher</td>
<td>Enrique-gopher</td>
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<tr>
<td>Lucila-ESOL-speaker</td>
<td>Josh-ESS-leader</td>
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<td>Joaquin-ESS-gopher</td>
<td>Miguel-writer</td>
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<td>Denzel-ESS-writer</td>
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<tr>
<td>David-writer</td>
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<tr>
<td><strong>Group V-Eggheads</strong></td>
<td><strong>Group V-Mighty Raiders</strong></td>
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<td>Antonio-speaker</td>
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<tr>
<td>Antonia-writer</td>
<td>Lucila-ESOL-writer</td>
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<td>Tiffany-explainer</td>
<td>Jorge-ESOL-leader</td>
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<tr>
<td>Daniel-speaker</td>
<td>Moises-ESOL-explainer/gopher</td>
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<td>Lupe-writer</td>
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<td>Moises-ESOL-gopher</td>
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</table>

*recently exited ESOL

ESS students may take tests and the EOCT/GHSGT with an ESS teacher

ESOL monitored-only bilingual students take all tests in class (standard instruction)
Content and Testing

There were a total of eight quizzes during this study: Unit I: Fundamentals, Supply and Demand and Market Structures; Unit II: Prices and Markets; Unit Three: Business Organization and Labor; Unit IV: Money, Banking, and Finance; Chapters 11 and 12: GDP, Markets (Factor and Product), and Aggregates; Business Cycles; Chapters 13 and 14: Unemployment, Inflation, and Taxation; Chapters 15, 16, and 17: Fiscal Policy, Monetary Policy, and Trade (Table 4.5). The quizzes, which were each composed of 30 test items, followed the multiple choice format of the released economics EOCT by the Georgia Department of Education from Spring 2004 by offering four answer choices. Seventy was a passing score. Ms. Jones produced the quizzes and chose the test items based on the Georgia content standards, incorporating the appropriate content items for each quiz from the Spring 2004 EOCT that was released by the Georgia Department of Education. The released Spring 2004 economics EOCT is located at the following Web site: http://www.doe.k12.ga.us/ci_testing.aspx?PageReq=CI_TESTING_EOCT. The Georgia content standards for economics may be located at http://www.georgiastandards.org by completing an advanced search under social studies for economics. The EOCT counted as a final examination and represented 15% of the total course grade for each student. All 27 students passed the course. Isabel, Luke, Daniel, Paul, Antonio, Juan, and Miguel each posted passing grades of 70 or above on the EOCT (Table 4.4).

All students increased their respective scores from the pretest to the EOCT. Joaquin, Luke, and Daniel posted the greatest percentages of increase. Mark and Lucila posted the lowest percentages of increase (see Table 4.2).
Table 4.4

*Pretest Student Rank and EOCT Student Rank* (N=27)

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<th>Student</th>
<th>EOCT Rank</th>
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Individual and Team Scores

Students began with a base score (from the pretest that was a released 2004 economics EOCT). The pretest was composed of 90 multiple choice test items with four answer selections, A-D, only one of which was the best answer choice. Seventy was a passing score for the pretest. The pretest was taken during one class period of the 90-minute block schedule. According to the CL STAD process, the pretest score became the first base score to be compared with each of the first three quizzes. After the first three quizzes, the same pretest was administered once again with the score being used for the new base score for the second set of quizzes, (four, five and six). After the sixth quiz, the average of quizzes four, five, and six comprised the new base score for quizzes seven and eight (Table 4.5).

Average quiz scores were highest for Units IV, I, and III, respectively. Students averaged the highest scores on the economic concepts of money, finance, and banking. The lowest average quiz scores were for macroeconomic concepts with the lowest average quiz scores posted for unemployment, inflation, and taxation. Personal finance, which included money and banking, was discussed informally throughout this study, as well as in Unit IV. It was a topic of interest that came up consistently in conjunction with other economic concepts as the students began to pay more attention to economic current events and the ways in which those might relate to their particular economic circumstance. With the exception of Unit IV, average individual scores were higher during the first part of the study and during the first team groupings. Additionally, more quizzes were missed due to unexcused absences during the last part of the study and during the second team groupings.
Table 4.5

*CL STAD-D Quiz Score Data (N=27)*

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*Average Quiz Score* 46.2 40.7 38
Table 4.5 (continued).

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Average Quiz Score

43.73       48.6       35.08
Table 4.5 (continued).

STAD-D Quiz Scores-Round III

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The individual improvement score for each team member was determined by another procedure. If the new quiz score was more than 10 points below the base score, then five improvement points were awarded to that team member for that quiz. If the new quiz score was 10 points to 1 point below the base score, then 10 improvement points were awarded to that team member for that quiz. If the quiz score was equal to the base score or up to 10 points above the base score, then 20 improvement points were awarded to that team member for that quiz. If the quiz score was more than 10 points above the base score, then 30 points were awarded to that team member for that quiz. A perfect quiz score received 30 points regardless of the base score (Tables 4.6, 4.7).

Table 4.6

*Individual Improvement Mean Scores:  First Grouping by Team*

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Team Avg. 23.00 Great
Table 4.6 (continued).

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**Team Avg.** 26.50

**Super**

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**Team Avg.** 26.25

**Super**
Table 4.6 (continued).

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Table 4.7

*Individual Improvement Mean Scores: Second Grouping by Team*

<table>
<thead>
<tr>
<th></th>
<th>Unit IV</th>
<th>Ch 11/12</th>
<th>Ch 13/14</th>
<th>Ch 15-17</th>
<th>Mean</th>
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<td></td>
<td></td>
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</table>

|                |         |          |          |          |      |
| **Geniuses**   |         |          |          |          |      |
| David          | 30      | 10       | 10       | 5        | 13.75|
| Isabel         | 30      | 30       | 5        | 10       | 18.75|
| Sonia          | 20      | 30       | X        | 5        | 13.75|
| Luke           | 30      | 10       | 5        | 5        | 12.50|
| Denzel         | 30      | 10       | 20       | 20       | 20.00|
| **Team Avg.**  |         |          |          |          | 16.25|

Good
Table 4.7 (continued).

<table>
<thead>
<tr>
<th>Team</th>
<th>Unit IV</th>
<th>Ch 11/12</th>
<th>Ch 13/14</th>
<th>Ch 15-17</th>
<th>Mean</th>
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<td>Daniel</td>
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<td><strong>Geek Squad</strong></td>
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<tr>
<td>Jennifer</td>
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<td>20</td>
<td>5</td>
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<td>16.25</td>
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<tr>
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Good
Table 4.7 (continued).

<table>
<thead>
<tr>
<th>Player</th>
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<th>Ch 13/14</th>
<th>Ch 15-17</th>
<th>Mean</th>
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<tbody>
<tr>
<td><strong>Mighty Raiders</strong></td>
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<tr>
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<tr>
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<tr>
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The purpose of the base scores and improvement points was to provide an observable, continuous, quantitative method for all team members to bring maximum points to their respective teams no matter what their level of past performance might have been. The improvement points of each team member were recorded on the team summary sheet for each quiz with the total improvement points divided by the number of team members present to determine the overall team score. Therefore, overall team scores depended upon improvement scores rather than raw quiz scores. If an average team improvement score for a quiz was from 5 to 19, that team received a Good Team award. If an average team improvement score for a quiz was from 20 to 24, the team received a Great Team award. A Super Team award was earned if the average team improvement score for a quiz was between 25 and 30. Individual improvement score averages were also determined for each member of a team. All teams could achieve the awards because the teams were not competing with each other (Tables 4.8, 4.9).

Table 4.8

*Team Improvement Mean Scores: First Team Grouping (N = 27)*

<table>
<thead>
<tr>
<th>Team</th>
<th>Unit I</th>
<th>Supply and Demand</th>
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<th>Unit III</th>
</tr>
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<td>Team II</td>
<td>Nerds</td>
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<td>22</td>
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<td>Team III</td>
<td>Smarties</td>
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<td>23</td>
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<td>Team V</td>
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### Table 4.9

*Team Improvement Mean Scores: Second Team Grouping (N=27)*

<table>
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<th>Ch. 11/12</th>
<th>Ch. 13/14</th>
<th>Ch. 15-17</th>
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<td>Geniuses</td>
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### Student Data

Aggregated student data are included on all 27 students, 20 who were age 17 and 7 who were age 18. There were 16 males, 8 of whom were Hispanic, 6 white, 1 black, and 1 multiracial and 11 females, 3 of whom were white, 7 Hispanic, and 1 black. The mean high school cumulative average for the class was 79.78 at the beginning of the study, and the mean economics average at the conclusion of the study was 73.2. The mean economics pretest average was 30.04, from the released 2004 EOCT in economics, and the mean economics EOCT score at the end of the study was 63.0, an increase of 109.72% (see Table 4.2). Seven students received ESOL services which would be described as monitored-only. That is, they were designated as ESOL with
standard accommodations because their language skills had advanced to an assessed level at which they were no longer eligible to take quizzes and tests such as the EOCT and GHSGT in a separate classroom with another instructor, have the quiz or test read to them, or provided additional time to take the quiz or test. However, those students continued to be tracked statistically to graduation by ESOL services.

The five students who received ESS services had an IEP with accommodations that included leaving the classroom to take their quizzes and tests in another classroom with an ESS instructor, and they were also permitted to use their text for those quizzes but not for the EOCT or the GHSGT. They were additionally permitted to have the quizzes and the EOCT and GHSGT read aloud to them, and they were allowed to have additional time in which to complete all tests and quizzes. When taking quizzes with another instructor, these students were also permitted to use the textbook.

Seven students in this study worked, and averaged 189 work hours per week. Four of the seven did not pass the EOCT. Jennifer and David each worked 20 hours per week and scored 65 and 68, respectively, on the EOCT with 70 as a passing score. Blake, who was ESS, worked 20 to 30 hours per week and scored 54 on the EOCT, and Deisy worked 25 hours per week and scored 64 on the EOCT. Two of the male students, Luke and Daniel, who each worked 25 to 30 hours per week, scored 83 and 80, respectively, passing the EOCT. However, none of the other students who worked more than 15 hours per week passed the EOCT. Isabel and Paul each worked only 15 hours per week and scored 86 and 76, respectively, passing the EOCT. Therefore, if a student was not already struggling with the economics content, such as an ESS or ESL student, then the number of hours worked per week did not appear to be a factor in passing the EOCT.
Nineteen students planned to pursue education or technical training beyond high school. Of those 19 students, three were Hispanic males, five were Hispanic females, six were white males, three were white females, one was a black female, and one was a multiracial male. One Hispanic female and one black male were not certain about further training or education, and five Hispanic males and one Hispanic female stated that they were not interested in further training or education.

For the 27 students, 181 total days of class were missed by 25 students during this 12-week study, with 95 of those total days having been missed by only five of the students. Of those five students, three, Lupe, Sonia, and David, did not pass the EOCT. The other two students, Luke and Paul, passed the EOCT. Two students, Moises and Josh, had perfect attendance, but neither one passed the EOCT. The number of days missed was only predictive of failure on the EOCT if the student was also ESL or ESS and the days missed included a quiz day.

A total of eight quizzes were missed by seven students during this 12-week study (see Table 4.2). School system policy dictated that those missed quizzes could not be taken at another time due to the unexcused absences of those students. None of those eight students who missed a quiz, Blake, Mark, Shawntay, Alvaro, who missed two quizzes, Tiffany, Lupe, or Sonia, passed the EOCT. Missing a quiz was predictive of failure on the EOCT.

Ethnically, 15 students were Hispanic, eight males and seven females. Nine were white, three females and six males; two were black, one male and one female; and one was a multiracial male. Fourteen students were born in the United States, and 13 had another birth nationality; 12 were from Mexico, and one was from Cuba. Three of the students, Marguerita, Shawntay, and Paul, who were born in the United States, had been born in states other than Georgia. Those states were California, North Carolina, and Florida, respectively. Fourteen of the students spoke
English at home, and 13 spoke Spanish at home. Fourteen students had passed all portions of the GHSGT at the time of this study, and 13 needed to retake the math, science, or social studies portions of the test in order to graduate from high school. Eleven students had either gone to summer school or planned to go to the local special purpose high school, Phoenix, at night in order to take or to retake classes to stay on track for graduation. All but 2 of the 27 students lived at home with a parent. One of those two lived with her husband and young child, and one lived with his older sister (see Table 4.2).

The final economics EOCT raw data for the class produced an overall mean grade of 63.0 out of a possible 100. While the student qualitative interviews and student survey data confirmed the overall positive social and motivational aspects of the CL STAD-D group learning process as indicated by the literature, that observation did not result directly in each student passing the EOCT with a 70 or above, which is the minimal goal for NCLB (No Child Left Behind), the state, and principals. While each student improved from pretest to EOCT, (none passed the pretest), and the overall class improved by 109.72 percent, only seven of the 27 students, (25.93%), passed the EOCT with a grade of 70 or above, which would not be acceptable performance for NCLB. Additionally, the concept attainment data for the class indicated that these students performed poorly. They were at the 50% proficiency level in only two areas, fundamentals and personal finance. Those two concept areas were both taught at the beginning of this study, as well as being constantly mentioned and reviewed within the context of teaching the remaining concepts and current events (see Table 4.1).

None of the five ESS students, Blake (54), Mark (55), Josh (68), Joaquin (68), and Denzel (49), attained a passing score of 70, although Josh and Joaquin were close. Only one of the seven ESOL students, Antonio, passed the EOCT (75), but two of the remaining six, Deisy and
Moises, who did not pass had scores of 64 each. Marguerita, Lucila, and Jorge had scores of 56, 54, and 51, respectively. Sonia, who missed a total of 28 days due to the birth of a baby, scored a 47. These seven ESOL students did not include the student, Isabel (86), who recently exited from all ESOL services, including monitoring (Table 4.2).

While disheartening for those of us who had hoped for passing scores of at least 70 for all students participating in this study, the results are consistent with other schools and school systems that immediately surround this one in northwest Georgia that do not make AYP (Adequate Yearly Progress) for NCLB due to ESOL and ESS sub-groups, according to the Georgia State Department of Education.

Cooperative Learning Social and Motivational Factors

The 27 students who participated in this study generally knew each other casually as high school seniors, but they admitted there were many in the class with whom they had little personal contact. The way in which the teams were organized forced them to attempt to work together for the good of the team competition. Consequently, the students stated overwhelmingly in focus group interviews and in their written surveys that they believed they were able to get to know their classmates better than they would have without the CL STAD-D process.

The majority of the ESOL-monitored students, both male and female, thought the group work helped them to complete the CL STAD-D group more efficiently as well as review the economics course content before each quiz. However, the bilingual Hispanic girls tended to work through their differentiated tasks within the groups more diligently with less direction from within the group, and they would often unhesitatingly pair with another bilingual Hispanic girl within the group. If there were no other bilingual Hispanic girl in the group, but there was a bilingual Hispanic boy, then he would help the bilingual Hispanic girl, as with Antonio and
Lucila in their first grouping, Go Dawgs. Because this pattern was also acknowledged by other educators at this school as they were interviewed by the researcher concerning CL and ESOL students,
it was concluded that it must have been a common practice that was culturally based and also used in the sheltered ESOL classes in which many of these students had participated previously.

Lucila paired with Antonia in the second grouping, Mighty Raiders, even though Antonia was not ESOL, as both spoke Spanish. However, the bilingual Hispanic boys were less likely to routinely pair up on their own in order to help each other within the CL STAD-D groups.

**CL STAD-D Differentiated Roles**

The CL STAD-D student focus groups were each composed of differentiated roles of explainers, writers, leaders, spokespersons, and gophers. These were interviewed in focus groups of five students each based on their respective differentiated roles. Three of the explainers were ESOL monitored-only students, but they indicated that English language reading and comprehension were not problems for them. However, they thought the quiz and test questions were often hard to understand, which an educator might logically conclude involves comprehension that could also be language-related. As an explainer stated, “If I understood the material, then my role as explainer was useful.” The quizzes were patterned as a 30-item version of the 90-item EOCT format. The pretest was a 2004 released economics EOCT from the Georgia State Department of Education. The explainers agreed that they generally were more comfortable learning individually, but they were specifically more motivated while working together as teams. All of the explainers believed that their role served as the most important and pivotal group function.
In contrast, most of the writers thought that all of the differentiated roles were necessary because they forced team members to share responsibilities. However, one white male stated that “I could have learned it on my own.” Writers also believed that “Writing it down helped the writer to learn the material when the others explained it.” Again, the ESOL students, mostly males who had been exited from ESOL by 10th grade, did not think the economic content or specialized terminology posed any particular difficulties for bilingual students. Additionally, these students did not view CL STAD-D as either helpful or harmful in terms of preparing them to pass the economics EOCT.

The leaders viewed their primary role responsibility as helping with explanations and making sure that group members were participating and preparing for the tests. They suggested that “bouncing the guided practice group content review questions off of the entire class before the group sessions” might have made the group work process a more efficient task. However, leaders also stated that this might also have resulted in some students not participating as much in a pre-group whole class discussion due to shyness or to poor language (speaking) skills. Most of the team leaders believed that their groups learned what they were expected to within the group. Additionally, group leaders all thought the team competition and the certificates as rewards helped to motivate the teams. They also recommended that individuals in the groups should be permitted to choose their roles in the second round of grouping instead of those roles being selected only by the teacher.

The spokespersons agreed that the CL STAD-D groups forced them to participate and that they, therefore, had to pay attention and that the individual role responsibilities kept people in each group from being permitted to be left out. One bilingual ESOL monitored-only female who was not yet fluent in English stated that it helped her to learn more effectively if the
spokesperson was also bilingual. Additionally, spokespersons agreed that it was good, even if some group members were not naturally competitive, to have the certificates and pizza as rewards for overall team improvement quiz scores.

