ABSTRACT

The purpose of this exploratory research study was to determine the influence of student characteristics (age, gender, race) and students’ “identification with academics” on perceptions of classroom dynamics in an online or face-to-face remedial education course. The study used two survey instruments: the recently redesigned Classroom Dynamics Questionnaire and the Identification with Academics Scale. The participants included adult learners enrolled in a face-to-face or online remedial education course offered by a two-year technical college in Georgia. Bivariate, omnibus, and multiple regression analyses were conducted in order to determine the best explanation for observed variances in the four dimensions of classroom dynamics: teacher respect for students, student confidence in the teacher’s ability, learner voice, and learner cohesion in the classroom. However, due to high multicollinearity discovered in the predictor variables, a multiple regression analyses was performed in order to create the CDQ-Composite variable.
Analyses revealed that age, ethnicity, and online instruction accounted for a small percentage of variances in the four dimensions of classroom dynamics. According to the findings, instructional delivery methods and demographic variables had no predictive power in face-to-face or online students’ classroom perceptions. These variables were modest predictors of student perceptions of classroom dynamics. Identification with academics was a significant predictor for two dimensions of classroom dynamics—teacher ability and teacher respect—and the CDQ-Composite.

INDEX WORDS: Adult education, Classroom dynamics, Developmental studies, Classroom Dynamics Questionnaire, Identification with academics, Instructional delivery method, Online classes, Social climate, Two-year colleges
PERCEPTIONS OF CLASSROOM DYNAMICS AND IDENTIFICATION WITH ACADEMICS IN ONLINE AND FACE-TO-FACE REMEDIAL CLASSROOMS IN TWO YEAR COLLEGES

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DEDICATION

This dissertation is dedicated to

My Heavenly Father, the Great I Am, the Author of All Things

and to

my loving and supportive husband Luther Preston Lucas
my generous and adoring father Danny Lamar Joiner
my beautiful and joyous mother Rhonda Renfroe Joiner
my paternal grandparents Jesse and Martha Jean Joiner
my maternal grandparents Ralph and Geneva Renfroe
my favorite aunts, uncles, and cousins
and to my daughter whom I’ve done all this for:

Maizie Pearl Lucas

Your prayers, love, encouragement, and support made this

journey an unbelievable experience.
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>ACKNOWLEDGEMENTS</th>
<th>v</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>ix</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xi</td>
</tr>
<tr>
<td><strong>CHAPTER</strong></td>
<td></td>
</tr>
<tr>
<td>1 THE PROBLEM</td>
<td>1</td>
</tr>
<tr>
<td>Background of the Study</td>
<td>1</td>
</tr>
<tr>
<td>Online Courses</td>
<td>4</td>
</tr>
<tr>
<td>Classroom Dynamics</td>
<td>6</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td>10</td>
</tr>
<tr>
<td>Purpose and Research Questions</td>
<td>11</td>
</tr>
<tr>
<td>Significance of the Study</td>
<td>12</td>
</tr>
<tr>
<td>2 REVIEW OF THE LITERATURE</td>
<td>14</td>
</tr>
<tr>
<td>Terms, Concepts, and Definitions</td>
<td>15</td>
</tr>
<tr>
<td>The Two-Year College</td>
<td>17</td>
</tr>
<tr>
<td>Remedial Education</td>
<td>34</td>
</tr>
<tr>
<td>Classroom Dynamics</td>
<td>41</td>
</tr>
<tr>
<td>Studies Using the Classroom Dynamics Questionnaire</td>
<td>52</td>
</tr>
<tr>
<td>Instructional Delivery Methods</td>
<td>59</td>
</tr>
<tr>
<td>Online vs. Face-to-Face Instruction: An Empirical Analysis</td>
<td>71</td>
</tr>
<tr>
<td>The Role of Online Context</td>
<td>80</td>
</tr>
</tbody>
</table>
REFERENCES ................................................................................................................136
LIST OF TABLES

Table 1: Summary of the Empirical Studies .................................................................52
Table 2: Summary of Empirical Studies: Online vs. Face-to-Face Instruction ..........72
Table 3: Relationships and Dimensions of the Classroom Dynamics Questionnaire ......85
Table 4: Reliability Scores for the CDQ from Studies on Classroom Dynamics ........89
Table 5: Reliability Scores for the CDQ from Studies on Classroom Dynamics ..........92
Table 6: Reliability Scores for the CDQ from Studies on Classroom Dynamics ..........93
Table 7: Distribution and Reliability of Key Measures .............................................94
Table 8: Intercorrelations Among the Four CDQ (Online) Measures .........................94
Table 9: Frequency Counts and Percentages of Demographic and Descriptive Variables for the Study Participants (N = 200) ..........................................................103
Table 10: Measures of Central Tendency and Cronbach’s Alpha Coefficients for CDQ and IAS variables (N = 200) ..............................................................107
Table 11: Pearson’s Product Moment Correlation Coefficients of the Dependent Variables used in Inferential Analyses (N = 200)..................................................109
Table 12: Multiple Regression for CDQ-Composite Regressed on Independent Variables of Study (N = 200) ........................................................................113
Table 13: Frequency Counts and Percentages of Demographic and Descriptive Variables for the Homogeneity Study Participants (N = 10) ..................118
Table 14: Measures of Central Tendency for Perception of Classroom Dynamics and Identification with Academics Scale Variables Used in Analysis (N = 10) .................................................................119

Table 15: Results of Independent Samples t-test Comparing Mathematics 0098 or 0099 (N = 200) and Reading 0099 and English 0099 (N = 10) Students on CDQ and IAS Scores .................................................................120
LIST OF FIGURES

Figure 1: Operational version of study model with predictors of classroom dynamics ....10
Figure 2: Oliva’s (2003) explanatory model .................................................................54
Figure 3: Davis’s (2006) explanatory model .................................................................57
Figure 4: Sethna’s (2010) operational model .................................................................58
Figure 5: Operational model for predictors of classroom dynamics .........................86
CHAPTER 1
THE PROBLEM

Background of the Study

By 2020, more than 60% of Georgia’s jobs will require a certificate, associate degree, or bachelor’s degree (Complete College Georgia, 2012); yet, only 42% of Georgians currently possess the necessary credentials to meet the expanding job market (Complete College America [CCA], 2012). As more people acknowledge the need for and value of higher education and as economic pressures continue to drive students toward postsecondary institutions, the growing enrollment population of the Technical College System of Georgia (TCSG) has become more demographically and academically diverse. This new population consists of first-time college students, students re-enrolling to enhance their job skills and marketability, and students acquiring transferrable credits in hopes of one day enrolling in a four-year university. With such an expansion comes an increasing number of underprepared students enrolling in postsecondary institutions (Ramaley & Leskes, 2002).

Historically, students needing remediation have enrolled in a local two-year community college in hopes of one day transitioning to a four-year university system. However, these systems can no longer handle the load of educating the full range of postsecondary learners in all academic majors. Therefore, Georgia’s technical colleges have expanded their remedial course offerings in response to growing need among student populations. Currently, all 22 institutions within TCSG provide remedial
education, and TCSG appears to be actively preparing for its new role in the delivery of such courses. State initiatives, such as Complete College Georgia as well as numerous local-level quality enhancement plans (QEP) regulated by the Southern Association of Colleges and Schools (SACS), are focusing on ways to redesign the delivery of remedial education. Indeed, Georgia’s technical colleges recognize the importance remediation plays in the future sustainability of Georgia’s higher education systems and thus value the need to improve its delivery.

Community and technical colleges have provided access to higher education for a diverse student population. As they continue to evolve into more comprehensive institutions, they are becoming even more diverse and inclusive. The National Center of Education Statistics (NCES) found that minorities attended community and technical colleges at a higher rate; nationally, 53% of Hispanic students, 45% of Black students, 52% of Native American students, and 45% of Asian and Pacific Islander students attended two-year colleges, with 47% being first-generation (NCES, 2007c). Additionally, Complete College America (2012) found that the majority of the minority populations enrolled at community and technical colleges were required to take at least one remedial class before entering program coursework. The percentages of students needing remediation were 67.7% African American, 58.3% Hispanic, and 46.8% Caucasian; of these, a staggering 64.7% were identified as low-income (CCA, 2012).

The remedial studies population is steadily becoming a more prominent enrollment demographic for the sustainability of Georgia’s technical colleges. Roughly 26% of all first-time students enrolling in TCSG need remediation upon admittance into program coursework. Students entering associate degree programs who receive remedial
education at either TCSG or the university system have a completion rate of 7% within three years (CCA, 2012). Over 51% of students enrolled in a two-year postsecondary institution take at least one remedial education class (CCA, 2012); this is a marked increase since McCabe’s (2000) study, which indicated that 41% of students entering a two-year college enrolled in remedial classes. As more women, minorities, and students over the age of 35 enroll in two-year institutions, the notion of the “traditional student” has changed significantly. With this new demographic, there has been a corresponding shift in students’ social and academic characteristics. Phillippe and Sullivan (2005) reported in the *National Profile of Community Colleges* that more women enrolled in community college than men and that the majority of these women were above the age of 30. The American Association of Community Colleges (AACC) found that students enrolled in two-year community colleges were more likely to hold full-time or part-time employment, have two or more children, have a general educational development (GED) degree, be enrolled part-time in college (i.e., less than 12 credit hours per semester), and receive full financial aid benefits from federal, state, and institutional grants (AACC, 2012). These students oftentimes face unique personal challenges before they even enroll in college.

In order for TCSG to compete in today’s global marketplace, McCabe (2000) insisted that special focus and attention should be devoted to institutional programs designed to develop a highly skilled workforce in order to raise the competencies of citizens. Due to low college completion rates, new emphasis is being placed on transforming remedial education. However, remediation has become America’s “bridge to nowhere,” a stumbling block for over 1.7 million first-time students (CCA, 2012).
“While more students must be adequately prepared for college, this current remediation system is broken. The very structure of remediation is engineered for failure” (p. 2). Therefore, an approach to reforming and restructuring the remedial classroom is needed. One such approach is to develop a deeper understanding of the role that complex classroom dynamics play in remedial education classrooms, specifically, in the context of diverse delivery methods (face-to-face and online).

**Online Courses**

The growth in popularity of online courses is undeniable. Allen and Seaman (2013) reported that 6.7 million students took at least one online course during the 2012-2013 academic year—an increase of over 570,000 students from the previous year. This increase, coupled with data showing 91% of public two-year and four-year institutions offering online coursework, indicate that online courses are readily available to all academic learners (NCES, 1998). Although the body of published work is quite extensive, much of the available research on online learning lacks a theoretical framework (Winiecki, 2003). “The publication base related to Web-based teaching and learning is considerable, yet the knowledge base remains relatively primitive and disorganized” (Hannafin et al., 2003, p. 256). And although current research is often producing inadequate theoretical foundations and conceptual frameworks, the research field of distance education, online courses, and online teaching and learning continues to grow.

Oren, Miodoser, and Nachimas (2002) conducted one of the earliest studies of social climate in online learning. They specifically wanted to gauge the social climate of synchronous and asynchronous online courses. The results of their study suggested that
instructors should actively foster and support the creation of social climates within online learning groups. Specifically, instructors should facilitate classroom discussions, minimize their interventions, and allow students to manage classroom dialogues independently. In addition, the social climate of an online course should encourage dense student-to-student interactions and include an open meeting space for students to complete both academic and social conversations.

Relationships are imperative to the social climate of an online class. In order to improve the online learning environment, great emphasis must be placed on such intrapersonal quality practices. Slay’s (1998) theoretical framework for distance education follows Moos’ outline for social organization domains which comprises relationships, system maintenance, and change. Slay maintained that a controlled and stable structure is needed to optimize student-student and student-teacher interactions in order for a distance-education learning environment to reach its greatest potential. Diaz (2000) followed this theory with a call for analysis of the quality of distance-education practices. He, too, considered ways of improving online learning by enhancing the quality of student-student and student-teacher interactions.

In a similar vein, Sethna (2010) insisted that the field of online education is particularly lacking in “how human relationships between teacher and students and students with other students play out in an artificial, computer-mediated environment” (p.10). He delved into the perceptions of classroom dynamics within an online environment; however, his sample population omitted a growing demographic: the remedial studies population. Sethna’s research played a pivotal role in this study.
Classroom Dynamics

This study centered primarily on a comparative analysis between perceptions of classroom dynamics in online and face-to-face courses. Thus, the dimensions of classroom dynamics were organized accordingly. The following sections discuss literature that considers the four dimensions of classroom dynamics and explores the key variable of the study—that is, online versus face-to-face instructional delivery methods.

The four dimensions of classroom dynamics are teacher respect for learners, confidence in teacher ability, learner cohesiveness, and learner voice. These dimensions also comprise the four major components of the survey instrument used during the data collection phase of this research (i.e., the CDQ). The literature reviewed for this study provided a theoretical framework for reexamining the aforementioned dimensions of the classroom context. This framework emphasizes the need for identifying the dimensions that enhance the ability of a classroom environment to promote student achievement.

Foundations of Classroom Dynamics

Kurt Lewin, a social psychologist, laid the groundwork for understanding classroom dynamics with his theory of group dynamics. Lewin emphasized the need for (and the value of testing) the interrelatedness between individuals and their environments. His theory focused on the importance of understanding an individual’s social context and on developing a more systematic way of understanding social dynamics. Lewin’s theory is particularly important within a classroom: “No university seems yet to have realized the deep implications which a resolute promotion of research in group dynamics would have for every aspect of social life” (Lewin, 1944, p. 195). Lewin’s work has been cited
by numerous research studies focusing on the dimensions of the classroom social environment and is explored further in Chapter 2.

For years, researchers have tried to identify the factors which contribute to school success—beyond solely academic achievement (Goodenow, 1992; Juvonen & Weiner, 1993). Schools and classrooms are social spaces in which students study and work among their peers; they comprise an inherently social experience. Therefore, to better understand the complex dichotomy of student success, more attention and research must be placed on the influence that social interactions and relationship have on a classroom social environment. The concept of classroom social environment includes the influences of one’s perceptions of the learning environment (Courtenay & Arnold, 1988; Darkenwald & Valentine, 1986; Fraser, 1989; Klecker, 2000; MacAulay, 1990; Moos, 1979). The context of classroom social environment is vast; therefore, this study examined one important aspect: classroom dynamics. Understanding a classroom’s dynamics helps in examining relationships and social enterprises while supporting more equitable classrooms.