Spokespersons also suggested that the content review worksheets completed by each group should be graded (scored) each time, not only by each group but also by the teacher. They believed that some groups were primarily copying their work sheet answers from the check sheet provided at the end of each group session instead of agreeing on the answers first in the group and then checking those answers for correctness. Interestingly, when students rated the performance of their own group members as well as themselves, they tended to rate each other as modest or substantial, or average to above average, in terms of contributions to and participation in the group (see Appendix H). Once groups had bonded as teams, they were reluctant to be critical of each other and stated in the focus group interviews that “Most groups really did not have slackers, and people generally did what they were supposed to do.” While that was stated commonly in the focus groups, the contradiction was that it was not the consensus of the individual surveys in which a major complaint was that everyone present did not always do the work. Spokespersons also stated that the time lag between CL STAD-D team content review and the quizzes, which were graded electronically, and returned in one or two days, may have been too long. They would have preferred shorter quizzes of 15 to 20 items that could have been taken more frequently and, preferably, graded and returned on the day of the group content review.

Gophers were concerned about the answer keys being available at the end of the group work. It was their primary responsibility to retrieve the appropriate answer key after the writer had filled out one worksheet with input from the group and then to bring it to the group to check the
answers and, finally, to return it to a folder at the front of the room. Gophers preferred that answer keys not be provided to each team. Furthermore, they suggested that the teacher should go over the worksheet answers with the whole class after all groups had completed them. Basically, gophers stated they were happy with direct, whole class instruction for the explanation of economic terms and concepts followed by groups completing a review worksheet. However, they preferred to reinforce the worksheet answers with whole class direct instruction including further explanation by the teacher before the quiz. That is, they would have preferred a teacher-conducted review immediately preceding each quiz. Gophers also thought that talking in groups about the information was useful, as the interaction helped the group members to get to know each other better. They also suggested that changing groups more frequently would help each student to be able to work with more classmates. However, when the students actually switched groups halfway through the study, they overwhelmingly complained about not wanting to change.

The bilingual Hispanic males did not think the CL STAD-D groups made a difference in helping them to better understand the economics content. When asked by the researcher how they preferred to review for EOCTs in other subjects, they mentioned that written outline reviews helped them the most to remember specific content information and vocabulary, and oral whole class reviews were also beneficial, but that individual content study packets were not as useful unless the teacher also went over them.

Teacher Interviews on CL

The teacher interviews from this high school were interesting in that, while most teachers had received staff development training in cooperative learning, it was most often used by them for role play demonstrations in applied English, creating authentic group projects, completing a
specific assignment, such as in a chemistry laboratory, discussing character development in a novel, or problem-solving in an applied mathematics class. It was not used as an ongoing process for high stakes test preparation. More often, cooperative groups were primarily used as a strategy for competitive group games in order to review quiz items the day before the quiz.

Ms. Jones, who taught this CL STAD-D class, predicted that a mean EOCT score in the 60-65 range would very likely be considered good for the class. She believed, based on prior experience with the economics EOCT, and with tech prep students at this high school, that it might be impractical to expect an overall mean passing score for the economics EOCT at 70% from this diverse class.

Ms. Jones also believed that if the CL STAD-D study had lasted more than 12 weeks, then the test score outcome might have improved for the class. However, that conclusion was not well reflected in the progression of all of the quiz score data (see Table 4.5), which showed no trend toward improvement over time. Furthermore, improvement over time was suggested by some of the team summary improvement mean scores, but only during the first team grouping cycle, which ended with Unit III (see Table 4.6). The second team grouping cycle, which began with Unit IV, revealed a reduction in overall team improvement mean scores as the cycle progressed (see Table 4.7). This result might be explained by the need to complete the economics content at a faster pace, as well as the more abstract nature of the later content, which was macroeconomics. Given the overall diversity of this class, Ms. Jones believed the final EOCT scores were actually higher than they might have been, based on her previous experience teaching economics at this high school. Ms. Jones concluded that the class generally understood the concepts but had difficulty with the academic language used on the EOCT. Additionally, some of the students took the EOCT with an ESS teacher who read it to them, and, for some
students, it can be a hindrance to try to listen to, think about, and process individual answer choices as someone is reading aloud. Ms. Jones also concluded that some students had not had time to reach a “cognitive summit,” or a deeper understanding in which the individual conceptual parts of the economics content might be synthesized, as a few students had many absences during the 12-week period. She definitely thought that the CL STAD-D process worked best when the students “discussed and explained content and vocabulary with each other.” She thought she could have managed the “group manners” better in order to achieve a better overall group experience such as reducing talking out of turn, for instance. Ms. Jones planned to use this method again, because she believed, as did the students and the other teachers who were interviewed for this study, that it was particularly effective in promoting positive social interactions and motivation for student learning.

Ms. Jones also thought the ESOL students generally performed better in groups due to its familial and cultural structure, and she also noted that they “pair up automatically.” Each of the six other teachers interviewed for this study at this school also shared similar comments. What worked well in the groups with the CL STAD-D class included making something together with which to play a game, or creating a poster, a diagram, or a flow chart. Additionally, the PowerPoint instructional presentations that Ms. Jones prepared and used occasionally were especially appreciated by the students because they were able to use them to easily fill out the worksheets individually at the end of each team grouping.

Because the students who participated in this study were seniors, they had already experienced the use of various forms of cooperative learning at this high school. Five other teachers at this high school were interviewed, in addition to Ms. Jones, during an 18-month period before this study began (see Appendix A for interview questions). Each one had received
staff development training by this school system for cooperative learning, and they had previously taught classes that used cooperative learning to many of the same students in this study. The school system had recognized the importance of cooperative learning as a useful strategy for teaching diverse students and had provided resources and implemented local staff development training for it. Two of the teachers had been trained to use cooperative learning strategies for tech-prep applied English and applied algebra classes. One teacher used cooperative learning with a college preparatory chemistry class, and one of the applied English teachers also used it with an honors literature class. One of the teachers was a bilingual ESOL teacher from Puerto Rico who taught sheltered classes for students with limited English speaking proficiency. Cooperative learning is a strategy typically used with sheltered classes.

All five of the other teachers stated that successful cooperative learning required a strong focus on a task in which all students interacted by questioning each other. Others thought preparation time and organization for cooperative learning activities were the most important factors for success with cooperative learning. One teacher thought that the reality of limited classroom space was a serious constraint when working in cooperative groups. That was especially true for those who taught applied math and applied English in which groups were engaged in completing a variety of authentic projects on a weekly basis. Groups were most often composed of two, three, or four students. Three of these teachers selected two of the four students in each group but allowed the other two to self-select. One applied English teacher, who also taught honors English to freshmen, thought that six was an effective number for studying both plot and character development in selected novels. She believed that six provided a greater opportunity for a variety of shared insights, as well as an increased opportunity to practice and to process higher order thinking skills through comparative analysis, reflection, and
evaluation. Although five to six groups of four were usually the preferred grouping model, all five of these teachers had also successfully used pairs as a group model for explanations, guided practice, and review. Most of them agreed that if pairs were to be used as the preferred cooperative learning group pattern, then they should be equal in ability or one student would very likely become the teacher of the other.

The chemistry teacher stated that groups of four with a high, a low, and two mid-achievers worked well for project-centered tasks. He stated that lower level students could do the hands-on inquiry activities, but they often had fewer positive leaders within the group who could explain it very well. Additionally, this teacher admitted that he had also placed the highest level students together into groups so they could “soar.” In chemistry class, this teacher stated that the bilingual ESOL students often struggled with the chemistry vocabulary content language when they were placed in groups together. However, if they were required to speak only English all of the time, then he did not get as much work out of them. Furthermore, if he dispersed them into groups with only English speakers, then the quality of their work suffered, and they made less of a group effort because they were either intimidated or uncomfortable due to the language difference.

A common thread among these interviews with teachers was the necessity of “policing” the groups and the observation that cooperative learning group work was not always equally shared. Some students excelled, and some simply did the minimum, which was particularly so for the applied English and mathematics classes. Most of these teachers also stated that rubrics were important and that presentations could provide valuable opportunities for “how to” develop higher order thinking skills with comparing, contrasting, and evaluating. The majority of these teachers used cooperative learning for activities, projects, and reviews by playing group
competition games. The chemistry teacher used it for labs. All agreed that with tech-prep students, poor attendance could present a major concern with regard to individual learning outcomes. All of these teachers agreed that group learning outcomes were more positive due to social interaction. Group social interaction and shared explanations were perceived by them to be the most significant factors that resulted in accomplishing the learning aims of the cooperative learning groups.

The CL STAD-D method and purpose as implemented for this study were not equally comparable to other cooperative learning experiences at this high school. Therefore, one may only compare and contrast the points of view of these educators concerning cooperative learning and its impact on students in their respective classes based on their individual experiences and desired instructional outcomes as viewed through the manner in which they implemented what was learned in their staff development training on cooperative learning. Constructivist educators naturally adapt content, resources, strategies, and processes in real time in order to provide learning opportunities designed to achieve specific outcomes for their diverse students. Even though Ms. Jones followed the CL STAD-D strategy guidelines as described for this study, she also adapted it slightly as the situation and common sense dictated during the 12 weeks of this study. The students in this case study who had participated in cooperative learning strategies in other classes at this school also brought those experiences with them to this class. Just as teachers adapt, so do students.

It would be a valid consideration, although not a critical one, that prior experience with cooperative learning might have resulted in a preconditioned expectation concerning the cooperative learning process by these students based on its use and what they may have become accustomed to in other classes at this school. Therefore, there may have been a preconceived
likes, dislikes, or other expectations for either the cooperative learning process or the subject of economics or both before this study was conducted. Many of the survey questions attempted to discern student attitudes about economics as well as cooperative learning (see Appendixes E and F for interview instruments).

Descriptive Qualitative Group and Biographical Student Data

This section introduces the individual students who participated in this case study. They are listed by ethnicity and gender. Hispanic males are introduced first, followed by Hispanic females, white males, white females, a black male, a black female, and a multiracial male. They are described as members of a particular CL STAD-D team with respect to roles and to individual improvement scores as well as their contribution to overall team scores shown in Tables 4.3, 4.6, 4.7, 4.8, 4.9. Descriptive biographical information and test score data about each student are shared, including birth nation, language spoken in the home, number of hours worked per week, desired education or training beyond high school, days missed in this class, number of quizzes missed, absences in this class during this case study, portions of the GHSGT remaining to pass, overall high school cumulative average as of Fall, 2007, economics pretest score, final economics EOCT, economics class final grade, and special circumstances shown in Table 4.2.

Antonio

Antonio was an 18-year-old Hispanic male. He was assessed at a high enough language development level in ESOL that he was monitored-only in terms of ESOL services. He was no longer in sheltered classes and took all tests in this classroom with the other students. Antonio was very intelligent and capable. He was born in central Mexico, attended elementary school in Mexico, but attended a local county middle school. Antonio lived with his parents, and Spanish was the language spoken primarily in his home. He began high school at another school in this
district and attended Phoenix at night and in the summer to stay on track to graduate. He had passed all portions of the Georgia High School Graduation Test. Antonio wore gang symbols and colors. His head was shaved, and both ears were pierced. He had tattoos on his upper biceps and forearms. He was polite with a dry sense of humor and said that he wanted either to find a job in the United States or, possibly, go back to Mexico after graduation. He did not plan to pursue further education or training in the United States.

Antonio did not participate as much as he might have during whole class instruction. Some of the students who shared a gang affiliation chose individually not to participate during class, especially the new inductees. One of the local Hispanic gang affiliations, Tiny Winos, had recently merged with Sur 13, a nationally affiliated Hispanic gang. The number 13 represented the 13th letter of the alphabet, which was symbolic in this case for the Mexican Mafia, according to the local Street Gangs Task Force. At least one biracial student from another local high school had been shot and killed recently, while in a local place of business, by former students from this high school who were Hispanic and gang affiliated. The reason given by the Hispanic gang members, who were all apprehended and convicted, was that the slain student had flashed a Crips (another gang affiliation) gang sign to one of them in their territory. Drive-by shootings and illegal drug possession, distribution, and sale also have taken place, which are locally reported as alleged gang-related activities.

When individuals were acquiring gang membership, they were required to go through an induction process, and one expectation for that locally was not to be responsive in class or not to do any class work for a specific period of time, such as 4 to 6 six weeks, while at school. Such students did not effectively disturb other students and often comported themselves overly politely to the instructor. They were generally passive in the classroom. However, this was not
the case when Antonio was in his group. He was the leader in his first group of six members, Go Dawgs, and it was obvious from the beginning that he was well suited to his role. It was believed by the administrators that Antonio was a primary gang leader. Therefore, he could assume a more dominant role, but the initiate inductees could not, and they clearly deferred to him as he kept close watch over them. Antonio was capable and managed his team members with a dry, low key, sense of humor. He was patient with those in this group who required additional help, such as Joaquin and Denzel, each of whom qualified for exceptional student services. In his second group of five members, Millionaires, Antonio was the writer.

Antonio had a cumulative high school average of 74.2. His economics pretest grade was 43, and his EOCT grade was 75. His overall grade for the class was 79, which was among the higher grades in the class. His quiz scores were consistently high relative to his classmates. He was absent twice. His first team, Go Dawgs, achieved a “Great” certificate award on Unit III largely due to his leadership efforts. His second team, Millionaires, achieved a “Super” certificate award on Unit IV, but it was more of a team effort. Antonio responded in the focus group interviews that, while he preferred to learn on his own or with one study partner, he had enjoyed being a part of the group learning process. Furthermore, in his survey responses, Antonio did not believe that his grade had been either helped or hindered by the group process, but he stated that he wanted his team to do well.

Additionally, Antonio believed that he learned best on his own by concentrating on what the teacher was saying while everyone was quiet. That he was not hindered by the group differentiated role process is an accurate assessment for Antonio based on observation, as he was a most capable student. Antonio contributed positively to his group, and he interacted as necessary, as a team member, in order to complete the work. He very likely would not have
willingly participated with classmates or shared his thoughts unless he had been in a group and, therefore, informally enabled to reveal his natural intellectual leadership abilities.

Furthermore, Antonio appeared to enjoy the give and take of the group learning process. He did not mind helping the others, but Antonio stated that he was disappointed that some group members did not participate as diligently as they should have. It was Antonio who had the positive role effect on the others in his group even though he believed he could have learned as well without them or in the differentiated group roles. Rather, their learning appeared to be enhanced because he was their leader.

In the second grouping, which was composed of a majority of Hispanic team members and in which he was the writer, Antonio took his role seriously but did not attempt to share leadership responsibility again. That group excelled initially with Unit IV: Money, Banking, and Finance, but they did less well with macroeconomic concepts and international trade as the semester concluded. Antonio was absent twice during this project.

Juan

Juan was a 17-year-old Hispanic male who was very quiet. He was a good student who attended local county elementary and middle feeder schools for this high school. He was not very tall and had spiked black hair and a mustache. Juan had very kind, expressive eyes. Although he did not work after school, Juan planned to work after graduation but did not plan on further education or training. Juan was born in the United States and lived at home with his parents, where Spanish was the predominant language spoken. Therefore, Juan was bilingual but not ESOL. He needed to retake and pass three portions of the GHSGT in order to graduate on time, and he was willing to attend summer school in order to graduate on time. His cumulative
high school average at the beginning of this study was 77 with an ending economics class average of 76. His pretest score was 28 and the EOCT score was 70. He was absent only once.

On the quizzes, Juan performed best on Fundamentals at the beginning of the project and Units III and IV. His quiz scores were not as high toward the end of the 10 weeks, especially on macroeconomics. However, Juan helped his five-member Group I team, Brainiacs, earn Great and Super overall scores. His role for that group was leader, and he was a quietly competent leader within the group dynamic. His individual team improvement scores were also high. His highest improvement score for the five member Group II team, Millionaires, was for Unit IV at the beginning of that grouping. Juan was a gopher in the second group.

Juan was quiet and slightly reticent during whole class instruction. In the first group, his role as leader challenged him to become more active. Juan had excellent scaffolding to become a good leader in that group, because the more naturally-assertive Juan was the writer, which required her to concentrate more on writing than on talking. Alvaro, the speaker, was easy-going and humorous, and Mark was a clear, concise, explainer. Juan responded to the positive group dynamics due to fortuitous role-matching to become an effective leader in that group. Therefore, the leadership role became less of a reach for him, as everyone performed his or her roles satisfactorily.

**Enrique**

Enrique was a 17-year-old Hispanic male who lived with his parents and did not work after school. Enrique had a large mustache and dark, almost menacing, eyes. He indicated that he did not anticipate further education beyond high school. His demeanor was quiet, and he was no longer receiving ESOL services, having achieved a sufficiently high score on an English language assessment. Therefore, he took all quizzes and tests in the regular classroom. Enrique
was born in Mexico and attended local county elementary and middle feeder schools for this high school. He had failed all portions of the GHSGT. Eduardo played soccer and the team placed second for the state championship in its division. Two other Hispanic team players were each awarded college soccer scholarships to a private two-year college. That was often an expedient way for Hispanic students to further their education.

In terms of quiz scores, Enrique began slowly, improved toward the middle of this study, and then slowed again toward the end of the semester. Specifically, he did not do as well as the rest of the class on the quiz on economic fundamentals. However, Enrique improved consistently until the quizzes on macroeconomic concepts and international trade, on which he did not perform as well. His cumulative high school cumulative average was 76, with an ending economics grade of 70. He scored 27 on the pretest and 55 on the EOCT. He was absent twice during the project.

In his first group, composed of six members, Enrique was the leader of the Eggheads. The group achieved Great status once and Super status twice. Super status requires improvement score averages of 25 or higher. Daniel was the speaker for the Eggheads, and he was well suited to that task. Because Enrique was quiet, Daniel was often the dominant personality within the group. Tiffany, the explainer, was also somewhat hesitant in the beginning to assume her role.

Enrique began his leadership role in a laid back fashion. However, about halfway through that grouping, Enrique visibly became more comfortable conversing with the other group members. In fact, they all became more confident in their respective roles. Lupe, who was often unsure of herself, became a competent writer with the help of Antonia, and Moises, although a gopher, contributed high quiz improvement scores along with Tiffany and Daniel. Additionally, Moises contributed artwork for a group poster presentation. Unit III, Business Organization and
Labor, was the high point for the group, and it was their last work together. They had all learned to work well together in their group. They had kindly and unassumingly helped each other by contributing individual skills and talents toward the overall success of the group. While this required individual effort and effective role play, it developed as an outcome within the group dynamic without their being obviously aware of it.

In his next grouping, the Geek Squad, which was composed of four members, Enrique was the gopher. His other team members were dominant personalities in dominant roles, and he naturally receded into the background. They achieved Super status for Unit IV: Money, Banking, and Finance and for Chapters 11 and 12, GDP and Markets.

On the surveys, Enrique consistently stated that he learned best when the teacher explained interesting material step by step, when he knew his classmates, when he worked with smart people, and when he studied out loud. As for the group work, Enrique thought it was most helpful for him when the information was carefully explained out loud. He also believed the group operated most effectively when everyone interacted, expressed opinions, and shared explanations during group time. While Enrique stated that he preferred to learn on his own, he admitted that he would not have accomplished as much in terms of understanding by learning only on his own. In fact, Enrique probably would not have exerted the individual initiative required to have completed all of the work on his own.

Enrique stated that he felt capable of learning on his own, but he also knew that he was helped by the added dimension of group discussion and explanation in both groupings. He was not overwhelmed in the first grouping, as only Daniel was a dominant personality, but that was not the case in the second grouping, which, although a smaller group, was composed of less
accommodative individuals. His role was the gopher, and he became much more of a listener than a participant.

Enrique remained a nice young man who got along with everyone. When his photograph was in the local newspaper, as the high school soccer team went to the state championship, his happy smile lit up the page. It was Enrique who had scored the crucial goal that brought his team to that championship game. They were second in the state in their division that year. There is no evidence that Enrique continued either his academic or his soccer career beyond high school.

Joaquin

Joaquin was an 18-year-old Hispanic male. He was served by ESS and had an IEP due to a slight learning disability in reading. He took quizzes and tests with testing accommodations that included having an ESS teacher in another room read the test to him and that provided additional time for taking quizzes and tests. Joaquin had difficulty processing language, but he stated that he understood economics content better in English than in Spanish, and he spoke English well. He was a visual and spatial learner, but Joaquin did not participate well in whole class game activities that were competitive. Joaquin was always very quiet, and he would not ask questions when he did not understand. He often would not make any effort to complete the class assignment either on his own or in the group. Joaquin enjoyed working with his hands and drawing. One thing he accomplished quite well in groups was drawing or helping to draw a poster depicting the information for the group activity. He did not plan to pursue further education beyond high school.

Joaquin was born in Mexico. He had five siblings, lived with his parents, and did not work after school. Joaquin attended elementary and middle school in Virginia. He planned to work after completing high school, and his parents were very supportive and wanted him to pass the
mandated tests in order to enable him to make his way in the world. Joaquin had passed all of the GHSGT components at the time of this study. He was absent eight times during this study. His cumulative high school cumulative average at the beginning of this study was 80, and his economics pretest score was 13 with an EOCT score of 68. Only Luke had a higher range of increase from pretest to EOCT. Joaquin was relatively tall and slender. He had short, dark hair, prominent ears, and a slow grin with beautifully even teeth.

Joaquin shared the role of gopher with Kimberly in his first group, Go Dawgs, which was composed of six members. He was the leader in the second group, Quiz Kids, which was composed of five members. The Go Dawgs achieved a Great award as a group for Unit III: Business Organization and Labor. The Quiz Kids achieved a Super award overall for Unit IV: Money, Banking, and Finance. Joaquin had higher individual improvement scores for the first grouping than the second. His best quiz scores were for Supply and Demand and Unit IV: Money, Banking, and Finance.

Based on his surveys, Joaquin believed that he learned best in a group by listening to others talk about the activities and when the teacher explained the activities thoroughly, but he preferred whole class instruction and a study sheet for helping him to prepare for tests. He expressed a liking for economics and stated that he would not mind studying more of it. Joaquin clearly preferred instructor reviews followed by a group review as reinforcement before a test. In terms of the focus group interview based on his differentiated group role, Joaquin thought it helped him as a team member and that it helped him to do well on the tests. Observationally, Joaquin benefited from being exposed to the explanations of others more than from providing explanations himself within the group.
**Jorge**

Jorge was a 17-year-old Hispanic male who was born in Mexico. While listed as an ESOL student, his language assessment was high, and he was monitored-only for ESOL services. He was bilingual, and he took all tests and quizzes in class. Jorge appeared to give up very easily, and he did the class work with obvious reluctance. His cursive handwriting was very tiny and clear, but it was also quite tedious to read. He had a dry, witty sense of humor, but his overall demeanor was always cautiously reserved. He was slightly built with wide set dark eyes and somewhat flat, but even, facial features and full lips. Jorge did not smile very much.

Jorge attended elementary school in Mexico. He attended a local city middle school, as well as a local county middle school that fed into this county high school. Jorge stated that he planned to return to Mexico following graduation and did not plan to pursue higher education. His cumulative high school cumulative average was 79.6 at the beginning of this study with an ending economics average of 70. His economics pretest score was 24 with a 51 on the EOCT. Spanish was the primary language spoken in his home, and Jorge had passed all components of the GHSGT at the time of this study.

Jorge was a gopher in his first group, Brainiacs, which was composed of five members and a leader in the second group, Mighty Raiders, which was composed of four members. The Brainiacs received three Great and one Super overall team improvement awards. The Mighty Raiders achieved only Good team improvement awards. Individually, Jorge contributed well to the overall group efforts, but he was surpassed in individual improvement scores by Jennifer, Alvaro, and Juan as a Brainiac team member and by Antonia as a Mighty Raider team member. Antonia was the speaker of that group, and although she was Hispanic and born in Mexico, she
was not listed as receiving ESOL services. The highest individual quiz scores for Jorge were for Supply and Demand and Unit III: Business Organization and Labor.

Based on his responses to the surveys, Jorge believed that he learned best in class from the group talk and from interesting whole class teacher reviews. Many of his written responses to survey questions were sarcastic. Clearly, and very likely for his own social purposes, Jorge was a more capable student than he wanted to project. He missed two days of class.

**Alvaro**

Alvaro was a 17-yr-old Hispanic male who born in Cuba. He had curly red hair and freckles. His nose had a very high, uneven bridge, as if it might have once been broken. He was a basketball star at this high school during this study. Alvaro lived with his father, spoke Spanish at home, and did not work after school. He missed three days of class and two quizzes at the end of the semester. Alvaro had attended elementary and middle school in Miami, Florida. He had attended a local city middle school as well as a local county middle school that fed into this high school. Alvaro did not receive ESOL services.

Alvaro had passed all components of the GHSGT. His cumulative high school cumulative was 83. He ended this class with a 72 average. Alvaro scored 30 on the economics pretest and 61 on the economics EOCT. His highest quiz scores were for Unit I: Fundamentals; Unit II: Price and Markets; Unit IV: Money, Banking, and Finance; Chapters 13 and 14: Unemployment, Inflation, and Tax; and Chapters 15, 16, and 17: Fiscal Policy, Monetary Policy, and Trade. Alvaro was the speaker in his first group, the Brainiacs, composed of five members, and the writer in his second group, the A-Team, composed of four members. The Brainiacs achieved one Super and three Great team improvement award designations for Units I through III and Supply and Demand. Alvaro shared the highest individual improvement score in the group with
Juan, who was the leader. In the second grouping, the A-Team, Alain began well with a high improvement score, but he missed two quizzes during that grouping and ended with a low individual improvement score. His overall individual improvement score was the lowest for that team. However, he also helped the A-Team earn one Super team improvement award.

Alvaro demonstrated excellent intellectual ability, but he was also the class clown and could be disruptive occasionally. He wanted to play college basketball. When basketball practice began, Alvaro was frequently tired and sleepy in class. From the surveys, Alvaro knew that he learned best when he could ask questions of the instructor individually, as well as share in a lively group or whole class discussion. Additionally, he preferred to prepare for tests by taking notes, by listening carefully to the instructor, by asking questions, and by repeatedly studying independently.

Alvaro believed that learning in a group was fun as long as everyone cooperated, helped each other, and tried to stay on task. While he believed that he could focus more easily when learning on his own, Alvaro stated that it could also be quite boring. When reviewing test material in his group, Alvaro learned best by going over the same information multiple times. The downside to the group work for Alvaro was that students could ask the instructor questions only as a last resort, and that the team could drift into off task behavior. He also preferred clear instruction from the teacher that allowed time for specific questions before each group review. Furthermore, Alvaro knew that he needed to listen carefully during whole class instruction as well as group review. He believed the differentiated group roles helped him to learn better in the groups and that the communication within the groups helped him to know those classmates better because they had to work together for the good of the team and each other. Alvaro did not think the team improvement scoring method for the groups made him a better individual test taker.
In terms of content, Alvaro stated that he had gained a better understanding of economics during this cooperative learning case study. This was especially significant for him when the teacher also applied the content to actual events. Alvaro was clearly skilled through basketball to understand the benefits to be gained from working together as a team, as were the students in this study who also played football or soccer in the Spring semester.

Moises

Moises was a 17-year-old Hispanic male who took all tests and quizzes in class. His English language assessment was high enough that he was monitored-only by ESOL services. Moises displayed artistic talent. He had perfect attendance during this project, and he did not work after school. He was born in Mexico and had six siblings. Moises attended the local county elementary and middle schools that fed into this high school, and he was not sure about further education or training beyond high school. Moises lived at home with his parents where Spanish was the language spoken. His cumulative high school cumulative average was 77. He earned a 72 average for this economics class. He had an economics pretest score of 28 with an EOCT score of 64. Moises had not passed all portions of the GHSGT at the time of this project.

Moises discretely displayed gang symbols, particularly the color blue. He made infrequent eye contact, spoke little, and revealed no obvious behavioral problems. He had a broad, toothy smile that lit up his face. In his first team grouping, Eggheads, Moises was the gopher. That group was composed of six members, and there were two writers. In his second grouping, Mighty Raiders, Moises was the explainer and also served as the poster artist as required. That group was composed of four members only.

In his first group, Eggheads, Moises, the gopher, helped his team achieve one Super and two Great awards for overall quiz improvement scores. In fact, he shared the highest overall
individual quiz improvement average of 27.50 out of 30 in his group with Daniel. However, this was not the case in his second grouping, Mighty Raiders, in which Moises had an average individual improvement score of 12.50 out of 30. He was the explainer/gopher in that group. His highest quiz scores were for Unit II: Price and Markets and Unit III: Business Organization and Labor.

From the surveys, Moises believed that he had learned much about economics, particularly within the context of supply and demand. He also thought he learned best within a group work setting and not as well when the instructor lectured only. However, he preferred the instructor initially to provide many specific examples that could be used for the group work. Moises thought the economics content was sometimes difficult to understand because English was not his first language, but talking through the explanations in the groups helped him in that regard. He also believed the differentiated roles were beneficial to the members of the groups functioning well together in terms of understanding what was expected of each person individually. Additionally, Moises thought the group learning process helped him to better know and interact with interesting people.

*Miguel*

Miguel was a 17-year-old Hispanic male who lived with his parents and spoke Spanish at home. He was born in Mexico and had attended elementary and middle school in a neighboring mountain county. Miguel began high school there, as well, before transferring to this high school as a freshman. He did not receive ESOL services.

Miguel planned a career in law enforcement and planned to continue his education beyond high school. He did not work after school and had passed all portions of the GHSGT at the time of this project. Miguel had a high school cumulative average of 80, and his ending economics
average was 80. His economics pretest score was 34, and his EOCT score was 70 even though he missed six days during this case study project.

Miguel was a quiet, polite, diligent student with a happy personality. He made friends easily. He had a boyish face with a mustache and an easy grin. In his first team group, Nerds, composed of five members, Miguel was the explainer. In the second group, Geek Squad, composed of four members, Miguel was the writer. He helped the Nerds achieve three Super and one Great award for overall team improvement. Miguel shared a perfect 30 individual improvement score average with Juana. He helped the second group, Geek Squad, achieve two Super overall improvement awards. He had the second highest individual improvement score average in that group. His highest quiz scores were for Unit I: Fundamentals; Unit IV: Money, Banking, and Finance; and Chapters 15, 16, and 17: Fiscal Policy, Monetary Policy and Trade.

From the surveys, Miguel knew that he learned best in class when he paid close attention to the instructor, took careful notes, and participated in hands-on learning activities. He preferred that the instructor explain everything clearly and give detailed notes for review the day before a quiz, as he relied on memorization of information for testing. Miguel enjoyed working in groups when everyone participated because that provided him with additional clues and points of view for understanding the information. He stated that the downside to working only on his own was that he might not understand or might misunderstand something. The upside to working on his own was that he could work at his own pace. The worst thing about group learning was that some did not participate.

Antonia

Antonia was an 18-year-old Hispanic female. Antonia was a capable student who was born in Mexico and attended local county elementary and middle feeder schools for this high school, as
well as a local city middle school for a short time. She was uncertain about pursuing future
education. Spanish was the primary language spoken in her home, and she lived with her
parents. Antonia did not work after school. She took her tests in the regular classroom and did
not receive ESOL services. Antonia displayed a very reserved, quiet, shy demeanor. She had a
lovely oval face; dark, straight hair, and a Mona Lisa smile.

Antonia had passed all parts of the GHSGT. Her high school cumulative was 77, and she
received a 72 for economics. Her pretest score for this project was 32, and her EOCT score was
58. Antonia was absent 7 days during the 10-week duration of this project.

In her first grouping, Eggheads, which was composed of six members, Antonia shared the
role of writer with Lupe. This team achieved two Super awards and one Great award for team
improvement averages. Her highest quiz scores were for Unit I: Fundamentals, Supply and
Demand; Unit IV: Money, Banking, and Finance; and Chapters 11 and 12: GDP and Markets. In
her second grouping, Mighty Raiders, Antonia was the speaker. This team was composed of
four members, three of whom were ESOL. A Good was the overall team improvement award
for the Mighty Raiders.

From her surveys, Antonia believed that she learned best visually with charts and graphic
organizers and when everyone was quiet during teacher lectures. She liked working in groups
because she could work with other students, which she believed helped her by answering the
questions together. Furthermore, Antonia enjoyed the social aspects of the group work in that
she was able to get to know the other group members better. However, Antonia consistently
stated in the surveys that she learned best in class when she worked by herself. In terms of how
useful the cooperative learning groups were in helping to prepare her for the EOCT, Antonia
thought it was about the same. She believed that personal motivation to learn was a more
important factor than the process. Additionally, Antonia did not think that being ESOL made a difference in her understanding of the economics content.

**Marguerita**

Marguerita was a 17-year-old Hispanic female. She was ESOL monitored-only and received standard accommodations only based on her high level of language assessment, and she took all of her quizzes and tests in the regular classroom. Marguerita was born in California and attended elementary school in Arizona. She also attended the local city middle school and the local county middle school that fed into this high school. Marguerita lived with her parents, and Spanish was the primary language spoken in her home. Marguerita planned to attend college, and she had passed all parts of the GHSGT. She also indicated that she would be willing to attend a local compensatory school and summer school in order to remain on track for graduation. She had long dark hair, a round face, full lips, and soft, expressive brown eyes.

Marguerita’s cumulative high school average was 82, and her ending economics grade was 70. She did not work after school. Her pretest score was 27, and her economics EOCT score was 56. She missed class twice. Her highest quiz scores were for Unit III: Business Organization and Labor and Unit IV: Money, Banking, and Finance.

Marguerita’s first group was the Smarties, which was composed of five members, and she was the gopher. Her team improvement scores were high for all four quizzes. Her team earned two Great and two Super achievement awards. This group generally worked well together primarily due to their ability to share ideas. They were an eclectic group with Paul, the comedian and leader; Shawntay, the writer; Isabel, the speaker; and Josh the explainer. Marguerita and Shawntay had the best overall attendance. Paul had the highest average improvement scores for the first grouping. However, Marguerita had the highest average
improvement scores in her five member second grouping, Millionaires, but they achieved only one Super achievement award.

In her survey responses, Marguerita stated that she remembered the instructional material best in class when she could concentrate (when others were quiet) and when she received whole class instruction first from the teacher, especially just before group time. She particularly liked Mrs. Jones, the teacher.

On the one hand, Marguerita believed that she could learn more in her group, but on the other hand, she also believed that she could score higher on tests (learn better for recall) when she studied and read on her own. Paul, the leader in the first group, was quite comical and could be a distraction for the more serious Marguerita. She stated that she did not like to work in the same group as Paul for that reason. However, she thought everyone in that first group was mostly helpful when they did their work, especially the explainer, Josh, and the speaker, Isabel. Marguerita viewed the sharing and discussing of ideas as the most important and beneficial aspects of the cooperative learning experience.

By the end of the project, Marguerita stated in her survey that the cooperative learning process had been most helpful for her in terms of preparing for the economics EOCT and she more than doubled her pretest score, even though she did not pass the EOCT. However, she stated repeatedly that she preferred to work on her own.