Specific to the needs of the remedial classroom:

the classroom social environment is comprised of students’ perceptions about how they are encouraged to interact with and relate to others (e.g., classmates, the teacher), and encompasses dimensions of: (1) teacher support, (2) promoting mutual respect, (3) promoting student task-related interaction, and (4) promoting performance goals. (Patrick & Ryan, 2003, p. 3)

As Ryan and Patrick (2001) suggested, the dimensions of the classroom social environment are separate from the academic dimensions of the classroom and can be
linked to student motivation, self-regulated learning, achievement, classroom behaviors, and social relationships. They focus less on the competitive academic nature of the classroom and cognitive ability of students, and more on the classroom environment as a supportive, interactive, respectful environment.

**Dimensions of the Classroom Social Environment**

Through his empirical studies, Moos (1979) provided a foundational understanding of the social environment of a classroom. He likened a classroom’s social environment as its “personality” (Darkenwald, 1989; Moos, 1979). Moos, whose theories were adapted from Kurt Lewin’s (1936) and Henry Murray’s (1938) theories of group dynamics and classroom social environments, explored how classroom social environments affect the dynamics of a classroom—specifically the relationship and interactions between students and teachers, and how they affect learning outcomes.

Moos’ (1979) focus on the significance of outside environmental influences and how they affect students’ behaviors and attitudes is exclusively intrinsic. The importance of interpersonal dynamics in the adult-education classroom is evidenced by the succession of theories drawing on Moos’ work. He concentrated specifically on the social climate and personality of the classroom (Moos, 1979b) as it relates to the characteristics and interactions between students and teachers (Darkenwald, 1989). This focus on the importance of environmental influences as they relate to student achievement was a major contributing factor in this research.

**Predictor Variables of Classroom Dynamics and Social Environment**

Daisy Davis (2006) argued that differences in perception of classroom dynamics were based on the following variables: demographics and social characteristics, past
educational experiences, and identification with academics. “Dynamic social-psychological variables,” she concluded, “are better predictors than static variables,” and “personal characteristics significantly predict, but at a modest level” (p. 132). These findings coincide with numerous studies noting that demographic variables do not have predictive power in determining classroom perception (Byrne et al., 1986; Darkenwald, 1987; Michie et al., 2001; Oliva, 2003, Thomas; 2004). However, since personal characteristics returned modest findings, and since recent studies have identified sensitivity issues within Davis’ research instrument, it was necessary to include it as a predictor variable within this research study.

Davis employed the psychological variables of academic self-esteem and identification with academics as predictors. Identification with academics “revealed the strongest explanatory predictor for each of the four dimensions of classroom dynamics” (p. 137) with an overall mean item mean of 4.5 on a 6.0 scale. She concluded that this variable best predicted what was occurring (e.g., psychological variables) within her research population (i.e., a developmental studies classroom). Due to her findings around the predictive power of identification with academics, it was imperative to include this variable in this study. Doing so further expanded the study’s comparative analysis of perceptions of classroom dynamics in online and face-to-face classes.

Finally, numerous studies on distance learning and distance education have focused on broad measures of performance—for instance, test scores, student satisfaction rates, and modes of distance-education delivery (Merisotis & Phipps, 1990). Other studies have identified possible inequities between students in face-to-face classrooms and those in distance-education formats, and regarding interactions with their instructors
(Durant & Taggart, 1985; White, 2000). Therefore, instructional delivery method is a plausible predictor variable affecting classroom dynamics. Figure 1 presents a systematic and logical approach to observing differences in perception of classroom dynamics.

![Diagram](image)

Figure 1. Operational version of study model with predictors of classroom dynamics.

There are many other variables which could have been included within this study; however, based on previous research (Davis; 2006, Noshiwan, 2010; Oliva; 2003; Thomas, 2004) and the logic of the review of literature, the following variables will be studied: delivery method, demographic characteristics, and identification with academics.

Statement of the Problem

Remedial coursework is a stumbling block for many college students (Anderson et al., 1990; Bettinger et al., 2009; Hoyt, 1999; McCabe, 2000; Phillips, 2011; Rose,
As postsecondary institutions continue to seek ways to provide greater access to higher education, offer more fluidity in course schedules, and reduce institutional costs, funneling students into online coursework has become an increasingly common strategy. Therefore, as the need for remedial education classes at two-year technical colleges in Georgia grows, and as institutions increase the number and kinds of online courses in lieu of traditional lecture-based classrooms, the effects of the inevitable collision of two worlds must be studied more adequately.

Scholars and practitioners know very little about how classroom dynamics impact and affect remedial education courses, and even less about the nature of classroom dynamics in online courses. More specifically, very little is known about how remedial education students perceive certain dimensions of classroom dynamics—that is, respect, confidence, cohesion, and voice—in a face-to-face or online classroom environment. Thus, a knowledge gap exists in understanding how relationships between students and their teachers, and students and their peers, are fostered and sustained in both face-to-face and computer-based environments.

**Purpose and Research Questions**

Broadly, the purpose of this exploratory research study was to investigate the perception of classroom dynamics and student’s identification with academics in several mathematics remedial education classrooms. Perception was measured using the Classroom Dynamics Questionnaire (CDQ), which measures four dimensions of classroom dynamics: teacher respect for students, confidence in teacher’s ability, learner cohesion, and learner voice.

Specifically, the study addressed the following research questions:
1. Are there any differences between online and face-to-face methods in students’ ratings of their classroom dynamics?

2. To what extent do demographic characteristics predict remedial students’ perceptions of online and face-to-face classroom dynamics?

3. To what extent does identification with academics explain remedial students’ perceptions of online and face-to-face classroom dynamics?

4. To what extent do delivery methods, demographic characteristics, and identification with academics explain observed variations in classroom dynamics?

**Significance of the Study**

Despite the dip in overall enrollment at postsecondary institutions, online courses have yet to plateau. Considering this trend in tandem with the fact that “all 22 institutions in the Technical College System of Georgia provide remediation to 26 percent of first-time entry students” leads to the conclusion that one will eventually be an enrollment feeder to the other (CCA, 2012). Therefore, due to the increasing number of students enrolling in remedial coursework, both in-class and online, a systematic analysis is critical for ensuring that remedial students successfully transition into program-ready coursework.

Additionally, the results of this study have the potential to aid in numerous ways the redesign of a college’s administrative practices. Specific to remedial education, this study offers college administrators and leadership staff tools for (a) better preparing instructors to maximize student learning through classroom procedures (e.g., self-directed learning, facilitation practices, etc.), (b) understanding remediation as a social construct,
and (c) creating classroom environments, whether face-to-face or online, which encourage open participation, cultural sensitivity, and a sense of belonging.
CHAPTER 2

REVIEW OF THE LITERATURE

In response to increasing globalization, higher education institutions have advanced their telecommunication infrastructures to make teaching and learning more mobile. These new infrastructures have led to a growing interdependence and interconnectedness among postsecondary institutions as well as greater emphasis on mobility in teaching, both in research agendas and teaching curricula (Kerlaan et al., 2008; Verhoeven et al., 2005). As the two-year college demographic becomes more heterogeneous, the interrelationship of institution and students grows increasingly more important.

A literature review was conducted for this study for the purpose of highlighting and discussing (1) the historical mission of the two-year college, with particular emphasis on critical issues involving students’ social and academic characteristics (e.g., underprepared students, first-generation students, and students with disabilities); (2) varying perspectives on classroom dynamics; and (3) how face-to-face and online classroom environments explain observed variations of classroom dynamics.

The first section of this chapter focuses on the two-year college and its mission, and examines students’ social and academic characteristics. The reviewed literature includes demographic characteristics as well as potential student “barrier” characteristics. Section two centers on the history of remedial education in American higher education and its emergence within the two-year college.
Section three is a systematic review of four studies involving the Classroom Dynamics Questionnaire which were conducted between 2003 and 2010. This latter meta-analysis aims to identify the presence of heterogeneity among the previous studies and to explore the stamina of the main findings using sensitivity analyses.

Section four offers a historical review of the literature involving key theories of classroom dynamics. This section also includes a historical review of the survey instruments and other measurement tools used to determine classroom dynamics, namely the Classroom Environmental Scale (CES), the Adult Classroom Environment Scale (ACES), and the College Classroom Environment Scale (CCES).

Section five examines the four dimensions of classroom dynamics as they are represented in the CDQ: teacher respect for students, confidence in teacher’s ability, learner cohesion, and learner voice. This section also presents a brief historical synthesis of the development of this study’s research instrument, which was created by Valentine, Oliva, and Thomas (2002), and then revised by Thomas and Sethna (2010). Finally, section six reviews the few but still substantial research studies conducted around instructional delivery methods in the remedial education classroom.

**Terms, Concepts, and Definitions**

**Remedial Education**

This study relied on Bettinger and Long’s (2005) definition of remedial education in order to enforce consistency throughout the literature review. According to Bettinger and Long, the term refers to “below college level coursework which includes developmental, remedial, basic-skills training, and non-traditional coursework but excludes English as a Second Language (ESL) courses” (Melguizo et al., 2007, p. 5).
Often, the terms *remedial education* and *developmental education* are used interchangeably; however, due to new accreditation definitions by the Southern Association of Colleges and Schools (SACS) and the Commission on Colleges (COC), remedial education now also refers to students taking pre-degree level coursework (e.g., MATH 0098, 0099; READ 0099; and ENGL 0098, 0099). This latter group served as the focus population of this study.

**Identification with Academics**

Osborne (1997b) defined *identification with academics* as “the extent to which academic pursuits and outcomes form the basis for global self-evaluation—conceptually distinct from, though related to, self-esteem and self-concept” (p. 59). This concept is further expounded upon at the end of Chapter 2.

**Face-to-Face Instruction**

This term refers to teacher-led instruction in a classroom setting, where teachers, students, and instruction are all present synchronously. Traditionally, this type of delivery method is the most prevalent in education and is often referred to as “lecture-based” instruction in higher education.

**Learning Support**

The term *learning support* (LS) is used generically to describe classes designated to help underprepared students for program-ready coursework. Procedure V.B.1 in the *TCSG Admissions Policy Manual* states, Applicants who score below the provisional cut scores in English, math and reading are granted learning support status or referred to Adult Education. Students identified as Learning Support may not take occupational courses until achieving Program Ready status.
Online Instruction

Throughout this study, the terms *online instruction* and *distance education* were used interchangeably. Online instruction is facilitated through teacher-led Internet instruction and computer technologies, which are used asynchronously or synchronously.

The Two-Year College

The origins of the American two-year college can be traced to the early-20\textsuperscript{th} century (Cohen & Brawer, 1996; Quigley & Bailey, 2003). Its inaugural mission continues throughout today’s community and technical colleges: (1) train highly skilled workers to support the nation’s expanding industries, (2) lengthen the “period of adolescence,” and (3) allow access to higher education for all (Cohen & Brawer, 2003, p.1). Because of its open-access admissions policies, more affordable tuition, and accessibility, the two-year college experienced a significant expansion of facilities and boost in enrollment in the late 1960s, and has continued to grow steadily throughout the new millennium. Today, a total of 1,132 community colleges serve over 12.8 million students in the United States (AACC, 2014).

In 1970, the City University of New York (CUNY), under the petition of activist Mina Shaughnessy, initiated an open-access admissions policy. This policy aimed to create educational opportunities for all college applicants, especially low-income minority applicants. As an open-access institution, the use of standardized test scores was abandoned, and students with varying educational diplomas (e.g., general and non-academic high school diplomas) were admitted along with students holding college preparatory diplomas (David & Davis, 1996). From 1969 to 1999, all CUNY colleges admitted any high school graduate or GED recipient (Gallagher, 2010); on average “a
great many of these students fell below college level in their mathematics and language skills, and a substantial stratum of remedial courses were put in place at these institutions to make up for this lack” (Fullinwider, 1999, p. 8). The open-access policy therefore led to an increase in underprepared students enrolling in CUNY’s colleges, which in turn led to an increasing need for more remedial courses. Opposition to open-access admissions began to surface, with many detractors asserting that the policy was devaluing the academic standards of CUNY’s diplomas. Thirty years after its inception, New York City Mayor Rudy Giuliani and New York Governor Georgia Pataki pledged to remove CUNY’s open-access admission policy and begin the process of eliminating developmental education courses by 2002 (Marcus, 1999).

As open access within four-year universities becomes less common, “America’s community colleges have the unique mission to provide open access and affordable education to all who desire to learn” (Shannon & Smith, 2006, p. 15). The American Association of Community Colleges (1998) described the scope and significance of the community college:

The network of community, technical, and junior colleges in America is unique and extraordinarily successful. It is, perhaps, the only sector of higher education that truly can be called a “movement,” one in which the members are bound together and inspired by common goals. From the very first, these institutions, often called “the people's colleges,” have stirred an egalitarian zeal among their members. The open door policy has been pursued with an intensity and dedication comparable to the populist, civil rights, and feminist crusades. While more elitist
institutions may define excellence as exclusion, community colleges have sought excellence in service to the many. (p.5)

The community college is committed to providing access to higher education by instituting open admissions policies for students who do not have the monetary means or appropriate academic preparation to attend a four-year college (Kozeracki, 2002). This commitment has led to the creation of specific remedial education programs and courses which assist in preparing underprepared students for college-level coursework (Kozeracki & Brooks, 2006).

Community colleges enroll almost half of all undergraduate students in the U.S. and are essential in workforce development and training (Kolesnikova, 2009). They provide unique educational opportunities for a variety of students. Therefore, it is imperative for today’s community colleges to understand the broad perspectives of open-access students, their social and academic characteristics, and the academic barriers they face (e.g., as first-generation students, underprepared students, and students with disabilities), in order to adapt to the ever-changing needs and demands of society.

Social and Academic Characteristics

In the early 1970s, a small yet significant structural change began to occur within the two-year college demographic. As more women, older students, and minorities enrolled in the two-year college, a shift in student’s social and academic characteristics occurred. These students were more likely to hold full-time or part-time employment, have two or more children, have a GED, receive full financial aid benefits, and take 12 credit hours or less per semester (AACC, 12). Due to these characteristics, students face unique challenges before they even enroll in college.
During the 2007-2008 academic year, the NCES (2011a) reported that the enrollment distributions of students with characteristics which may adversely affect persistence and attainment in two-year community colleges were higher than any other instructional sector combined. According to the NCES report, 56% of students enrolled in a two-year college were considered financially independent, 70% were enrolled part-time, and 40% delayed enrollment due to a variety of external factors. The NCES statistical information represented two-year community colleges; it did not reflect the technical college system. In addition, I cannot verify that the NCES statistical information included remedial education students. Apparently, most states in the 2007-2008 academic year did not submit data that included remedial education students because that population was included in the broad category of “special enrollments.” Therefore, I hypothesize that the percentages detailed would increase significantly with the inclusion of remedial education statistics. Therein lies a pronounced gap in the research literature. The general profile of the community and technical college student is relatively well understood. However, if that profile omits a new and increasing student demographic, then the educational disparities for this population will remain unknown.