Marguerita believed that it was necessary for her to try to memorize all of the instructional material in order to pass the GHSGT and the economics EOCT. She did not believe that speaking Spanish as her first language was a problem for her when learning economics content.
Lucila was a 17-year-old Hispanic female who was born in Mexico. Her cumulative high school average was 75 at the beginning of the semester. Her ending economics grade was 71, and she scored 54 on the economics EOCT. Her pretest score was 43. She had one absence during this project. She was ESOL with standard testing accommodations, monitored-only, which meant that she took all tests in the classroom. Lucila was permitted to have extended time for tests and could have test directions repeated in English only. Lucila, a good student, worked diligently in class and always appeared to be serious about the class work. She attended elementary school in Mexico and attended a local county middle school that fed into this high school. She had attended Phoenix in the evenings to stay on track to graduate, and she wanted to return to Mexico after graduation in order to further her education because she did not plan on further education or training in the United States after high school graduation. She had grandparents still living in Mexico. Lucila lived with her parents, and Spanish was the language spoken in the home. She had not passed the science and social studies portions of the GHSGT at the time of this project. Lucila was petite with straight, dark hair that was parted down the center. She had wide set dark eyes and a pleasant smile with dimples.

Lucila was the speaker in her first group, Go Dawgs, composed of six members, and the writer in the second group, Mighty Raiders, composed of four members. The Go Dawgs earned a Great achievement for Unit III. However, in terms of improvement points, Lucila was always the overall low scorer in that group of six. In the second group, Mighty Raiders, Lucila achieved higher self-improvement points, but she still had the lowest overall scores. That team of four never achieved an overall award level above Good. Quiz scores for Lucila were highest for Unit

Lucila understood that she learned best from direct, explicit teacher instruction as well as repetition, memorization, and homework. She was an auditory learner, a good listener who benefited from taking extensive notes. Therefore, Lucila appreciated it when other students were quiet and did not interrupt the teacher or the group leader or speaker. However, even though she was primarily an independent learner, Lucila did express an appreciation for the groups in which she worked as providing some security for help when she needed it. The key to helping Lucila make sense of economics was helping her to understand economics vocabulary.

In the focus group interviews, Lucila was adamant that she preferred to learn on her own by memorizing her notes. However, she also enjoyed being in the groups because she already knew most of the people in them. Additionally, Lucila believed that she became a better test taker as the result of being in the groups, although her quiz scores do not necessarily reflect that.

Deisy

Deisy was a 17-year-old Hispanic female who lived with her parents and seven siblings and spoke Spanish at home. She was born in Mexico. Deisy had passed all portions of the GHSGT and had attended summer school to stay on track for graduation. She had received ESOL services with testing accommodations but was being monitored-only at the time of this case study. Deisy was absent twice during this study. Deisy had attended elementary school in Mexico and attended a local county middle school that fed into this high school. She worked 25 hours per week and planned to attend the local college. Her cumulative high school average was 83. Her economics ending average was 73. She had a pretest score of 25, and her economics
EOCT score was 64. Deisy was very pretty with even features, long dark brown hair, a heart shaped face and large dark eyes.

Deisy was the gopher in her first group, Nerds, and the speaker in her second group, Millionaires. Both groups were composed of five members. Deisy helped the Nerds earn three team Super achievement awards. She and Miguel contributed the most in terms of total individual improvement points to the team, which was very strong overall.

Initially, Deisy did not appear to be serious about the group work. However, upon further observation, she was very quietly helping to complete the group assignments. Her first group, the Nerds, was composed of several strong personalities. Because Sonia was pregnant and had a high number of absences, Deisy was usually the only girl in the group, which also had several dominant boys in key roles. Deisy basically went about doing the work while appearing to ignore the talk around her. However, she knew that she was an auditory learner, and she was able to listen selectively as well as work on her own within the group simultaneously. She was neither a dominant group member nor a communicator, except with Sonia, who was absent much of the time. She always tried to help Sonia with her group work role, which was the writer.

In her second group, Deisy was the speaker, a role with which she often did not appear to be comfortable. She helped the Millionaires achieve a Super award for Unit IV: Money, Banking, and Finance. Her highest individual quiz scores were for Supply and Demand; Unit III: Business Organization and Labor; and Unit IV: Money, Banking, and Finance.

From the surveys, Deisy stated that she learned best when she paid close attention to the instructor. Additionally, Deisy preferred the instructor to provide detailed information while concretely explaining or demonstrating abstract information as much as possible. Talking about the learning activities in her group was helpful for Deisy when everyone participated. Deisy
believed that supply and demand were the most important economics concepts she learned. Due to an absence, she did not participate in the focus group interviews.

Isabel

Isabel was a 17-year-old Hispanic female who lived with her parents and eight siblings, and they spoke Spanish at home. She was born in Mexico and attended elementary school there. Isabel was a very capable student, and she worked after school approximately 15 hours each week. She had passed all portions of the GHSGT and planned to attend the local college. Her cumulative high school average was 87, and her ending economics average was 82. Her economics pretest score was 34, and her EOCT score was 86, the third highest increase (52 points) in the class. Isabel had been exited from all ESOL services before this study began. Therefore, she was not monitored. She was absent six times during this project. Isabel looked very mature, appearing older than her age. Her demeanor was always very serious. She had wide, expressive dark eyes and long dark hair.

Isabel attended the local county middle school that fed into this high school. Isabel loved to socialize with the other students which often caused her and them to be off task. In her first team grouping, Smarties, Isabel was the speaker. Her second group was the Geniuses, and she was the writer. Each group was composed of five members. Isabel helped the Smarties to achieve two Super and two Great group achievement awards. The Geniuses achieved one Super achievement award, and Isabel had the second highest individual improvement score average for that team. Her highest quiz scores were for Unit I: Fundamentals, Unit II: Price and Markets, and Chapters 11 and 12: GDP and Markets.

Based on the individual surveys, Isabel thought she learned best when she was able to pay focused attention when the instructor delivered a short lesson that was both interesting and
precisely targeted to the specific information on the test, and when the other students were also actively participating. Isabel preferred the instructor to teach to her directly, especially when that was one on one. She knew that she remembered the information well when reviewing for a test by constant repetition of vocabulary and definitions. Isabel relied primarily on memorization when studying for quizzes or major tests.

Isabel benefited the most from group work when everyone liked each other and when they were agreeable and conscientious about completing the assignment correctly. Isabel did not like interruptions within the group because she thought they impaired her ability to focus. Her overall perception of the group learning process was that, while she enjoyed the potential positive social aspect of it if group members liked each other, she did not find the process helpful to her overall learning because she did not think that most of the members of her groups performed as well as they should have. Isabel believed that a few individuals within each of her two groups were responsible for the quality of most the work. Therefore, it was less of a shared work experience. Furthermore, she did not want to be responsible for having to work closely with people whom she believed to be personally disagreeable or insulting. That was an additional burden for her, and she resented it.

From the focus group interview, Isabel did not think her first language of Spanish was a major factor in her understanding of economics content for the EOCT. It was, as she stated, not a hindrance to her, which was also revealed in her test score.

Lupe

Lupe was a 17-year-old Hispanic female who lived with her husband and one child. She was born in Mexico, and English was spoken in her home. Lupe did not receive ESOL services. Her cumulative high school average was 82, and her ending economics grade was 70. Lupe scored
33 on the economics pretest and 55 on the economics EOCT. She was absent 16 days during this project and missed one quiz. Lupe attended the local county elementary and middle schools that fed into this high school, and she planned to attend the local college following graduation. She often appeared to be unsure of herself to the point of exhibiting low self-esteem in general. She rarely smiled and wore quite a lot of makeup. She was petite with large eyes and unusually shaped eyebrows.

In her first team group, Eggheads, which was composed of six members, Lupe was the writer, and she shared that role with Antonia. Her second team group, A-Team, was composed of four members, and Lupe was the explainer. She helped the Eggheads achieve two Super and one Great overall improvement awards, while the A-Team achieved only one Super award. Her highest quiz scores were for Supply and Demand and Chapters 11 and 12, GDP and Markets. Her highest overall improvement scores were in her first grouping, Eggheads.

From the surveys, Lupe understood that she learned best when was able to focus closely on the instructor without distractions, especially when the instructor explained content carefully before distributing the worksheets. Additionally, Lupe stated that she learned well in her groups, but only when everyone worked well together and shared ideas. She believed that while she was capable of reviewing on her own, it was very useful to share ideas with others when learning new instructional material that might be difficult to understand. Lupe was absent from school on the day of the focus group interviews.

**Sonia**

Sonia was a very pretty 17-year-old Hispanic female. She was identified as ESOL monitored-only with standard testing accommodations, which meant that she took all quizzes and tests in the regular classroom. Sonia was pregnant, and she missed 28 days and one quiz during this
project. However, she returned to school within two weeks of delivering her daughter. Sonia was born in Mexico. She had five siblings and lived at home with her parents where Spanish was the language spoken. Sonia attended the local county elementary and middle schools that fed into this high school. She planned to further her education and wanted to study to become a nurse (RN) at the local college. She had not yet passed the science portion of the GHSGT at the time of this study, and she was willing to attend summer school in order to complete requirements for graduation, if necessary. She did not work after school. Her cumulative high school GPA was 83 with an ending economics average of 72. Her economics pretest score was 29 with an EOCT score of 47.

Sonia was the writer in her first team grouping, Nerds. There were five members of that group. She was the speaker in her second group, Geniuses, which was also composed of five team members. Her highest individual quiz scores were for Unit I: Fundamentals and for Supply and Demand, which was the second quiz. Sonia helped the Nerds achieve one Great and three Super overall team improvement achievement awards. She shared the second highest individual improvement score average with Luke. Sonia helped her second team, the Geniuses, achieve one Super overall team improvement award. Her personal improvement score average was the second lowest on that team, and she missed one quiz.

From the surveys, Sonia stated that she learned best when the lesson was interesting, when the instructor held eye contact with the students, and when she was actively participating in the lesson. Sonia really enjoyed the cooperative group learning experience, and she believed that it enabled her to learn more through talking and interaction, especially by going over the study guide together. Furthermore, she believed that the improvement point system helped the groups to function more effectively and that the differentiated roles helped everyone to study the content
in a more deliberate, focused manner. That was particularly true for her first group, the Nerds.

Sonia consistently believed that she would pass the economics class as well as graduate on time. Sonia believed that the economics vocabulary and content were more challenging for her because her first language was not English.

Sonia was a good example of a student who could have had more than one logical excuse for giving up or for not graduating on time. She appeared to have had a good support system at home, and, as young as she was, Sonia was equipped with maturity, adaptive coping skills, stamina and perseverance. She never complained or made excuses for herself. Sonia brought her baby daughter, Brittany, to visit the class one afternoon in early December when the class shared pizza.

**Blake**

Blake was an 18-year-old white male who was quiet but quite opinionated. He was served by ESS because he was mildly LD in reading. Therefore, Blake had an IEP with testing accommodations. He was permitted to take tests and quizzes with an ESS teacher in another classroom. He was also permitted additional time, if needed, to take those tests. Blake lived with an older sister, and English was his primary language. He was tall and lanky with long, dark bangs and a large mouth with teeth that protruded slightly. His deep set eyes twinkled when he smiled.

Blake attended local county elementary schools all over the district. He attended a middle school that feeds into this high school, and he attended Phoenix, a special purpose compensatory high school created and supported by both local school systems, at night to stay on track for graduation. Students could attend Phoenix high school full-time only during the day and graduate from Phoenix high school, or students from the county and city high schools could
attend in the afternoon and evening to take a particular course in order to remain on track for graduation at their high school. Blake worked 20-30 hours per week, and he wanted to attend Universal Technical Institute. He planned to help run the family auto parts business. Blake was always helpful, honest, and dependable. He was also quite thoughtful in the focus group interview. For instance, Blake suggested that members of each group might be permitted to choose their role for the second round of groupings.

In his first group, Nerds, which was composed of five members, Blake was the speaker. He was the leader in the second group, Millionaires. The Nerds achieved three Super awards, although Blake’s were the lowest improvement grades. That group, as a whole, worked well together. The Millionaires, his second group, which was also composed of five members, achieved one Super designation. Blake was absent nine times with one absence being on a quiz day. His highest quiz scores were for Unit III: Business Organization and Organized Labor and Unit IV: Money, Banking, and Finance.

From his surveys, Blake believed that he learned best when learning on his own through repetition and review, but he also appreciated the opportunity to share and discuss the information with partners who were serious about the work. However, distractions caused by team partners who were disinterested or not contributing annoyed him. Overall, however, Blake believed the team competitions to be useful and effective.

Blake’s cumulative high school average was 73. His economics final grade was 71. His pretest grade was 30, and his EOCT was 54. He also needed to retake and to pass the math and science portions of the GHSGT in order to graduate on time.
Mark was a white 17-year-old male who was ESS. Mark was LD with an IEP and testing accommodations, which meant he could take economics quizzes and tests, including the EOCT, with an ESS teacher in another classroom. He was allowed additional time to complete tests. Tests could also be read aloud to him. He was a very good student, polite, helpful, and eager to please. He was tall and slender with sandy blonde hair, green eyes, and even features. Mark had great common sense about everything. He was born in California and lived with his mother. He attended local city elementary and middle schools as well as a local county middle school that feeds into this high school. Mark planned to attend college. He had passed all of the GHSGT, and English was the primary language spoken in his home. He did not work after school.

Mark was also constructively critical in the focus group interview. Additionally, he recommended that some of the group worksheets be graded as class work each time or that the teacher go over the answers after CL group work as a whole class review. Mark did not think that having the answer key available to each group was a good idea because he thought it discouraged some group members from being as serious about the work.

The cumulative high school average for Mark was 80.3. His economics ending average was 70. He scored a 47 on the pretest and a 55 on the EOCT, which he took with an ESS instructor. Mark was the explainer in his first group, the Brainiacs, and a gopher in his second grouping, the Quiz Kids. Each group was composed of five students. His best quiz scores were for Unit II: Prices and Markets, and Unit IV: Money, Banking, and Finance. He missed one quiz.

In terms of improvement points, the Brainiacs achieved a Super and three Great awards. However, Mark’s scores were low for this first grouping, the lowest of the entire group, and he was absent for one quiz. He was absent nine times during this project. Furthermore, he did not
appear to enjoy being the explainer for that group. Matt’s second group, the Quiz Kids, earned one Super award, and his improvement scores averaged the highest in that group. Mark was less overwhelmed by the members in his second group. Additionally, his role as the gopher in that group afforded him more flexibility in terms of greater personal participation.

From the surveys, Mark believed that he learned best on his own when he used a workbook and when the other people in class were being quiet and he could concentrate. He preferred for the instructor to give step by step whole class content explanations and instructions, and he did not like videos or groups. However, Mark did not mind working in the groups unless everyone was trying to talk at once. He admitted that when he worked on his own, he would forget things and that he only completed the assignments on his own “sometimes.”

Mark personally enjoyed economics as a “big part of life.” In terms of the group work, Mark stated several times that he cared about what he was doing but did not learn much in groups with others who did not care. Furthermore, Mark did not believe that either the differentiated group roles or the team competitions helped him to learn the content better, to become a better test taker, or to make new friends. In fact, Mark did not believe that his team members were generally supportive of his learning. Mark clearly preferred traditional whole class teaching as the best way for him to learn.

Luke

Luke was an 18-year-old white male who lived with his parents, and English was his primary language. Luke suffered brain trauma his freshman year due to a four-wheel ATV accident in which his girlfriend was killed. He spent over a year recovering physically from the accident. He asked many questions in class, some of which were off-topic. Luke was very bright, and he
could dominate a group vocally. He had long bangs and wavy dark hair that he tried to control by combing it close to his face. Luke had a bright, toothy smile.

He was in OSS (Out of School Suspension) for two weeks during the study for disciplinary reasons. These were counted as unexcused absences. Therefore, Luke had 21 total absences. He attended a local county elementary and middle schools that fed into this high school. Luke worked 25 to 30 hours per week, and he planned to attend the local college. His high school cumulative average was 80, and his ending economics average was 77. Luke scored 23 on the economics pretest and 83 on the EOCT. He had not passed all of the GHSGT and indicated that he would attend summer school in order to graduate if necessary.

Luke earned his best quiz scores on Unit III: Business Organization and Labor and Unit IV: Money, Banking, and Finance. In his first cooperative learning grouping, Nerds, which was composed of five members, Luke was the leader and helped his team earn three Super achievement awards. His team improvement scores were consistently high. In the second grouping, Geniuses, also composed of five members, he was the gopher and received the lowest team improvement scores. That team received one Super achievement award for Unit IV. After that, Luke’s scores declined considerably due to disciplinary absences. Class work and quizzes may not be made up when the absences are due to disciplinary reasons. They are considered the same as unexcused absences.

From the surveys, Luke understood that he was an auditory learner. He always wanted to hear what other people thought and preferred the class to be quiet so that he could both hear and participate. Luke also learned best when Ms. Jones gave many real life examples before the group work in order to make the abstract content more concrete. He stated that he was interested in economics and believed that the cooperative group work was most beneficial to him when all
members participated together in completing the work. Sometimes this was probably difficult for them to do when Luke dominated the discussions.

Luke believed that he learned best on his own when preparing for a test, and he did not believe that the cooperative learning groups helped to prepare him for the EOCT. Furthermore, Luke did not believe that the differentiated roles in the groups helped him to learn the content either. Additionally, Luke did not think that the group interactions helped him to be able to know others in the class better. He did, however, believe that the team improvement scoring method encouraged him to become a more productive team member and test taker. He enjoyed the pizza rewards very much.

Josh

Josh was a white 17-year-old male who received ESS because he had a slight learning disability in mathematics. He was monitored-only for this by ESS, which meant that he took all of his economics tests in the regular classroom. Josh was quiet and achieved perfect attendance. He was an only child and lived with his parents. Josh had attended elementary and middle schools that fed into this high school. He planned a career in business and also planned to attend the local college. His cumulative high school average was 80, with an economics overall grade of 76. Josh scored a 28 on the pretest and a 68 on the economics EOCT. He needed to pass the science portion of the GHSGT at the time of this project. Josh had straight black hair that he combed toward his face with long bangs, large brown eyes that turned down at the corners, a long nose, and sharp features. He was trying to grow a mustache.