Research has found that student entry characteristics, specifically those varying from what is considered the norm for traditional college students, help explain patterns displayed in student persistence (Braxton et al., 2004). The student entry characteristics of today’s technical college students contain several risk factors, which fall along a continuum that includes such risks as being underprepared for academic coursework, not enrolling in college directly after high school, attending college part-time, and being a first-generation student, to name a few. If a student enrolls in a technical college and
displays two or more of these characteristics, he or she is considered at-risk and is less likely than a traditional student to persist or graduate. Recent studies have shown that the combination of student entry characteristics and academic momentum variables—the academic skills and knowledge necessary to advance students’ achievement in their academic coursework—contributes to student persistence and success (Berger et al., 1999; Cabrera et al., 1992; Swail et al., 2005). Kuh, Kinzie, Buckley, Bridges, and Hayek (2006) confirmed that more community and technical college students exhibit these characteristics than their counterparts in four-year postsecondary institutions.

There are a number of factors, both academic and social, which can negatively impact the “college-going” chances of a community and technical college student. In addition to those already noted, there are a few emotional and psychological characteristics that are considerably harder to identify during recruitment and retention efforts. These emotional struggles include, but are not limited to, low self-esteem, stress and feelings of aloneness brought on by limited support of family or peers, and the effects of a mental illness. Such struggles, sometimes referred to as emotional boundaries, can often be more detrimental than other “external” risk factors like poverty and being a first-generation student because they stem from a very sensitive place and are the hardest to regulate (Lazarus, 2006). Therefore, as Altman et al. (2009) suggested this is a primary reason why strong teacher-student and student-student relationships are so important in the classroom—to balance the social and academic characteristics as well as the emotional needs of students with academic coursework. Furthermore, it is the responsibility of the institution to create an environment that accommodates a variety of emotional experiences. By doing so, the institution allows for future learning, teaching,
and motivational processes to occur more organically in the classroom (Goldstein, 1999; Hargreaves, 1998, 2001; Meyer & Turner, 2002; Sutton, 2004; Zembylas, 2005).

**The Role of Race and Gender**

The field of Adult Education has an extensive and varied history as it relates to the educational experiences of diverse groups. These experiences encompass social, personal, and moral developments and come with a myriad of areas of practice. Traditionally, these fields of practice exist within the structural power relations based on the perpetuation of white privilege. Therefore, an understanding of the racial effects associated with teacher/student and student/student transactions are essential for building effective classrooms and classroom environments.

Within the last decade, the social science discipline has begun to recognize and examine how whiteness undergirds and perpetuates systems of oppression and opportunities within adult education practices (Barlas, 1997; Colin & Preciphs, 1991; Johnson-Bailey & Cervero, 2000; Shore, 1997, 2000). Manglitz (2002) asserts, “by examining how the invisibility/norm of whiteness has influenced adult education curriculum, access, interactions, and structural relations of power, we can understand how whiteness still impacts in power ways to advantage those who have it and disadvantage those who do not” (p. 8). This perpetuates the problem adult education classrooms are currently facing: the marginalization of relationships (teacher/student, student/student, institution/student) imperative to ensuring a physical environment which influences academic performance.

Conducted through qualitative analysis in regards to how power relations in the teaching and learning environments play out in the classroom, Johnson-Bailey and
Cervero (1998) compared two self-taught courses in a post-secondary institution and concluded adult education classrooms do not accurately represent the real world in their disregard to society power structures that follow adult learners into the classroom. They conducted seven interviews of each other’s students using an interview guide that indirectly focused on power issues in the classroom. A pivotal finding in their study was that the positionality of the professors strongly affected the process of the dynamics in the classroom. Further data analysis revealed that “whiteness” had a significant influence on the development of classroom dynamics. Therefore, an important implication was revealed: the environment of the adult education classroom reflected and reinforced the social hierarchies found in mainstream society.

Colin and Preciph (1991) summarized the prospective impacts of racism on the adult education classroom: (1) development of practitioners’ perceptual patterns and (2) how these patterns are reflected in adult education practices and the teaching-learning process (Manglitz, 2002). They further postulated that the preparation for an impending multicultural society would require adult educators to further develop their understanding of the role racism plays within adult education practices. Their research argued that the learning environment in its entirety is adversely influenced by racism. Further explorations have been made into the interconnectedness of systems of privilege, inequality, and oppression in the adult education classroom (Tisdell, 1993), specifically practices related to the power dynamics in teaching and learning and how they can underscore social power relationships which affect classroom efforts (Johnson-Bailey & Cervero, 1998). Colin and Preciph concluded their research by noting sufficient empirical research exists affirming that color “determines the quality and quantity of
interactions between educational practitioners who are members of the dominant racialized group and learners from non-White racialized groups” (p. 62).

The aforementioned perceptual patterns lead to the acknowledgement that negative perceptions by practitioners regarding minority adult learners exists based upon a White norm. Therefore, the assumption is that practitioner’s behaviors within a teacher/learner exchange are a direct result of the influence of perceptual patterns. This further supports Colin and Preciphs (1991) belief that teacher/learner interactions are an essential and necessary component in ensuring an effective learning environment, with the intensity of these interactions playing an even more imperative and fundamental role. However, these studies omit the idea of the teacher’s race and ethnicity on student learning outcomes.

A study which employed data from the national educational longitudinal study of 1988, found little correlation between the teacher’s race and ethnicity and how much student’s learned; however, did discover a correlation between teacher’s subjective evaluation of students (Ehrenberg & Brewer, 1994). When the race, gender, and ethnicity matched that of the students, it yielded higher subjective evaluations of the students. Therefore, even though the study concluded race have no effect on how much students learned, the differences in subjective evaluations supports the idea that race is a key power structure which exists in the classroom and impacts classroom dynamics.

A correlation analysis conducted by Tettagah (1996) examined race from the perspective of white teachers. It revealed that teacher’s perceptions of race varied according to the race and/or ethnicity of the students. It is further supported by Pigott and Cowen (2000) which found that race was the strongest determinate of teacher’s judgment
on all measures. Its secondary findings concluded that African American teachers judged all students to have fewer problems, more competencies, and even better educational futures than those of their white colleagues. However, the study’s strongest finding was that both African Americans and White teachers judged African American students to have fewer competencies and more serious school adjustment issues than white students. These findings are further supported by Marin’s (2000) research which sought to understand the experiences of faculty members and students, the teaching methods and course content, and the classroom dynamics found within these settings. His study consisted of a qualitative case study at the University of Maryland where one-third of the student body is minority. Analysis of his data revealed three overarching themes: (1) racial and ethnic diversity is necessary for creating the most effective educational atmosphere, (2) ethnic and racial diversity increases the educational possibilities of the classrooms, and (3) multi-ethnic and multi-racial classes enhance educational outcomes. Therefore, a multicultural classroom is mutually beneficial to both students and faculty. However, the majority of facilitation and responsibility of ensuring a multicultural classroom lies on the instructor. “In general, multi-racial/multi-ethnic classrooms expand on course content by engendering more perspectives, more complicated discussion, and more sophisticated analysis” (Marin, p. 69).

Geoffrey Maruyama and Jose Moreno reported the first comprehensive, nationwide survey of major universities faculty and their perceptions and attitudes toward diversity within their institutions and classrooms. Their findings indicated that faculty members believe diversity helps all students achieve in the “essential goals of a college education; that white students suffer no adverse effects from classroom diversity; that
their institutions values racial and ethnic diversity; and that campus diversity is desirable and beneficial for all students and faculty” (Maruyama & Moreno, 2000, p.4). Maruyama and Moreno’s findings suggest that faculty members strongly believe in racially and ethnically diverse classrooms and that they enrich the educational experiences of white students.