Josh was the explainer in his first group, Smarties, which was composed of five members, and the leader in his second group, Geek Squad, composed of four members. His highest quiz scores were Unit 1: Fundamentals; Unit IV: Money, Banking, and Finance; and Chapters 11 and 12:
GDP and Markets. Each of those teams achieved two Super team awards. In the first group, Josh had the lowest overall individual improvement score, but he had the highest individual improvement score in his second group in which he was the group leader.

Josh was primarily a visual and an auditory learner. In the survey responses, he stated that he learned best when the teacher explained the topic clearly, showed a movie, allowed him to work at his own pace, and when the other students were quiet. Additionally, Josh believed that he reviewed best for a test by doing the work himself. Furthermore, he did not think that he was helped by a teacher review before the team group review. He was adamant in the focus group interview that he did not like to work in a group and that he did not learn best in a group, including the group activities. He definitely understood how he learned best, which was on his own, at his own pace, and audio-visually. He was motivated to do the work either on his own or within the group context. However, he admitted that working groups made the work easier, but he did not see any benefit to the differentiated roles. Josh was not concerned about passing the economics EOCT to the point of being cocky about it. He always believed that he would pass, and he almost did.

Daniel

Daniel was a white 17-year-old male who lived with his parents and worked 40 or more hours per week as a bus boy at a local franchise steak house restaurant. Daniel was a conscientious student, and he would have excelled in a college preparatory class. He had attended a local city elementary school and a local county middle school that fed into this county high school. He had passed all portions of the GHSGT at the time of this study and planned to attend the local college. Daniel had a cumulative high school average of 81.4 and an ending economics average of 77. His economics pretest score was 28 with an EOCT score of 80. The highest quiz scores
for Daniel were for Unit I: Fundamentals; Supply and Demand; and Unit IV: Money, Banking and Finance. He missed two days during this case study project. Daniel had a slender build with neatly groomed straight auburn hair and short bangs, huge dimples, and an ear to ear, grin.

Daniel was the speaker in his first group, Eggheads, composed of six members, and the gopher/speaker in his second group, A-Team, composed of four members. He helped the Eggheads achieve one Great and two Super team awards. He and Moises each posted the highest individual quiz improvement points for units one through three. Daniel helped the A-Team to achieve one Super team award, and he had the highest individual improvement point average for units four through the quiz on chapters 15 through 17.

Daniel stated in the surveys that he learned well in a group, but he preferred to choose his own group. He enjoyed the team work when others cooperated and treated the work seriously. Additionally, Daniel believed that he could comprehend better when working on his own. He understood that he was primarily a visual learner. Daniel was not an auditory learner, but he preferred the instructor to present thorough oral explanations before the group work reviews.

Daniel believed that he had gained the greatest insights into economics based on understanding supply and demand. This was also reflected in his quiz score on that concept. From the focus group interviews, Daniel emphatically believed that the cooperative learning experience, as used for the economics EOCT review in this class, had been instrumental in helping to prepare him effectively for that test only. However, he was not certain that the cooperative learning strategy had made him a more effective test-taker in general. Furthermore, Daniel did not believe the differentiated roles within the groups had made a difference for him because he thought they all blended together.
David was a 17-year-old white male. He lived with his parents and spoke English at home. David was sociable and somewhat mischievous. He wore his hair cut very short in a crew cut. David was sharp witted with a dry sense of humor. He was a drummer in the school band. He checked out of school often before this class, and he accumulated 11 absences during this project. David attended the local county elementary and middle schools that fed into this high school. He worked after school 20 hours per week, and he planned to attend a neighboring state university to major in music.

David had a cumulative high school average of 77, and an ending economics class average of 74. His pretest score was 28, with an EOCT score of 68, and he had passed all portions of the GHSGT. In his first grouping, Go Dawgs, composed of six members, David shared writer responsibilities with Denzel. On the second team, Geniuses, David was the explainer. He helped the Go Dawgs achieve one Great team score improvement award, and he helped the Geniuses achieve one Super team score improvement award. His highest personal quiz scores were for Unit III: Business Organization and Labor and Unit IV: Money, Banking, and Finance.

From the surveys, David stated that he preferred to learn on his own. While he enjoyed the social aspects of getting to know the people in both groups and the feeling of involvement, he believed that he learned more efficiently by viewing the videos and from direct teacher instruction. While he liked and respected his groups, David did not think the group review sheets during cooperative learning were effective for him in terms of higher quiz scores. However, he did believe that working on the group review sheets was helpful for others in his groups. David did not particularly enjoy the study of economics. He worked after school for 20 hours per week, and he was sometimes sleepy in class. Overall, David stated that the
differentiated group roles were helpful to the team process and that the team scoring system and improvement points helped him to challenge himself.

**Kimberly**

Kimberly was a 17-year-old white female. Her cumulative high school average was 83, with a pretest of 34, and an economics ending grade of 71, and an EOCT grade of 58. Kimberly needed to retake some portions of the GHSGT, which she passed later in the school year. English is spoken in her home, and she did not work after school. She lived with her father and step-mother and attended local county elementary and middle feeder schools for this high school. Kimberly stated that she would like to attend Dalton State College. She had long, straight brown hair and a swift, broad smile and an electric, somewhat explosive, personality.

Kimberly could become a behavior problem sometimes, as she became easily excited, agitated, distracted, or annoyed and would have difficulty calming down. This was often the case in her groups, as she could become quite outspoken and loud. Kimberly was out-going and would whole-heartedly try to cooperate if she “liked” those in charge or believed that they “liked” her. She liked this researcher. Therefore, Kimberly was not only cooperative, but she obviously went out of her way to be a team player during group observations. Ms. Jones stated that Kimberly was often in trouble on other days for being off task or for becoming argumentative with other students.

In her first team grouping of six members, Kimberly was the gopher, a role she shared with Joaquin, and she helped her team, Go Dawgs, earn a Great certificate award on the Unit III: Business Organizations and Labor. Her team improvement scores increased steadily, and she responded positively to the others on her team. That is, she liked them and believed that they liked her. Observationally, Kimberly could be a distracting influence for the group if her role
was not one that kept her busy, if she did not perceive it as important, or if she did not get along well with team members. In the second grouping of four members, Kimberly was the leader, and she helped her team, A-Team, to achieve a Super certificate award on Unit IV: Money, Banking, and Finance.

Quiz scores were erratic for Kimberly. Her highest quiz scores were for Prices and Markets and Business Organizations and Labor. She consistently had difficulty with long-term memory retrieval. A concept that she appeared to understand one day did not necessarily transfer into a high quiz score for Kimberly the next day. Taking the individual quiz immediately after a thorough teacher-guided review was important in order for Kimberly to be able to focus long enough to do well, although she never completely recognized that. If she did not do well on a quiz, she acted as if it were an outcome over which she had no control. It was suspected that was a defense mechanism because she seemed to understand subconsciously what helped her learn best. However, poor retention, particularly when it was required for higher order thought processing, was something she struggled with constantly.

In the surveys, Kimberly responded that she learned best when she could concentrate on the teacher and by using flash cards and notes for study at home, as well as by completing hands-on activities by sharing the work with other group members. She believed group work was most helpful for her when everyone did what they were supposed to do quietly, although she was seldom quiet.

Kimberly was adamant that the group work helped her, but she preferred to learn material on which she would be tested one on one. Kimberly indicated that she thought the team process helped her to become a better test taker as well as a more productive team member. She enjoyed the group interaction and the differentiated roles. While Kimberly clearly understood what she
needed to do in order to be successful within the group, she also understood that she could become easily distracted.

Kimberly indicated in the focus group interviews that she preferred to work in a group, and she believed that she had learned better that way. That is probably not a realistic assessment in terms of grades only. However, when she was in the leader role, it was observed that Kimberly took what she did very seriously, including the work, and did her best to treat everyone in the group positively and fairly. In that respect, Kimberly revealed that she had the capacity to rise to the occasion in order to get the group to function well together, and she viewed that leadership responsibility as hers. However, while she was the gopher, Kimberly may have taken her role seriously, but she did not have to give it as much effort in terms of the overall success of the group. Therefore, she did not.

Kimberly was very outspoken about not wanting to change groups after five weeks. She had become comfortable with her first group and complained often about missing them. However, it was obvious in that second grouping that Kimberly truly rose to the occasion with her role, revealing a maturity and a sense of altruistic dedication that she had guardedly kept carefully hidden. Kimberly did not want others to view her as vulnerable. Perhaps Antonio, who had been the leader in her first group, was a positive role model for Kimberly. When she finally decided to adjust to her new team members and the social give and take within the second group, the naturally competitive Kimberly wanted to help her team do well. Her EOCT score probably was not a good overall indicator of what Kimberly learned, but it was very likely better than she would have made with only whole class instruction. Kimberly was absent four times during this study.
Jennifer

Jennifer was a 17-year-old white female who transferred from another high school in this district. Jennifer was very intelligent but could become a behavior problem, as she interrupted others too much and often talked too loudly. She had straight dark hair that framed a heart-shaped face with sad eyes. Jennifer was in groups both times in which she was the only girl. She attended several of the county elementary and middle schools throughout the district. She worked 20 hours per week, lived with her parents, spoke English as a primary language, and planned to attend the local state college and expressed an interest in also attending the University of Georgia. Jennifer had not passed all of the GHSGT when she participated in this study, but she passed everything the following semester. Her cumulative high school average was 71. Her economics ending average was 70, with a pretest of 35, and an EOCT of 65.

Jennifer was a writer in her first team grouping of five members, the Brainiacs. Her team achieved a Super improvement score for Unit III: Business Organizations and Labor and Great awards for the previous three quizzes. This group worked very well together, and Jennifer’s improvement scores revealed that for the duration. Jennifer was the explainer for her second grouping of four members, the Geek Squad, which achieved Super status twice. She began well, but her improvement points diminished toward the end of the term. Jennifer was absent seven times during the 12-week project, but she did not miss any quizzes.

In her survey responses, Jennifer stated that she learned best when she worked hands on, when other students were quiet, and when the group was doing things together. She believed that differentiated role cooperative learning helped her through the explanations, and she liked that one person was in charge of each responsibility. However, she also enjoyed working alone and believed it gave her a sense of accomplishment.
Tiffany

Tiffany was a white 17-year-old female. Tiffany had to work diligently to understand economic concepts. She always needed additional instructor help and wanted explicit directions in order to complete the work, particularly the standardized worksheets that accompanied the text. She wanted specific, simple answers to worksheet questions that would sometimes be expressed abstractly or that could have more than one appropriate answer depending on the scenario. She became easily confused and experienced anxiety about what was expected of her, as well as the overall group, in both of her team groupings. In terms of the topics, Tiffany stated that understanding economics would be of great value to her in life, and she seemed motivated to learn it as well as she could for the sake of her future well-being, as well as for the necessity of high school graduation.

Tiffany attended local county and city elementary schools and local county middle and high schools all over the district before coming to this high school. She planned an immediate career in the Air Force and a future career in law enforcement. Tiffany stated that she wanted to attend the local college or a state university. Tiffany had a cumulative high school average of 84. She lived with her parents and did not work after school. She was absent six times and missed one quiz during this project. Tiffany needed to pass the science portion of the GHSGT. She completed this economics class with a 71 average. Her economics pretest score was 29, and her EOCT score was 60. Tiffany had a full, round face, wide set eyes, long straight auburn hair, and a sweet smile.

In her first group, Eggheads, which was composed of six members, Tiffany was the explainer. In the second group, Quiz Kids, composed of five members, she was the writer. Tiffany achieved the highest quiz scores for Unit I: Fundaments; Unit III: Business Organization and
Labor; and Chapters 15, 16, and 17: Fiscal Policy, Monetary Policy, and Trade. She helped the Eggheads achieve one Great and two Super team achievement awards. Her overall individual improvement point average was one of the highest in that group. The Quiz Kids achieved one Super designation, but it was without Tiffany. She was absent for the Unit IV quiz, and her other quiz improvement scores were low, giving her the lowest individual improvement score for the Quiz Kids.

From the surveys, Tiffany viewed herself more as an individual within the groups than as an actual team member. She understood that she learned best by concentrating on what was being said and reading the questions carefully on the worksheets, but she also acknowledged that she preferred the instructor to constantly direct her. While she enjoyed meeting new people in the groups and sharing ideas by listening to what they had to say, Tiffany did not believe that all people in the groups were willing to learn.

In the focus group interviews, Tiffany did not think that the differentiated roles helped her to better understand the economics concepts within her groups. She thought the cooperative group learning was helpful to her only some of the time, primarily when everyone was quiet and on task and when she liked those in her group. Additionally, Tiffany did not think the cooperative learning groups helped her to become a more productive team member or a more effective test taker.

For Tiffany, the cooperative learning team experience appeared to be an additional requirement or burden for her to bear. She wanted direct instruction and straightforward, simplistic answers to all questions. She really wanted to be assigned a task and to be told step by step what to do; when, where, and how to do it within a set amount of time; and to be reassured that it was correct when she completed it. The give and take synergies of team dynamics that
can foster a richer, more complex exploratory learning experience was not her learning
preference from the outset, and Tiffany was not willing to try to adjust effectively for it.

Denzel

Denzel was a 17-year-old black male. He received ESS instructional and testing
accommodations, and he took Ritalin for ADHD. He was permitted to take quizzes and tests
with an ESS instructor in another room. The ESS instructor could read the quiz or test aloud to
Denzel and provide additional time for him to take a quiz or test. According to his IEP, an ESS
teacher was supposed to co-teach in the classroom with Denzel each week. However, an ESS
was never present with Ms. Jones in the classroom at any time. Denzel attended the local county
elementary and middle schools that fed into this high school. He was not certain about further
education. Denzel lived with his parents and did not work after school. He had not passed all
portions of the GHSGT at the time of this study. His cumulative high school average at the start
of this study was 83. His economics ending average was 70. His pretest score was 24, and his
economics EOCT was 49. He was absent from class twice. Denzel had a long face with even
features. He had very short, neat hair, wore glasses, and smiled most of the time. His demeanor
was quiet, and he was always patient, good natured, and polite to everyone.

In his first cooperative learning group, Go Dawgs, Denzel was one of six members, and he
shared the role of writer with David. In his second group, Geniuses, which was composed of
five members, Denzel was the leader. He helped the Go Dawgs team achieve one Great award
for Unit III, but he had relatively low average overall individual improvement points. However,
Denzel had high average individual improvement scores for the second grouping, which
achieved one Super award for Unit IV. The leadership role, modeled so well in his first group by
Antonio, may have helped Denzel in the second, smaller grouping.
In the first group Denzel was most often the quiet, easy going member in the midst of more assertive personalities. He always had an easy smile and seemed to take it all in stride. Luke was absent frequently in the second grouping, and Denzel was able to hold his own with the other members. His highest quiz score was Unit IV: Money, Banking, and Finance, which occurred during the second grouping.

From the surveys, Denzel thought he learned best from direct teacher instruction. Within the groups, he was helped when everyone worked to help each other and when he understood what was expected in the review sheets. Denzel believed that he had gained a better understanding of practical economics and our economic system during this case study project. He also stated that he had enjoyed getting to know students within his groups whom he might not have had more than a passing acquaintance. Denzel also believed that the team improvement scoring method had helped him to become a more productive team member and test taker.

Shawntay

Shawntay was a 17-year-old black female. She planned to attend a technical school in Atlanta. Her cumulative high school GPA was 86, with an ending economics average of 70. She always struggled with the economics content, but Shawntay never gave up or complained. Her economics pretest score was 23, and her economics EOCT score was 50. At the time of this case study, Shawntay needed to pass the science portion of the GHSGT. She was absent five days and missed one quiz. Her best quiz scores were for Unit I: Fundamentals; Unit III: Business Organization and Labor; and Chapters 15, 16, and 17: Fiscal Policy, Monetary Policy, and Trade.

Shawntay was the writer in her first team grouping, Smarties. She was the explainer in her second group, Quiz Kids. Both of these groups were composed of five members. She helped the Smarties achieve two Great and two Super team improvement awards, and her individual quiz
improvement scores were very high. This was an extraordinary group in most respects. They were a good blend of different personalities who were clearly comfortable with their roles and with working together competently for the good of team. The three girls were not overpowered by the strong personalities of the two boys. In the second grouping, Quiz Kids, Shawntay did not contribute as well in terms of overall or individual improvement points, and she was also absent due to a long term illness on the day of one quiz. However, that team scored a Super designation in spite of her absence. Overall, in terms of group dynamics, the two girls in that group were somewhat overpowered by the stronger (and louder) personalities of two of the three boys. As the explainer, Shawntay, who was basically quiet, was often out-explained by Paul and Mark. However, Shawntay did relatively well on the last quiz. She understood how she learned best, and she simply never gave up.

From the surveys, Shawntay knew from her learning styles inventory that she was an auditory and visual learner who learned best by paying close attention to the topic when the instructor first explained the content and then asked questions of the class. She enjoyed working in the groups with her friends much more than with classmates who were less inclined to get along well with others. Shawntay needed to focus and to think about what she wanted to say because she knew that she could become easily distracted. She was aided by her team talking together about the group study worksheets and activities, as well as by reviewing the material on her own for homework the night before a quiz. Shawntay did not cope well with what she described as group confusion, which she knew could cause a distraction for her, reducing her ability to focus. She found positive ways to compensate for this on her own, but she could not ignore it, and it occurred more with her second grouping, the Quiz Kids. However, she did not overtly reveal
any resentment toward that group. She took it in stride, gleaned what she could from it, and soldiered on.

Shawntay believed that understanding economics would be of practical value to her. Furthermore, she believed that she understood the content better as the course progressed, which was also reflected in her last quiz grade. In the focus group interviews, Shawntay stated that the group learning was somewhat helpful in preparing for the quizzes and the EOCT, but that there were also times when she would rather have worked on her own. She clearly preferred for the instructor to teach by asking questions similar to those that would be posed on the quiz. Additionally, Shawntay did not think that the differentiated group roles helped her to learn the content better. However, she did believe that working in groups helped her to know her classmates better and that the team improvement scoring system helped her to be productive team member. Shawntay understood how she learned best, but she was also willing to risk trying other methods, and she persisted.

Paul

Paul was an 18-year-old multi-racial male student. He was a football player for part of the football season. Standing 6’4’’ tall, and 300 pounds, “Big Paul” always had a broad smile on his face. Paul lived with his mother, girlfriend, and daughter. English was the language spoken at home. While he often identified with the black students, Paul’s mother and girlfriend were white, and he interacted well with everyone in class. He was smart, polite, and friendly. Paul was born in Florida and had 15 siblings. He had attended elementary and middle school in Florida. From his records, Paul had moved frequently within Florida during his elementary school years.
Paul visited the school nurse frequently, as he was constantly injured during football practice. He often appeared to be tired or sleepy. Paul would frequently leave school just after lunch, and before fourth period, and he missed 19 days of class during this project. He worked 15 hours per week after school. Paul stopped playing football near the end of the season, although he had tremendous athletic potential, according to the coach. Paul often expressed that his family was of the utmost importance to him. He appeared intent on being a good father and wanted to be a good provider. He always willingly produced the most recent picture of his daughter, who looked just like him.

Paul attended summer school in order to stay on track for graduation, and he completed all requirements for graduation in the summer of 2008. He had passed all portions of the GHSGT at the time of this project. He wanted to attend college, but he was not certain where or when. Paul had a cumulative high school average of 79. His economics final grade was 79. His pretest score was 32, with an economics EOCT of 76. His highest quiz scores were for Unit I: Fundamentals; Unit II: Price and Markets; and Unit III: Business Organization and Labor. In his first team grouping, Smarties, Paul was the leader. He was the speaker in his second grouping, Quiz Kids. Both groups were composed of five members each. Paul tended to become a dominant member within his groups, and this was not always appreciated by the other members. He held strong opinions. Because he was very personable and humorous, Paul often tended to socialize more than work within his groups. This caused a distraction for some group members who thought Paul did not take the tasks very seriously. Although the members of both teams liked Paul, his behavior, as well as his absences, led to some resentment among the other group members on both teams.
In his first group, Smarties, Paul helped the team achieve two Super and two Great overall achievement awards. He had an individual improvement score average of a perfect 30. Paul helped his second team, Quiz Kids, achieve one Super overall achievement award. He had the second highest individual improvement score average of 17.50.

From the surveys, Paul believed that he learned best when the instructor gave many examples and broke down the information into smaller portions during lecture followed by class discussion. He enjoyed the group learning process because he enjoyed sharing the varied perspectives of others. The part of the group learning experience that he did not enjoy was that it was often difficult to build consensus due to the differing opinions. Paul did not like to argue. However, he also did not like to compromise and would frequently overstate his point. He understood that he needed to listen more intently to the instructor and that he learned well from direct instructor review immediately preceding a quiz.

**Summary**

This chapter described the students represented in this case study demographically, including individual biographical and educational background. Their group and role interactions are also described. The data also included cumulative high school averages for the students at the beginning of the study, pretest and EOCT scores, team groupings, differentiated team roles, overall team improvement mean scores, individual improvement mean scores by team, focus group interview and survey responses, teacher interview summaries, and descriptions of each student individually and within their respective CL STAD-D groups.

Overall results were that CL STAD-D groups were more positive socially and motivationally than for individual quiz or test review resulting in passing the economics EOCT with a grade of 70 or higher. It was interesting that individual student survey and focus group interview
information sometimes conflicted with each other as well as actual group observations and other data. Students often complained that others in the group often did not perform their respective roles seriously. However, they consistently rated each other as average or above average in terms of group performance. Many students stated a preference for learning on their own, but they also believed the CL STAD-D process had been beneficial in helping them on the EOCT, but this was not revealed in the EOCT test data. When the process required the groups to change at the halfway point, the students, who had understood from the beginning of the study what would happen, temporarily rebelled against it. The ESOL students responded overwhelmingly that English was not a concern in terms of their understanding economics content, but they also stated that the EOCT questions were difficult to understand. The bilingual Hispanic girls tended work through their differentiated tasks within the groups more diligently and with less direction from within the group, and they would often unhesitatingly pair with another bilingual Hispanic girl within the group.

From interviews with other teachers at this high school who had used cooperative learning, often with these same students, those strategies had been used primarily to produce something, to practice something, such as role play for job interviews, or as a method in which to play a review game. While the four member team was common, those teachers had also experimented with other configurations, and with good results for pairs or groups as large as six. In none of those instances had cooperative learning been used expressly for processing abstract information for the purpose of review for a state mandated test. However, this information strongly indicates that the group learning structure is one that can be usefully adapted for a variety of purposes.
CHAPTER 5
CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter describes the conclusions based on the results of this case study, which confirmed the general positive social and motivational aspects of cooperative learning. The chapter begins with a discussion of the Georgia Project, local higher education, and teacher interviews from this high school, as these set the context for understanding the high school culture and CL STAD-D experience described in this case study. The conclusions and recommendations address questions concerning how these diverse students in differentiated roles assimilated and processed information within the context of group dynamics and how that might be studied in future research.

Geographically, the high school in which this study took place was located in a one-industry town in the foothills of Appalachia that has experienced an influx of Hispanic, primarily Mexican, workers and families since the late 1980s, first in the poultry industry and later in the textile industry. Responding to the immediate need to educate many new students, who were primarily from central Mexico, and who did not speak English, the Georgia Project was developed locally to bring bilingual teachers from Mexico to aid Mexican immigrant students in their transition to a different educational culture.

The local businesses, governments, and school systems have worked together diligently to accommodate immigrant families with students to educate, many of whom are now second generation community members. For example, teachers at this study site have been trained to
use cooperative learning strategies to facilitate the education of diverse students. The researcher interviewed these educators in the months before this study was conducted. They were able to provide experiences and insights about how cooperative learning has been implemented at this high school with these students, providing additional information for this study as to how these students might react to the CL STAD-D process based on previous cooperative learning experiences at this high school. More recently, the federal mandates of NCLB have presented a challenge to the local school system as some schools have often failed to make AYP (Adequate Yearly Progress) primarily due to two student population subgroups, ESS and ESOL.

**The Georgia Project Background**

Many of the ESOL monitored-only bilingual Hispanic students who participated in this case study were also educated in local county or city elementary and middle schools that participated in the Georgia Project. The Georgia Project, a locally sponsored private intervention program, was initiated with the city school system in the mid-1990s due to the sheer numbers of LEP Hispanic students inundating the city schools at that time. The other local public county school system adopted the program by the late 1990s, with the two systems sharing some resources.

A local attorney, and former United States congressman, had a daughter who was an elementary school teacher in one of the local city schools located in the area of the city where many Hispanic students lived. She informed him that it was difficult to teach curriculum content to so many immigrant students who did not speak English. Therefore, he initiated The Georgia Project as a local, private, intervention program. Currently, that particular city school is more than 99% Hispanic with the remainder of the city elementary schools more than 60% Hispanic.

A local multinational corporation CEO had business affiliations with the University of Monterrey in Mexico, and an arrangement was made to have bilingual instructors from that
university come to Georgia to provide bilingual instruction for LEP students. The city schools, with a student population about half of that of the county schools but with higher percentages of Hispanic LEP students, refurbished an older school in the portion of the city where many Hispanic neighborhoods were located, and a special purpose city International School was created. The purpose of this school was to place for a minimum of one year those students who were LEP and new to the United States in order to prepare them to enter sheltered ESOL classes and then to integrate into regular classrooms. The majority of the teachers who provided instruction at the International School were bilingual. The best overall educational results were for those students who were younger when they immigrated (even though some of the literature suggests 11-12 years as the optimum age, because such students should already be able to read and write well in their language of origin), and would therefore, be better prepared to ultimately integrate into regular classes.

After initially attending the International School for one year, many students who entered at the early elementary school level were usually able to exit from sheltered ESOL classes by middle school. The city school system has not participated in The Georgia Project since 2001, but the International School remains as a special purpose LEP school, and it also houses a special program for gifted students. The local county school system participated until 2007. The local county school system did not create a special purpose international school. The system was not as overwhelmed initially as the city school system with Hispanic students and employed the ESOL instructional model primarily until both NCLB and a growing LEP Hispanic student population prompted further concern and action. Therefore, the local county school system relied more heavily on The Georgia Project bilingual teachers from Monterrey to aid LEP
Hispanic students who initially entered the school system and required sheltered instruction before they were ready for the regular classroom.

Unfortunately, in existence over 10 years, The Georgia Project was, as of the end of 2007, defunct. Most local county school principals will admit that it has been difficult to work successfully with so many LEP Hispanic students without it. The 10-13 annual scholarships The Georgia Project provided to local Hispanic high school graduates for higher education at the local state college have also ended.

Local Higher Education

Many of the major textile mills have provided some in-state tuition assistance for full-time employees who have been able to attend the local college, which offers bachelor’s degrees in accounting, early childhood education, management, management information systems, marketing, mathematics, biology, chemistry, history, and English with secondary teacher certification options, Operations Management, Technology Management, criminal justice and social work, and an MBA offered on campus through a nearby university. Certificate-level, technical, and Associates degrees are also offered, including a specialized freshman engineering program that feeds directly into the Georgia Institute of Technology. A student may begin at the GED or certificate level and be able to earn an associate’s or a bachelor’s degree. Additionally, local textile affiliated-support businesses have offered in-house GED and Adult Literacy classes, both of which I have taught.

All of the major textile manufacturers have an articulated agreement (Education Is Essential) with the local school systems in which they agree not to hire high school students as full-time employees during the school week. When there has been an abundance of overtime work opportunity, those immigrants with families to support, either in Georgia or back home in
Mexico, who might have been able to attend such classes after work, would often choose the
overtime instead. Other local students who work part-time or on weekends and during summers
and holidays have often chosen to do so, as well. It has been unusual for the unemployment rate
to rise above 3% during the 46 years I have lived in this area, although, at 13.7% (the second
highest metropolitan area in the nation), unemployment is currently well above the norm.
Ironically, historically, the challenge for most local businesses in the past has primarily been
recruiting and retaining enough quality employees.

Traditionally, a significant number of the residents of northwest Georgia have been
considered economically disadvantaged, and Appalachian poverty has been documented
historically, since the early 1900s. Currently, approximately 37% of the local population does
not have either a high school diploma or a GED (Center for Agribusiness and Economic
Development, 2004). The dropout rate at the high school in this study, in which I taught for over
30 years, consistently hovered near the 50% rate until four years ago. An alternative
compensatory high school, Phoenix, where I have also taught at night for 17 years, was created
with shared governance by the local county and city school systems to help high school students
ages 16 and above from the area remain on track for graduation. This region of Georgia had a
long history of non-completion well before the influx of Hispanic immigration, and during the
last year I taught at the compensatory high school in 2008, more than one half of the students
were Hispanic.

The newly created Goizueta endowed chair at the college is expected to work with the local
community in order to offer tuition and grant opportunities for some Hispanic students.
Additionally, new Georgia legislation requires Hispanic college students who have currently not
been documented as legal United States residents to pay out-of-state tuition at Georgia public
institutions of higher learning. The local state college officially notified approximately 42 undocumented Hispanic students who were enrolled that they would be required to pay out-of-state tuition beginning Fall Semester, 2008. This action sends a negative message to those Hispanic students, many of whom may be undocumented, who aspire to professions requiring higher education or state certification. Assuredly, Georgia will need bilingual healthcare workers, educators, law enforcement, and social services workers.

The legal issues (social, economic, educational) that result from a lack of documentation have forced state and local governments to deal with matters that are controlled by federal law and that require federal oversight. Because the local state college is an open admissions college with a technical division, it has traditionally admitted all students who graduate from surrounding school systems without regard for legal status. Documentation has now become a local issue as a result of the legislature’s decision on college tuition.

The dilemma for many of these students has been that they find themselves in the United States because their parents brought them here, and their parents came here primarily to seek a better life for themselves and their families by providing labor resources that most chambers of commerce deemed to be necessary to the U.S. economy. On the one hand, most local Hispanic immigrants have become better off economically than they were in central Mexico. On the other hand, it has also become more difficult for them to become better off socio-economically in the United States due to a variety of factors including documentation, language, and current economic, political, and legal issues that limit access to higher education. The irony is that, in attempting to better teach diverse students with varied strategies, such as cooperative learning, and with the culturally responsive resources of such programs as The Georgia Project, opportunities for further education may now be reduced for them instead of increased. General
public sentiment and, thus, legislative initiative transformed into educational reality do not appear to be on their side at this time. However, that circumstance will undoubtedly begin to change as adjustments inevitably occur over time with new federal legislation. The demographic numbers speak for themselves, and, as the economy ultimately improves, so very likely will the votes.

Site Teacher Interviews

The teacher interviews from the high school in this case study were interesting in that, while most had received staff development training in cooperative learning, it was most often used by them for role play demonstrations in applied English such as job interviews or creating authentic group projects about careers, completing a specific assignment, such as in a chemistry laboratory, discussing character development in a novel, or problem-solving in an applied mathematics class. It was not used as an ongoing process for high stakes test preparation. More often, cooperative groups were primarily used as a strategy for competitive group games in order to review quiz items the day before the quiz, and this was often mentioned by the students in surveys as their preferred way to use cooperative learning. That was also probably because it was a simple example as well as being the most familiar to them.

It is possible that if the CL STAD-D study had lasted more than twelve weeks, then the test score outcome might possibly have improved for the class. However, that conclusion was not generally reflected in the progression of all of the testing data. Furthermore, while improvement over time was suggested by most of the early team summary improvement points during the first grouping cycle, that did not carry over during the second grouping cycle. The second grouping cycle revealed a reduction in overall improvement points as the cycle progressed. Some of that might be explained by the need to complete the economics content at a faster pace, as well as the
more abstract nature of the later macroeconomic content. Also, the students may have simply resorted to simply going through the motions by that point. Additionally, the CL STAD-D process was designed specifically to function best in a four to ten week time span. The process itself may need to be reconfigured for longer periods of study.

Ms. Jones believed the class EOCT scores were actually higher than they might have been due to overall class diversity, given her previous experience teaching economics at this high school. She also concluded that the students generally understood the concepts, but they had difficulty with the academic language on the EOCT in terms of how the questions were asked, such as in the negative. Ms. Jones planned to use this method again because she believed, as did the students and the other teachers who were interviewed for this study, that it was particularly effective for the students socially and motivationally.

Ms. Jones observed that the ESOL students generally performed better in groups due to its familial cultural structure, and she also noted in my interview with her that they “pair up automatically, especially the girls.” Each of the five other teachers interviewed for this study at this school also shared similar comments about the Hispanic girls naturally working well together, especially in pairs, to complete a task, given the opportunity. Another common thread among these interviews with teachers was policing the groups and that cooperative learning group work was not always shared equally. Some students excelled and some simply did the minimum. However, all of the teachers agreed that group learning outcomes were more positive due to social interaction. Group social interaction and shared explanations were perceived by the teachers to be the most significant factors that resulted in accomplishing specific cooperative learning goals. It would be a consideration that prior experience with cooperative learning might result in a preconceived like or dislike for the process before the study was conducted. Many of
the survey questions attempted to discern student attitudes about economics as well as cooperative learning (see Appendixes E and F).

Conclusions

The qualitative data from this study essentially confirmed the overall positive social, self-esteem, peer support, and motivational team aspects of the CL STAD-D groups indicated by the prior research literature. However, many of the students stated in the surveys and the focus group interviews that they preferred to work either independently or with a partner of their choosing. Cooperative groups were instructed to ask each other first if they had questions concerning the review sheets before asking the teacher. That was difficult as well as frustrating for some of them, as the standardized textbook worksheets could be confusing, because the required information was formatted in several different ways, such as fill in the blank, short answer, multiple choice, and explanation. Frustration often occurred when Ms. Jones was working with another student or when she was immediately unavailable for some other reason. Whenever possible, teacher-made cooperative learning content review worksheets that accompany the teacher-directed whole class instruction should be less confusing, more straightforward and, therefore, more useful in producing more positive learning outcomes for diverse students.

These students generally knew each other casually as seniors but admitted that there were many in the class with whom they had never had much social contact at all. The manner in which the CL STAD-D teams were organized was designed to encourage the students to work together, and the students responded positively to that outcome on the open-ended survey questionnaires. Furthermore, the students indicated that they would not have worked together with so many other students had it not been for the CL STAD-D group process. In focus groups,
most group members believed they had accomplished together what was expected of them for
the team within the groups, given their respective differentiated roles.

Interestingly, many of the ESOL students in the CL STAD-D groups also indicated in focus
group interviews that the guided practice group review work, although sometimes difficult to
understand, generally helped them to review the instructional content. That was especially true
for ESOL females within their differentiated group roles. Furthermore, the ESOL students did
not think that being bilingual either helped or hurt their ability to understand the content review
in groups. However, most of these seniors were no longer receiving sheltered ESOL instruction
from bilingual teachers and were being monitored-only for standard classroom instruction and
for graduation tracking purposes. That is, they took all quizzes and tests in the regular classroom
with no specific interventions, and their overall English language development was relatively
high. The only students who definitely did not think the CL STAD-D groups were useful for
guided practice review of the instructional material were the two students, one white male, Luke,
and one Hispanic female, Isabel, who achieved the highest scores, 86 and 83, respectively, on the
economics EOCT. While they did not think the group reviews helped their overall test score
achievement, they did enjoy the social and motivational aspects of participating in the groups for
their teams, which correlated with the research literature with regard to higher-achieving
secondary students.