Gender is but one of the various factors which can influence a students’ academic performance, social and emotional growth, and career advancement. Whether consciously or not, gender is one of the most fundamental ways to categorize people and as a result, gender dynamics in post-secondary classrooms ironically remain both obvious and overlooked. Since the hallmark publication of How Schools Shortchange Girls: A Study of the Major Findings on Girls and Education (1992), the impact and effect of gender on classroom dynamics has garnered attention at the local, state, and national levels and has become a prominent topic of educational literature and discussions. And “as more and more of our students have grown up in a time where gender equality is “both taken for granted and not yet a reality”, the classroom gender dynamics have become even more complicated to identify, much less address” (p. 9). However, post-secondary institutions, and more specifically content instructors, must be aware of the patterns of behaviors and teaching strategies needed to best encourage student equity and foster participation in the classroom.

Female students have made substantial gains in higher education over the last thirty years. Despite these gains, females continue to face numerous obstacles in the post-secondary classroom. One such obstacle is how content curriculum is presented to the class. Administrators and instructors must be cognizant that when students walk into the
classrooms, they bring with them a diverse array of educational experiences unique to the individual. This creates a large social and cultural context within classrooms, where numerous factors, including race, gender, and socio-economic status, work together to influence teacher and student behaviors and learning styles.

Pervasive teacher and student behaviors have been studied throughout a range of educational settings (Sadker & Sadker, 1986; Hall & Sandler, 1982; Sanders et al., 1996). Researchers have concluded that male students have more opportunity to interact in classrooms than females. These studies found gender bias patterns that persist within teachers and student behaviors in the classroom and support a “chilly” classroom climate for female students. Teachers are more likely to (1) call on male students more often than female, (2) wait longer for males to respond to a question than females, (3) provide male students more eye contact, (4) coach male students to develop more critical thinking skills, and (5) provide male students more assistance when completing projects, rather than doing it themselves. Remarkably, these patterns are consistent across grade level, course, the ethnicity of the instructor, the gender of the instructor, and the geographic location of the institution (Sadker & Sadker, 1985). Due to this, female students are (1) less likely to raise their hands immediately in response to a question, (2) less likely to demand the teacher’s attention, (3) less likely to receive feedback (criticism or praise), (4) less likely to review peers’ approval if they do speak frequently, and (5) are more likely to be interrupted when questions are directed towards them (Sadker & Sadker, 1986; Hall & Sandler, 1982; Sanders et al, 1996). It is imperative for post-secondary institution, especially those providing remedial services, to recognize these patterns and
work to counteract them. By doing so they are teaching to promote gender quality and ensure sensitivity to women in the classroom.

**Underprepared Students**

Noel, Levitz, and Saluri (1985) described academically underprepared students as having “distinctive characteristics that are perceived by the academic community to place them at a disadvantage in contention with the vast majority of students who enter college with the academic skills necessary for success” (p. 96). Underprepared students comprise a diverse group of individuals with varied cognitive abilities, educational backgrounds, socioeconomic statuses, races, ethnicities, and life experiences. There is no one specific or identifiable characteristic that all underprepared students possess. Yet, they all share a high probability of enrolling in a remedial or developmental education course after entering a postsecondary institution. Each year, two thirds of high school graduates enter college unprepared academically for college-level coursework (Green & Foster, 2003). As a result, approximately one third of students entering postsecondary institutions will require some form of remedial or developmental instruction before transitioning into college-level coursework (Bettinger & Long, 2009). Moreover, as the Center for Public Policy Priorities observed, “the majority of underprepared college students are concentrated in two-year institutions” (p. 2), which places the critical task of fostering college readiness squarely on the shoulders of community and technical colleges.

Boylan, Bonham, and White (1999) and Boylan (2003) identified seven major categories of underprepared students. These categories include common predictors such as students who have made poor academic choices in their academic career(s), returning college students over the age of 25, students with disabilities, and minorities. Other, less
commonly recognized early predictors of remediation include students who attend college only for certain benefits and who have no clear academic objectives, as well as more extreme cases of students struggling with severe social, emotional, or psychological issues that impede their academic success. With these predictors in mind, Cheng (1994), McCabe (2000), and Moore (2004) developed a method of “catch up” for students within the aforementioned categories. The most prominent method is to meet students where they are and where they feel most comfortable. Despite its seeming simplicity, this method is less common within mid-size to large community or technical colleges, especially within remedial education classes, due to limited resources and insufficient policies. More importantly, it addresses certain policies, such as mentoring and advisement, academic tutoring, free on-campus psychological support, and financial aid, which can help promote student success.

As McCabe, 2000 stated, “the problem of underprepared citizens is not an educational issue alone. It is seated in and influenced by a rapidly changing society with demographic changes, continued poverty, and new family structures producing more underprepared students” (pp. 7-8). That is, educating the academically underprepared student is less for the benefit of the institution but more for the betterment of American families.

**First-Generation College Students**

A first-generation college student is defined as a student “whose parents have no college or post-secondary experiences” (Saenz & Barrera, 2007, p. 1). First-generation students have always attended colleges and universities; however, in the last few decades, an abundance of first-generation students have enrolled due to factors such as the
availability of higher education, changes in student and institutional ideologies, increased employment requirements, and economic need. This increased enrollment has brought a variety of challenges to postsecondary institutions. First-generation college students tend to be (a) from low-income families, (b) minorities, (c) academically less prepared for college, and (d) enrolled in at least one remedial class during their freshman year (Chen, 2005; London, 1989; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Somers et al., 2004). However, the students face even greater challenges.

There are numerous practical and academic obstacles first-generation college students face in comparison to non-first-generation students (Pike & Kuh, 2005; Stebleton & Soria, 2012; Terenzini, Springer, Yaeger, Pascarella, & Nova, 1996). One of the major obstacles is the college application process. High school counselors are often the first people to speak with first-generation college students about their higher education options. Typically, these students have no understanding of what paperwork, processes, and/or deadlines they must submit or adhere to in order to apply to college, and once they are successfully enrolled, they often lack the information and knowledge needed to request financial aid, register for classes, and manage a new academic course load. For this reason, academic support services are critical for first-generation college students; they offer students the guidance needed in order to be successful during their first semester. This is especially important for remedial education students because of their additional course load and prerequisite requirements.

First-generation students are often older, minority students, and/or students who have a disability (Bui, 2002; Hertel, 1992). Possessing one or more of these characteristics not only increases a student’s chances of enrolling in a remedial or
developmental education course but also hinders his or her decision to attend college (Bradbury & Mather, 2009; Strayhorn, 2006). Bourdiue (1977) and Coleman (1988) maintained that students of college-educated parents have greater access to the cultural and social capital necessary to take advantage of educational and economic opportunities. This privileging only widens the gap for non-native English speakers or immigrants, who often receive poorer academic preparation in secondary school and who face far greater employment uncertainties (Jehangir, 2010). Finally, students’ academic success is not based solely on the completion of a degree but also on career attainment and satisfaction, socioeconomic status, and quality of life (Pascarella & Terenzini, 2005).

**Students with Disabilities in Two-Year Postsecondary Institutions**

The correlation between the successful completion of a college certificate, diploma, or degree and improved employment and job outlook has been well established within the higher education literature. However, individuals with a disability are less likely to enroll in a postsecondary institution and more likely to have lower rates of persistence and completion in their educational coursework than their peers (Ponticelli & Russ-Eft, 2009; Quick, Lehmann, & Deniston, 2003). Yet, even though students with disabilities are still greatly underrepresented within higher education, their enrollment numbers continue to grow (Garrison-Wade & Lehmann, 2009; Hawke, 2004). National data trends show that students with disabilities are more likely to enroll in a two-year postsecondary institution than a four-year institution. More specifically, NCES (2008) reported that the enrollment of students with disabilities had increased from 11% in 2003 to 16% in 2007. The U.S. Department of Education also found that nearly 60% of college students who reported having a disability attended a two-year or less-than-two-year
program (Horn, Peter, & Rooney, 2002). Furthermore, the National Postsecondary Student Aid Survey (NPSAS) found that most students with disabilities who were enrolled in a two-year college had some form of cognitive impairment which hindered their ability to successfully complete their respective program of study. Therefore, ensuring that these students’ academic needs are sufficiently met has become one of the integral components of the community and technical college system. Even so, very little research has been conducted around identifying academic support services most appropriate for students with disabilities in two-year postsecondary institutions.

While there are numerous scholarly publications about the experience of students with disabilities at four-year postsecondary institutions, there is a gap in the research regarding specific implications for students with disabilities at two-year colleges. As Mamiseishvili and Koch (2012) noted, this is clearly “a pressing problem for administrators and disability support staff members at 2-year institutions, and failure to seriously examine what these institutions can do to increase the persistence rates of students with disabilities … disadvantages a large segment of the student population” (p.332) and hinders much-needed policy reform. Regarding underprepared students, first-generation students, and students with disabilities, an easily conceptualized trend analysis persists in relation to pattern predictions of these subgroups to the remedial education population.

The Technical College System of Georgia

The Technical College System of Georgia oversees economic and workforce development as well as adult education programs for the state’s technical colleges. TCSG has experienced significant changes over the last 30 years. It has expanded program
offerings to include associate of applied science degrees and signed articulation agreements allowing transferability of specific courses to four-year colleges and universities. Through this expansion, TCSG has experienced an increase in the number of remedial education students as well as students enrolled in online coursework. For the first time in TCSG history, the two have become symbiotic.

**History and Growth of TCSG**

The origins of TCSG date to 1917 with the passage of the Smith-Hughes Act, sponsored by U.S. Senator Hoke Smith and future Georgia governor Dudley Hughes, who recognized the need to fund vocational education in agriculture. By 1958, W. H. Hicks became the state’s first supervisor of trade and industrial education and “developed a set of policies for area vocational-technical schools, thus paving the way for a unified system of vocational training in Georgia” (Koon, 2007). By the late 1960s, a total of 19 vocational-technical schools had opened across the state offering training to support new and expanding industries in Georgia. In 2008, due to a rapid increase in student enrollment brought on by the Great Recession, TCSG set forth to improve its course offerings, specifically in remedial education, in order to accommodate the growing and increasingly heterogeneous student population (CCG, 2012).

The rapid enrollment growth in Georgia’s technical colleges can be attributed to a number of variables. As previously mentioned, the 2008 economic crisis sent several million students back to college seeking to retrain or receive new training in technologically centered job fields. Among these newly enrolled were over a million underprepared students (Duckworth, 2008). In Georgia, over 42,000 students were enrolled in at least one learning support class during the 2011 fiscal year (TCSG Strategic
Plan, 2014). With such a high volume of remedial students, TCSG decided to divide its learning support division into two sections: developmental and remedial. The following section of the literature review examines both remedial and developmental education, though the remedial education population served as the sample population for this research study.

**Remedial Education**

Remedial education, originally referred to as learning assistance, dates back to the 1600s. The Association for the Study of Higher Education (ASHE) (2010) classified learning assistance into six distinct historical phases. This section examines these six phases and also uses Arendale’s (2001) report to offer a comparative analysis of each phase.

Learning assistance has played a pivotal role in the history of U.S. postsecondary education. Regardless of the synonymous terminology used to describe learning assistance (i.e., developmental education, compensatory education, remedial education), its implementation has resulted in a multitude of instrumental approaches to learning. Historically, it “bridged the gap between students’ academic preparation and expectation of college courses” by providing embedded tutoring, learning support centers, and changes to the college learning environment (ASHE, 2010, p. 29).

**Phase 1: The 1600s to the 1820s**

In the late 1600’s, learning assistance emerged with the implementation of college admission requirements. Most often, admission was denied due to academic deficiencies in areas such as mathematics or foreign languages (namely, Greek or Latin). College students (affluent, White males) needing to increase their academic skills hired a private
tutor. By the mid-1700s, private tutors were very common in postsecondary universities, especially prestigious institutions such as Harvard and Yale; even after gaining admittance into these universities, many students continued receiving tutoring in order to maintain a grasp on the difficult content. Harvard eventually became the first postsecondary institution in the U. S. to require remedial studies for most first-year students (Boylan & White, 1987). Each week remedial studies students would meet as a class with their tutor for a group session, which involved the tutor conducting recitation exercises in order to identify which students had sufficiently memorized the text. “This practice failed to meet the needs for the most gifted and the struggling students, as it focused on the average student’s mastery level of the academic content material” (ASHE, 2010, p. 26). However, this model provides the foundation of several remediation strategies still used today.

**Phase 2: 1830s to 1860s**

The second phase coincides with the period of Jacksonian democracy in the U.S. During this time, Whites benefited from an extension of educational offerings. Postsecondary schools were becoming more common and more accessible to the middle class. However, because secondary schools were virtually nonexistent, many middle-class students could barely read or write (Craig, 1997). The need for more tutoring was evident; yet, the earlier ineffective model of tutoring needed first to be redesigned.

During this second phase, postsecondary institutions began imbedding remedial and developmental coursework into their curricula. This caused great controversy in light of the prevailing elitism of the time; however, in 1849 the University of Wisconsin initiated the first remedial education program, offering remedial courses in reading,
writing, and arithmetic (Breneman & Haarlow, 2003). Remarkably, by 1894, 40% of University of Wisconsin students had enrolled in this college preparatory program (Ignash, 1997). This led to a phenomenon previously unheard of in American postsecondary universities: the recruitment of academically underprepared students.

Most recruitment of academically underprepared students occurred after the U.S. Civil War. “Economic and social changes throughout the United States fueled by the Civil War significantly influenced expansion of learning assistance at more colleges” (Arendale, 2001, p. 30). At this time, many students either left college or never applied in the first place, opting to join the military. In response to this exodus, both northern and southern colleges replaced these students (and their tuition dollars) with students who were too young for military enlistment. For example, the Faculty Senate of South Carolina College passed a resolution to admit young students to replace the loss of revenue by students who had left college to join the Confederate Army (Rudy, 1996). As this younger, underprepared population enrolled in postsecondary coursework, the need for expanded learning assistance became evident.