While the students often remained on task during group work, there was a great variety within
the groupings as to the type and quality of talk. Some groups were off task more than others and
a few students appeared to struggle more with understanding the required tasks. However, the
groups usually completed the assigned task within the time allowed. Although students were
instructed to ask each other questions within their CL STAD-D groups first before asking the
teacher, groups often requested assistance from the teacher and most students admitted in the focus group interviews that they preferred to do the class work on their own and to be able to ask questions during the whole class lesson instruction with teacher guidance and prompts for the appropriate response. That may also very likely be the method with which they had become most familiar while in school. In their individual surveys, a preponderance of these students responded that they preferred a quiet classroom in which the teacher explained everything to the whole class as it would appear on the test. They also preferred that the teacher respond immediately to questions for clarification, review the pertinent information prior to the test, and then review what they had missed on the test after the test had been graded and returned. The most frequent responses on the surveys concerning what each student could do individually to improve his or her classroom learning were to listen more attentively, to take careful notes, to ask questions, or to study more. The Hispanic students also typically included memorization skills as important to improving their classroom learning.

The CL STAD-D group dynamics were interesting to observe but difficult to assess individually during each grouping. It was observed that even within a group processing review strategy such as an activity or through a cooperative learning differentiated team role, learning was most often approached by these students as an individualistic undertaking. For instance, the manner in which a team member approached a particular role frequently reflected how he or she typically approached a learning task individually as visual, auditory, or kinesthetic/artistic learner. What was already normally present in terms of how each student learned best was what often came out during the specific group roles within the team structure. Additionally, even though each group member rated each other and themselves, they admittedly became somewhat protective of each other as they formed group/team bonds. Unless someone was overtly
obnoxious, too loud, not contributing in any positive way to the group, or was often absent when
groups met, they received a modest or average rating. Group ratings by group members were
substantial or above average most of the time. It would be interesting to videotape each
individual group during each group session in order to discover if better data concerning within-
group interactions could be derived.

The smaller groups in the second grouping did not perform as well overall on the last four
quizzes as the larger groups performed during the first grouping on the first four quizzes. They
admitted overwhelmingly that they did not want to switch groups. In fact, it often took as many
as two group sessions before the students adjusted to their new roles in their second team
groupings even though those roles had been modeled in their previous groups. Some students
stated in both their individual surveys as well as in the focus group interviews that they did not
perform as well in a group with others whom they did not personally like. This was particularly
true for most of the Hispanic females and one white female. Additionally, the smaller groups
placed more responsibility on each group member as the course content became somewhat more
abstract with the study of macroeconomics and the pace of instruction accelerated as the date for
the EOCT approached. Furthermore, the team building activities at the beginning of the case
study provided more time, and possibly more enjoyable team building activities, for the first
team groupings to bond, to learn the CL STAD-D process, differentiated roles, and to choose
team names. It was assumed that as much time for those essentials should not be as necessary
for the second team groupings, but that may not have been the case. Additionally, the newness
or initial excitement of the process abated over time, and the overall process simply became
either less interesting or possibly, more burdensome for some students as the semester
progressed.
My overall thoughts based on this study are that the prior research on cooperative learning has been less conclusive for high school and higher education because students who have reached upper secondary education and higher education status have very likely already adaptively accommodated their own learning styles through meta-cognitive coping mechanisms. In other words, such older students must have become cognizant about how they learn best in order to make the necessary adjustments that help them to become successful academically in a particular instructional situation in order to progress to a higher educational level. That was reflected in the surveys in which students expressed the ways in which they learned best, as well as the learning style inventories they took. Additionally, my observation was that the students often viewed the instructor as the knowledge expert and, therefore, often trusted her responses to their questions more than the other group participants. That was generally true for most of the females and for two of the ESS males, as stated in individual surveys and focus group interviews.

The group surveys revealed a preference for teacher explanations and examples as well as a quiet classroom or one in which the talk was limited to serious content discussion. One student, who was representative of most, stated that the best thing about learning on her own was, “I already know how to make myself learn and remember things better than anyone else.” Others in the class mentioned that a primary benefit of studying on their own was that they could “go at my own pace.” The attitude survey and focus group interviews revealed that, while these students generally did not enjoy the study of economics as a subject, they certainly understood the benefit of being able to learn it well enough in order to pass the course and graduate, as it was a state mandated course for high school graduation. These students were clearly survivors who had persevered academically and behaviorally to the point of becoming high school seniors, and they believed that they would graduate. Furthermore, they all did graduate even though two
were required to complete compensatory course work at Phoenix High School in the evening and one finished later in summer school. All were 2008 high school graduates.

In the focus groups, most of the students stated that they knew how they reviewed best for a quiz. Several mentioned the use of outlines, vocabulary reviews, and oral reviews over the major topics, mnemonic devices, and simple repetition that helped them to remember important information. Additionally, they indicated that teacher-prepared study packets designed to help them study specifically for the economics EOCT were not individually useful to them for test review unless the teacher also reviewed them with the whole class.

Most of the students were not happy with having to change groups at the mid-point of the case study. They had achieved a comfort level with each other within the groups even when it was obvious that a change might be advantageous for some individuals, and it had been explained to them as a requirement for the CL STAD-D process during this study. Consequently, there was a longer than expected period of adjustment following the switch that was surprising. Even when students stated that they did not particularly like someone else in their first grouping, they still preferred the known of their respective roles and group members to the unknown of a new group. Perhaps the process could be refined or reconstructed so that groups could be switched out two people at a time instead of all at once or students could rotate but their respective roles would remain the same.

Those students who did not mind participating in something different basically played along, at least for a while. However, those who perceived that they learned best on their own were less likely to view CL STAD-D as useful. Those students did not complain about being in the CL STAD-D case study and stated that they mostly enjoyed it, but it was not evident from either the later quiz scores or the team scores that they all gave it their best effort. Most went through the
motions and did what they had to do within their respective groups, but they did well to accomplish completing the worksheet reviews as a differentiated role guided practice group activity with the intended consequence of everyone in the group participating and learning a concept well enough and retaining it long enough to pass the quiz and, later, the EOCT.

Individually, Isabel, Luke, Daniel, John, Antonio, Johnny, and Miguel had the highest individual EOCT scores within a range of 86 to 70, respectively. Isabel, Antonio, Johnny, and Miguel were Hispanic. Neither they nor the other Hispanic students in the class received ESOL services during this case study, as they were monitored-only for standard education. Luke missed 21 days and worked 25-30 hours per week. Daniel worked 40 or more hours per week, and John worked 15 hours per week and was absent 19 days. Their EOCT scores were 83, 80, and 76, respectively. The ESS students, Josh, Joaquin, Mark, Blake, and Denzel had individual EOCT scores that ranged from 68 to 49, respectively. None of the ESS students passed the EOCT, and no ESS inclusion teacher was present in the classroom. Joaquin, Mark, and Blake missed 8, 9, and 9 class days, respectively, the most days missed of the five ESS students. Josh missed no days and Denzel was absent twice.

According to the focus group interviews, some students viewed the group work as an opportunity to do less work by simply dividing the tasks, as opposed to producing better work by specializing in a particular task and then discussing and explaining the results with the entire group in order to both understand and to refine it. When the group work involved making something together such as a poster or a manipulative for a group game, or participating in a special group learning activity, such as the trade simulation, these students became much more enthusiastic and also appeared to respond individually more positively to the group effort.
Furthermore, they enjoyed the team competition aspect of CL STAD-D as well as receiving team recognition.

From interviews with other teachers at this school who had not only received in-service training in the use of cooperative learning but who had also used it across grade and subject matter levels, a group project emphasis had most often produced the most observable cooperative learning results at this high school. Additionally, working in self-selected pairs was often suggested by students, according to interviews and surveys as most likely to result in positive cooperative learning experiences even if those pairs were unequal in ability.

Of course, a few students were explicit in their surveys that they preferred for the instructor to provide all of the explanations for them and tell them the correct answers outright. They particularly did not want to work through the standardized guided practice group worksheets following the initial whole class teacher lecture and instruction. A few of the students thought the group process of going over the worksheets was a waste of time. While they went through the motions, they also acted accordingly by not giving it their full effort.

The ESOL monitored-only students, as well as the ESS students, seemed most accommodative with others while working in CL STAD-D groups. That may have occurred because group learning was an important component of both of those programs at this high school, and the students who had been served by those programs were used to it, possibly giving them a slight social or interactive advantage over others in their groups who were not as familiar or as comfortable with the strategy. In fact, the classroom inclusion accommodations and modifications for those students who were served by ESS either recommended or required the frequent use of small group instruction. However, none of those students scored above 68 on the
economics EOCT, and three had total class absences of 8 days or more, which is especially significant in terms of 90-minute daily class time missed from a 4 X 4 block schedule.

The application of economic concepts and principles requires some ability to work through multi-step problem solving processes analytically, the ability to infer from graphic data, and the capacity to compute mathematics correctly. While most high school seniors should be able to accomplish this, the chapter and unit quizzes that Ms. Jones administered to the class were composed of multiple choice questions that were designed specifically to prepare them for the economics EOCT standards content and testing format. Some of those questions, as on the EOCT, were formed in the negative in which the negatively phrased answer was the correct choice.

In terms of other EOCT tests, the United States history EOCT results were checked for many of these students from the eleventh grade at this school, but this researcher could not find any obvious comparison with the results from the economics EOCT. The two courses are probably too dissimilar to offer a valid comparison.

Overall, it was observed behaviorally that the students in the class got along with each other and rooted for each other to do well both individually and within their groups, and they overwhelmingly stated on their individual surveys and in the focus group interviews that they thought they had learned more about economics. That is substantiated by the percentage gains between their pretest and EOCT scores. However, the class only achieved an overall mean of 63 on the economics EOCT. The goal was for the CL STAD-D process to aid these diverse students in passing the economics EOCT with a minimum score of 70. Only 7 of the 27 students achieved 70 or higher on the EOCT. None of the ESS students and none of the students who missed one or more quizzes passed the EOCT. Those missed quizzes could not be made up due
to school policy on unexcused absences. Only one of the ESOL monitored-only students, Antonio, passed the EOCT.

As stated, the research questions for this study were: How did the use of a cooperative learning strategy influence the learning of economics concepts by a class of diverse high school seniors? How and why would such effects have occurred? In terms of an answer based on this study, it may very well have been that for these 12th grade students at this school that group work as an experience was viewed more favorably as a venue for creating a hands-on project, for role play, for breaking up large amounts of content into smaller amounts for each group, or for simple information test review games such as Jeopardy, as noted by one teacher interview. The deeper thought processing skills, as well as the necessary positive interactive social skill, required for a more thorough knowledge of abstract instructional content that results from shared information gathering, categorizing, questioning, discussion, decision-making, and reflective analysis and evaluation, probably required more than a structured group review process in order to be transferred and then transformed into a high test score. That is not to conclude that academic learning is only accomplished or better accomplished when it is a uniquely meta-cognitive experience. Group dynamic interaction strategies may be quite helpful for diverse 12th grade students in processing instructional content, as well as being successfully tested on that content. However, that success may depend as much on how those same students both perceive and then act on how they learn best, which is meta-cognition. Certainly, metacognition and well developed higher order thinking (verbal, written, quantitative, analytic, reflective, and evaluative) skills become increasingly significant learning and critical thinking tools as students navigate successfully through secondary and higher education.
Individual success may also depend on perceived status, as well as the perceived status of other group members within each unique group. Two of the Hispanic girls, Isabel and Lupe, expressed feelings of racism from some of the other group members on their second teams on their individual surveys. While overt racism was never observed in the class as a whole or within the team groupings, the fact that those two students mentioned it independently in each of their surveys is worth noting and should be taken seriously. That issue never came up as such in the differentiated role focus group interviews. While racism existed at this school, some Hispanic students there refer to any non-Hispanic whom they do not like or with whom they share a serious disagreement as being racist. That acknowledged, there has existed anti-illegal immigrant xenophobia in the community in recent years that has been directed toward Hispanics of Mexican descent, and current economic conditions have further exacerbated this phenomenon.

The use of verbal and written explanations along with the kinesthetic production of manipulative explanatory devices (such as the paper finger devices used to describe the pros and cons of the different types of business organizations) during the CL STAD-D group process was an observably effective strategy for successful team cooperation. When everyone participated diligently, fulfilling their individual role responsibilities, in order to complete such tasks, many of the teams were quite successful, receiving numerous awards. However, unless the cooperative group work effort depended on making a chart or drawing a poster or making a hand manipulative, the guided practice worksheets became either routine or burdensome. Many students would have preferred to be dependent primarily on the instructor to tell them immediately if their group answers were correct instead of dividing the work, attempting to read for understanding, verbally discussing/explaining, coming to a consensus, completing the guided practice by filling out the worksheet together, and then checking the answers for correctness.
The class endured the many difficult course quizzes as well as the frequent surveys, questionnaires, and pre-post-testing that was required for this case study. Consequently, it was a concern that the students might suffer from the added stress of the research process itself, and that may have been reflected by the general downward trend of the quiz scores over the course of the study. Nevertheless, the students were generally good natured, and they appeared to accept as well as participate in the overall process. This researcher enjoyed the time with them very much, and the feeling appeared to be mutual. The class always looked forward to the frequent doughnut and pizza rewards for participation, and overall attendance was always excellent on those days.

**Recommendations**

Questions concerning the use of specific group information processing structures for the purpose of instructional content review with diverse students at the secondary high school level should be investigated through further research that would go beyond the scope and the 12-week time span of this study. Videotaping each CL STAD-D group could also provide valuable data from many perspectives in which to analyze the individual members of each group in their differentiated roles as they process content review information. Interviewing each group and each individual student as well as rotating a specific differentiated role person, described as a listener, from group to group to report on the compatibility and functionality of each group might be another way to obtain and share more information concerning both inter-and intra-group dynamics.

Conducting similar secondary high school cooperative learning studies that investigate the dynamics of group structures such as self-selection of groups, as well as a choice of differentiated roles, and a closer examination of elaborated explanations, when those exist, could
also provide important information concerning status. Group goal descriptors that require more individual accountability and the use of structured pairs as either a group or as a group within a larger group might provide additional perspective on group information processing as it related to individual effort. The use of teacher-prepared guided practice review sheets directed toward specific economics EOCT content questions and fewer textbook standardized guided practice reviews might have resulted in less confusion and more understanding of specific concepts. Providing as much time for the second grouping team building activities as for the teams at the beginning of the study might have improved the quiz outcomes of the second team grouping. Debriefing the whole class on the review sheets after cooperative learning groups had completed them, and debriefing the whole class as soon as possible after quizzes were the suggestions of the students who thought that would help them to retain information.

This study followed the CL STAD-D process guidelines as closely as possible. However, the process could be modified to provide a better fit for the purpose and the setting. For instance, not having all members change at the mid-point or having groups switch but keep their respective roles might be one way to refine the process. Permitting groups to self-select two of the four members based on compatibility or other criteria would be another recommendation.

Summary

This chapter described the conclusions based on the results of this case study, which confirmed the general positive social and motivational aspects of cooperative learning. The study addressed questions concerning how these diverse students in differentiated roles assimilated and processed information within the context of group dynamics. Background information was shared that had bearing on the school, students, locale, cooperative learning, and higher education opportunities.
A primary conclusion was that these diverse senior high school students would probably have graduated with or without the aid of the cooperative learning process, although the instructor and most of the students believed the CL STAD-D group process made the study of economics more palatable, if not comprehensively more successful in terms of the EOCT. Only 7 of the 27 students scored 70 or above, 25.93%, on the economics EOCT, but the entire class improved from the pretest to the EOCT by 109.72%, and all 27 graduated in 2008.
References


APPENDIX A

CL Interview Questions for Teachers

1. In using cooperative learning techniques with your classes, can you describe specifically what you believe has worked well with your students and what has not based on what you were trying to achieve? (Can you describe a time when things worked well and when they did not?)

2. Can you cite instances when you observed that cooperative learning strategies with your students helped them to achieve higher test scores or a more thorough understanding of a concept or learning objective?

3. Can you describe a situation in which specific groups of students (particularly ESOL) may have performed more effectively or less effectively in groups? To what would you attribute this effect?

4. What would you do differently or the same with regard to cooperative learning the next time you use it?
APPENDIX B

Biographical Information

1) In what city, state, country, were you born?

2) How old are you?

3) How many brothers and sisters do you have?

4) Do you live at home with your parent(s)?

5) If you do not live with parents, do you live with another family member or do you live on your own?

6) What language is spoken primarily in your home?

7) Where did you attend elementary school

8) Where did you attend middle school?

9) Did you begin your freshman year at this high school?
   If not, where did you begin high school?

10) Have you already passed the Georgia High School Graduation Test?

11) Did you go to summer school to stay on track to graduate?

12) Did you or will you attend Phoenix High School in order to stay on track to graduate?

13) Do you work after school?

14) If you work, how many hours per week do you work?

15) What do you plan to do after high school graduation?

16) If you plan to further your education, where to you plan to do this?
APPENDIX C

Student Survey One

1) The most important thing I have learned so far about economics in this class is . . .

2) When I think, read, or hear about economics now, I . . .

3) When I think about preparing to take the economics End of Course Test, which is required for high school graduation in Georgia, I . . .

4) CIRCLE ONE:  I (have, have not yet) passed all parts of the Georgia High School Graduation Test. If I have not yet passed all parts of the GHSGT, the one(s) that I have not yet passed are . . .

5) If I were to take an economics class again, I would . . .
APPENDIX D

Student Survey Two

1) I learn best in class when I . . .

2) I learn best in class when the teacher . . .

3) I learn best in class when the other students . . .

4) Activities that help me learn in class are . . .

5) The reason these activities help me to learn are . . .

6) The best way for me to review for a test is to . . .

7) The worst way for me to review for a test is to . . .

8) The language I learned first was . . .
APPENDIX E

Student Survey Three

1) I learn best in a class when I . . .

2) I learn best in a class when the teacher . . .

3) I learn best in a class when the other students . . .

4) When I have worked in a group, the best thing about learning activities in a group is . .

5) When I have worked in a group the worst thing about learning activities in a group is

6) The best thing about learning on my own is . . .

7) The worst thing about learning on my own is . . .

8) What is the language you learned to speak first?
APPENDIX F
Cooperative Learning Final Questionnaire

1) Reflect on using cooperative learning this semester as a method of review for content for the economics End of Course Test by indicating in what specific ways it has been helpful, not helpful, or any changes you think would have made the experience more useful for its intended purpose of preparing you to pass the economics EOCT.

2) How do you prefer to be taught subject matter on which you will take a test that you must pass in order to graduate? Explain your answer.

3) If you are or have been an ESL student while in high school, was the economics content difficult for you to understand due to language differences?

4) Do you think the different roles within the team/groups (explainer, leader, writer, gopher, etc.) helped you to better learn the economics content within your group?

5) Do you think the group/team setting helped you to get to know/work with students with whom you may not have been encouraged to interact before? Explain your answer.

6) Do you think the team improvement scoring method for the groups encouraged you to become a more productive team member and a better test-taker? Why or why not?
APPENDIX G

Focus Group Audio-Taped Questions for CL STAD-D Teams

1) You had a particular role to play (gopher, explainer, writer, leader, spokes person) in your two groupings. In what ways do you think the differentiated roles may have helped or not helped all group members to learn the economics test review material?

2) In what ways do you think having a specific differentiated group role helped or did not help you to learn the economics test review material?

3) Did you feel more responsible as a team member for the learning success of the rest of your team members as you participated in a group review before an economics test as a result of your individual role?

4) If English is not your first language, did you feel the group work helped in terms of understanding the content?
APPENDIX H

CL STAD-D Team Rating Score Sheet

Rate group member’s contribution

My name: ________________________________

<table>
<thead>
<tr>
<th>Extent of Contribution</th>
<th>Team Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTSTANDING</td>
<td></td>
</tr>
<tr>
<td>SUBSTANTIAL</td>
<td></td>
</tr>
<tr>
<td>MODEST</td>
<td></td>
</tr>
<tr>
<td>MINIMAL</td>
<td></td>
</tr>
<tr>
<td>NOTHING</td>
<td></td>
</tr>
</tbody>
</table>

I believe my grade for the project should be ________ higher than the other members of my team because: ________ the same as ________ lower than

________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________

I believe the following special conditions should be considered in determining my grade:

________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
APPENDIX I

Interview Consent Form

I, ____________________________, agree to participate in a research study titled “Cooperative Learning for End-of-Course-Test Achievement in Economics” conducted by Sharon Beavers from the Department of Education at the University of Georgia (706-483-4179), under the direction of Dr. John D. Hoge, Advisor, College of Education—Secondary Social Science, University of Georgia (706-542-4416). I understand that my participation is voluntary. I can stop taking part in this study without giving any reason, and without penalty.

The reason for this project is to study the use of cooperative review in order to prepare for the state mandated EOCT in economics as compared with teacher-directed review for the EOCT in economics.

If I volunteer to take part in this study, I will be asked to participate in an interview (some of which may be audio-taped) lasting one hour and concerning my experiences with cooperative learning. A follow-up interview lasting for up to one hour may be necessary.

The benefits for me as an educator are that I may be able to share information and experiences that may help students to better prepare for the EOCT in economics and other high stakes tests.

No risk is expected.

No individually identifying information about me, or provided by me during the research project interview process, will be shared with others. Audio tapes may be used for transcription purposes and will be secured in the home of the researcher and erased on or before December, 2010. Participation will be confidential and pseudonyms will be used for research purposes.

I understand that I am agreeing by my signature on this form to take part in this research project and understand that I will receive a signed copy of this consent form for my records.

_____________________________  __________________________  ________________  
Name of Researcher             Signature                    Date

706-483-4179  
Telephone: ______________________

Email: sbeavers@daltonstate.edu

_____________________________  __________________________  ________________  
Name of Participant            Signature                    Date

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your rights as a research participant should be addressed to the Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu
APPENDIX J

Consent Form in Spanish

FORMA DE CONSENTIMIENTO

Yo ________________________ estoy de acuerdo en participar en la investigación/estudio llamado "Aprendizaje Cooperativo Para Tener Éxito En El Examen De Fin De Curso Del Área De Economía" conducido por Sharon Beavers (706-483-4179) del Departamento de Educación de Ciencias Sociales para la educación Secundaria de la Universidad de Georgia, bajo la dirección del Doctor John D. Hoge, Consejero del Colegio de Educación - La dirección es la siguiente: Ciencias Sociales de Secundaria, 629 Pasillo Aderhold, en Athens, Georgia 30602-7177 (706-542-4416). Estoy conciente de que mi participación es voluntaria, puedo dejar de ser parte de este estudio en cualquier momento en que lo desee sin tener que dar ninguna razón al respecto y sin ninguna penalización y puedo escoger no participar en esta investigación/estudio.

La razón de esta investigación es estudiar el uso del repaso/estudio cooperativo para acreditar el examen de fin de curso (EOCT) en el área de economía en la preparatoria.

- Si yo decidí voluntariamente participar en este estudio/investigación se me dará a escoger si quiero ser parte del grupo de repaso que estará dirigido por un maestro o del pequeño grupo de repaso estas dos clases tendrán diferente manera de ser dirigidas como parte del currículo regular. Todos los estudiantes tendremos la oportunidad de presentar un examen antes del examen real de EOCT y otro después del EOCT (pre-examen y post-examen) y además se me preguntara si doy mi autorización para que usen los resultados obtenidos en mi pre-examen, cualquier dato que pueda identificarme me será regresado, y quitado de los archivos de destruido a mi petición. Los resultados de EOCT (Examen de Fin de Cursos) permanecerán en los archivos de la escuela.
- No hay ningún beneficio para mi como resultado de mi participación en esta investigación de estudio, no hay riesgo alguno.
- Ninguna información que pueda identificarme se podrá compartir con nadie, a excepción de la requerida por la ley. Los investigadores podrán responder cualquier pregunta sobre esta investigación/estudio en cualquier momento y pueden ser localizados en el teléfono: 706-483-4179.

Entiendo que con mi firma estoy reafirmando mi participación en esta investigación/estudio y también recibiré una copia con mi firma para mis archivos.

Sharon Beavers
Investigadora

Teléfono: 706-483-4179
E-mail: sbeavers@daltonstate.edu

Nombre del estudiante ________________________

Firma ________________________ fecha ________________________

Por favor firme las dos copias, guarde una y la otra entérguesela a la persona que hace la investigación.

Cualquier pregunta adicional sobre los derechos de su hijo(a) como participante en una investigación deberán seguir siendo hechas a IRB Chairperson, Human Subjects Office, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, GA 30602-7411; Teléfono (706)542-3199; E-mail IRB@uga.edu.
APPENDIX K

Consent Form in English

I, ______________________________, agree to participate in a research study titled "Cooperative Learning for End-of-Course-Test Achievement in Economics" conducted by Sharon Beavers, a graduate doctoral student from the Department of Education at the University of Georgia under the direction of Dr. John D. Hoge, Advisor, College of Education, 629 Aderhold Hall, Athens, Ga. 30602-7177—Secondary Social Science, (706-542-4416). I understand that my participation is voluntary. I can stop taking part in this study without giving any reason, and without penalty. End-of-Course-Test score improvement will not be a result of participation or non-participation in this research study.

The reason for this project is to study the use of cooperative review in order to prepare for the state mandated EOCT (End-of-Course Test) in high school economics as compared with teacher-directed review for the EOCT in high school economics.

If I volunteer to take part in this study, I will be asked to participate in either teacher-directed or small group-centered review for the EOCT in economics. Two classes will have different review procedures as a part of the regular curriculum. All students will take a pre-test and the post-test, which is the EOCT in economics. I am being asked to allow the use of my pre-and post-tests for this research study. Any data that can be identified with me will be returned to me, removed from the research record or destroyed at my request. End-of-Course-Test results will be posted on permanent records.

There are no direct benefits to me as a result of my participation in this study. No risk is expected.

No individually identifying information about me, or provided by me during the research, will be shared with others except as required by law. The researcher will answer any further questions about the research, now or during the course of the project, and can be reached by telephone at (706)-483-4179.

I understand that I am agreeing by my signature on this form to take part in this research project and understand that I will receive a signed copy of this consent form for my records.

Name of Researcher ___________________________ Signature ___________________________ Date ____________

Telephone: ___________________________ or 707-278-0245

Email: ___________________________

Name of Participant ___________________________ Signature ___________________________ Date ____________

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your rights as a research participant should be addressed to IRB Chairperson, Human Subjects Office, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu
APPENDIX L

Parental Consent Form in Spanish

AUTORIZACION DE LOS PADRES

Yo autorizo que mi hijo(a) ___________________________________________________________________________________________________________ tome parte en la investigación del estudio "Aprendizaje Cooperativo Para Tener Exito En El Examen De Fin De Curso Del Area De Economia". Este estudio será conducido por Sharon Beavers (706-483-4179) del Departamento de Educación de Ciencias Sociales para la educación Secundaria de la Universidad de Georgia, bajo la dirección del Doctor John D. Hoge, Consejero del Colegio de Educación – La dirección es la siguiente: Ciencias Sociales de Secundaria, 629 Pasillo Aderhold, en Athens, Georgia 30602-7177 (706-542-4416). Estoy conciente de que puedo negarle a mi hijo(a) la participación en este estudio y que el, mi hijo(a) puede escoger no participar sin ser penalizado y sin tener representación alguna.

- Dos clases tendrán diferente procedimiento de repaso como parte de la preparación del examen de fin de curso de la materia de Economía para la preparatoria (EOCT). No habrá beneficio alguno para el estudiante que participe en este estudio.

- Si autorizo que mi hijo(a) participe en este estudio, se le dará a escoger si quiere ser parte del grupo de repaso que estará dirigido por un maestro o del pequeño grupo de repaso y de post-examen para el EOCT (Examen de fin de Cursao) de la materia de Economía. Para poder llevar a cabo este estudio se le pedirá a cada participante su autorización para utilizar los resultados de sus exámenes.

- Esta investigación no dañará a nadie. Mi hijo(a) puede decidir no participar en cualquier momento. La calificación de mi hijo(a) no será afectada si mi hijo(a) decide no formar parte de esta investigación. A los estudiantes que decidieron no participar que sus padres no dieron permiso de participar en esta investigación no los pedirá que permanezcan en clase como normalmente lo hacen.

- Cualquier información recolectada sobre mi hijo(a) permanecerá de manera confidencial a menos que lo requiera la ley. Cualquier dato que pueda identificar a mi hijo(a) me será regresado a mí o a mi hijo(a), eliminada de los archivos de este estudio o destruido a mi petición.


- Declaro que entendi todos los procedimientos descritos arriba. Las preguntas que yo cree conveniente hacer serán contestadas para mi satisfacción, y estoy de acuerdo en que mi hijo(a) tome parte en esta investigación/estudio. A mi me será dada una copia de este acuerdo.

Sharon Beavers
Investigadora

Teléfono: 706-483-4179
E-mail: sbeavers@daltonstate.edu

Firma ____________________________________________________________  Fecha _______________________

Nombre del Estudiante ____________________________________________

Por favor firme las dos copias, guarde una y la otra entregue a la persona que hace la investigación. Cualquier pregunta adicional sobre los derechos de su hijo(a) como participante en una investigación debo ser hechas a IRB Chairperson, Human Subjects Office, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, GA 30602-7411; Telefono (706)542-3199; E-mail IRB@uga.edu.
APPENDIX M

Parental Consent Form in English

I agree to allow my child, ________________________, to take part in a research study titled, “Cooperative Learning for End-of-Course-Test Achievement in Economics”, which is being conducted by Sharon Beavers (706-483-4179), from the Secondary Social Science Education Department at the University of Georgia under the direction of Dr. John D. Hoge, Advisor, College of Education—Social Science, 629 Aderhold Hall, Athens, Georgia 30602-7177 (706-542-4416). I do not have to allow my child to be in this study if I do not want to. My child can choose not to participate without penalty.

- Two classes will have different review procedures as a part of the regular curriculum in order to prepare for the state mandated EOCT (End-of-Course-Test) in high school economics. There are no direct benefits to participants as a result of participation in the study.

- If I allow my child to take part, my child will be asked to participate in either teacher-directed or small group-centered review for the EOCT in high school economics. All students will take a pre-test and the post-test, which is the EOCT in high school economics. Participants are being asked to allow the use of their pre-and post-test results for this research study.

- The research is not expected to cause any harm or discomfort. My child can quit at any time. My child’s grade will not be affected if my child decides to stop taking part. Students will be allowed to participate in class as usual if they are not permitted or do not agree to participate in the research study.

- Any information collected about my child will be held confidential unless otherwise required by law. Any data that can be identified with my child will be returned to myself or to my child, removed from the research records, or destroyed at my request.

- The researcher will answer any questions about the research, now or during the course of the project, and can be reached by telephone at: 706-483-4179. I may also contact the professor supervising the research, Dr. John D. Hoge, University of Georgia, College of Education, Athens, Georgia 30602-7177 at (706-542-4416).

- I understand the study procedures described above. My questions have been answered to my satisfaction, and I agree to allow my child to take part in this study. I have been given a copy of this form to keep.

Sharon Beavers
Name of Researcher

Signature Date

Telephone: 706-483-4179
Email: sbeavers@daltonstate.edu

Name of Student

Name of Parent or Guardian

Signature Date

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your child’s rights as a research participant should be addressed to IRB Chairperson, Human Subjects Office, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu
APPENDIX N

Ongoing IRB Approval Form

The University of Georgia

APPRAOL OF RENEWALS / CHANGES

Request Date: 2007-02-19  Project Number: 2005-10400-2

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
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<th>Address</th>
<th>Email</th>
</tr>
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<tbody>
<tr>
<td>Ms. Sharon D. Beavers</td>
<td>PI</td>
<td>Social Science Education</td>
<td>2206 Fawn Drive  Adam Hall +7177</td>
<td><a href="mailto:sbeavers@daltonstate.edu">sbeavers@daltonstate.edu</a></td>
</tr>
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<td>Dalton, GA 30720532</td>
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<td></td>
<td></td>
<td>706-278-0245 (h) / 706-483-4179 (w)</td>
<td></td>
</tr>
<tr>
<td>Dr. John D. Hoge</td>
<td>CO</td>
<td>Social Science Education</td>
<td>629E Aderhold Hall +7177</td>
<td><a href="mailto:jhoge@uga.edu">jhoge@uga.edu</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>706-542-4416</td>
<td></td>
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</tbody>
</table>

Title of Study: Cooperative Learning for End-of-Course-Test Achievement in Economics.

45 CFR 46 Category: Continuing Review  Renew : Yes  Change(s) : Changed advisor.

Parameters:
RENEWAL OF APPROVAL PERIOD WITH ABOVE NOTED CHANGES. Please use date-stamped Consent Documents

Approved : 2007-03-27  Begin date : 2007-03-27  Expiration date : 2008-03-26

NOTE: Any research conducted before the approval date or after the end data collection date shown above is not covered by IRB approval, and cannot be retroactively approved.

Number Assigned by Sponsored Programs:  Funding Agency:

Form 310 Provided: No

Your request for approval of renewal and/or changes has been approved.

You must report any adverse events or unanticipated risk to the IRB within 24 to 72 hours. Refer to the IRB Guidelines for additional information.

Use the attached Researcher Request Form for requesting renewals, changes, or closures. Keep this original approval form for your records.

Chairperson or Designee,
Institutional Review Board
APPENDIX O

Original IRB Approval Form

The University of Georgia
Office of The Vice President for Research
DHHS Assurance ID No.: FWA00003901

APPROVAL FORM

Date Proposal Received: 2004-12-21
Project Number: 2005-10400-0

Name	Title	Dept/Phone	Address	Email
Ms. Sharon D. Beavers	PI	Social Science Education	Aderhold Hall +7177

Dr. Todd Dimicheleman	CO	Elementary & Social Studies Education	624F Aderhold Hall +7177

2206 Fawn Drive
Dalton, GA 30720-5732
706-278-0245 (h) / 706-876-7122 (w)
sbeavers@whitfield.k12.ga.us
dink@coe.uga.edu

Title of Study: Cooperative Learning for End-of-Course-Test Achievement in Economics.

45 CFR 46 Category: Expedite 76
Parameters: Approved for Southeast Whitfield High School Only.
Change(s) Required for Approval and Date Completed: 2005-04-14
Revised Application; Revised Consent Document(s);

NOTE: Any research conducted before the approval date or after the end date collection date shown above is not covered by IRB approval, and cannot be retroactively approved.

Number Assigned by Sponsored Programs: Funding Agency:

Form 310 Provided: No

Your human subjects study has been approved.

Please be aware that it is your responsibility to inform the IRB:
... of any adverse events or unanticipated risks to the subjects or others within 24 to 72 hours;
... of any significant changes or additions to your study and obtain approval of them before they are put into effect;
... that you need to extend the approval period beyond the expiration date shown above;
... that you have completed your data collection as approved, within the approval period shown above, so that your file may be closed.

For additional information regarding your responsibilities as an investigator refer to the IRB Guidelines. Use the attached Researcher Request Form for requesting renewals, changes, or closures. Keep this original approval form for your records.

Chairperson: Institutional Review Board