**Phase 3: 1870s to mid-1940s**

The third phase of learning assistance involved several major expansions, resulting in a model very similar to the one used in today’s postsecondary institutions. During this time, remedial courses were well solidified within the college curriculum, and federal assistance like the First Morrill Act (1862) were established to help colleges and universities foster new programs in agriculture and mechanical arts. This offered higher education institutions even wider access to underprepared students. “The dramatic widening of access to postsecondary education accelerated development of academic
departments that offered remedial courses and tutoring deemed essential for the new students” (ASHE, 2010, p. 31). Not only did college and university enrollment spike, but remedial courses did as well. However, during this phase, the social and academic discrepancies between academically prepared and underprepared students became apparent and problematic:

Offering remedial courses and other learning assistance services in a college department addressed many of the problems experienced by external academic preparatory academies such as lack of coordinated curriculum, poor teaching facilities, lack of proper administrative control, and increased stigma for participating students. These problems were the result of the very nature of these academies, as they were clearly separate and seen just as a prerequisite to the college experience. (p. 31)

In the early 1860s, as the need for academic preparatory departments within postsecondary institutions became more pronounced, the term remedial education began circulating. Remedial education focused on students’ specific skill deficiencies and the educational approaches used to address these deficiencies. The College Reading and Learning Association defined remedial students as those “who are required to participate in specific academic improvement courses/programs as a condition of entry to college” (Rubin, 1991, p. 9).

Enrollment in remedial education courses was often a prerequisite to enrolling in college-level coursework. In 1879, 50% of Harvard’s applicants were admitted on “conditional” terms due to failed entrance tests. By this time, Harvard’s tutorial programs had expanded to assist these provisionally admitted students. As a result, Harvard was
one of the first postsecondary institutions to offer remedial English courses for first-year students. Yale, Princeton, and Columbia soon followed.

**Phase 4: Mid-1940s to 1970**

During the middle of the 20th century, as the direct result of escalating college enrollment, remedial education increased. Along with this increase came heightened stigmatization of learning assistance students, even though enrollment in remedial courses was common (Brubacher & Rudy, 1976; Maxwell, 1979). The students enrolling in remedial coursework were often underrepresented students of color from urban areas.

In the early 1900s, an expansion of the secondary school model known then as the “junior college” but now referred to as the community college began receiving higher numbers of remedial education transfers from colleges and universities. In response, “community colleges retrained their transfer function and expanded their mission to serve students who were academically underprepared and those enrolled in new certificate vocational programs that served the local community” (ASHE, 2010, p. 40). This shift, combined with the increased number of students taking advantage of the federal G.I. Bill, drastically expanded the remedial education population at community colleges. Beginning in this phase, it became the responsibility of community colleges to provide the majority of remediation to students. With this came the creation of college resource programs such academic success centers and reading, writing, and math tutoring labs.

**Phase 5: 1970s to mid-1990s**

In the early 1970s, a new form of learning assistance grew quickly within the community college system: developmental education. This new form was developed “to serve students with low academic preparation or those who had previously earned low
grades in a college course” (ASHE, 2010, p. 42). During this fifth historical phase, the demographic makeup of the student body became more diverse—economically, culturally, and academically. Moore (2004) found “African American and Hispanic students in developmental education programs at two-year colleges have much lower rates of retention and graduation than White students” and a “disproportionate elimination of minority students in developmental education programs at two-year college” is evident (p. 58). Unfortunately, this stigmatization and tracking of minority students in developmental and occupational courses continued.

Karabel (1972) asserted the community college knowingly tracked lower-class students into occupational programs as a way of averting their academic ambitions for earning higher degrees and higher-status employment. Therefore, he contended a key element of the American community college was rooted in a class-based education system. This is the antithesis of the earlier statement by McCabe (1992): “could well be [our] best hope for radically improving the social and economic conditions that threaten America with an established underclass dominated by minorities . . .” (p. 14). Zwerling (1976) furthered this analysis by arguing that the role of community colleges “have become just one more barrier put between the poor and the disenfranchised and a decent and respectable stake in the social system which they seek” (p. xvii). He contends, their function is to “assist in channeling young people to essentially the same relative positions in the social structure as their parents occupy” (p. 33) Like Karabel, Zwerling focused on the heavily vocational emphasis of community colleges and argued that the trust towards vocational programs, along with the career counseling of students, served as a form of control mobility between classes” (McGrath & Spear, 1987). Therefore, the expansion of
occupational education, referred to in the current study as technical education, was “an ingenious way of providing large numbers of students with access to schooling without disturbing the shape of the social structure” (Zwerling, 1976, p. 61). Thus, it can be argued, the expansion of remedial programs during the 1960’s and 1970’s could be seen as an extension of tracking lower-class students.

During this time, learning assistance support systems (as they were then called) were introduced (Arendale, 2004; Christ, 1971). These centers were comprehensive academic labs (Christ, 1971) with the mission of “meet[ing] the needs of students facing academic difficulty in a course and to provide supplemental and enrichment learning opportunities for any students at the institution” (Arendale, 2004, p. 43). In 1975, Enright encouraged the development of academic learning centers that (1) applied technology for individualized learning, (2) responded to lowered admission standards, (3) focused on cognitive learning strategies, (4) increased student retention, and (5) were perceived to enrich learning for all students, regardless of previous academic performance. These centers helped students to avoid stigma because they were operated under an academic open-door policy, which allowed any student the right to use their labs, not just learning assistance students.

**Phase 6: Late 1990s to the Present**

In the late 1990s, public perception of learning assistance changed—and not for the better. The terms developmental education, compensatory education, and remedial education came under intense public criticism. Public four-year universities tried to respond to these criticisms through open dialogue, and numerous publications with a vested interest in improving the campus learning environment, promoted academic
conversations (Barr & Tagg, 1995; Lazerson, Wagener, & Shumanis, 2000). Ultimately, college learning environments experienced a paradigm shift in the way they assisted student learning and faculty development, manifested most clearly in the creation of the teaching and learning center model. This model, unlike the learning assistance model, focused on learning strategy centers (providing orientations, workshops, tutoring, and supplemental classes), student disability services, and leadership development programs as means of assisting students in improving communication and pedagogical skills necessary for the learning assistance environment.

**Classroom Dynamics**

In a 2011 Oxford University Press blog entitled “Classroom Dynamics in a Changing World,” freelance writer Martyn Clarke described classroom dynamics in the following way:

> Every classroom is made up of unique individuals, each bringing their own expectations, values, and attitudes, to create a one-off community. This community is also influenced by the culture of the society it belongs to, and the institution of which it is a part. It is itself constantly evolving, as do its individual members. It really is quite a messy place when you come to think about it, so one-size-fits-all answers won’t, in fact, fit. (p.1)

To build on this description, the concept of classroom dynamics comprises student behaviors, emotional intelligences, and personal psyches. Academically, it involves group learning and important positive interactions between students and their instructors, and between students and their peers. These interactions help to maximize the learning that takes place within the classroom (Johnson & Johnson, 1998). Theoretical
contributions from Lewin (1948), Moos (1979), and Germain and Bloom (1999) have led to a greater understanding of group dynamics, social climate, and the social-ecological perspective of the adult education classroom.

Kurt Lewin is arguably the most prominent and influential theorist of group learning. He was a pioneer of “group dynamics,” originally focusing on group productivity, communication, social perceptions, intergroup relations, group membership, leadership, and group functionality (RCGD, 2015). In his *Frontiers in Group Dynamics*, Lewin (1947) stated:

Research in group dynamics is, as a rule, group research. It requires the cooperation of persons who steer group life and who record and measure various aspects of group life. One cannot overemphasize the importance of the spirit of cooperation and of social responsibility for research on group processes. To my mind it is equally important that the same spirit of cooperation dominate the relations between the various institutions which happily have become active in this field. (p.153)

Lewin’s research on group dynamics led to an evolved interest in the study of the perceptions of classroom learning environments (Fisher & Fraser, 1983). Using and understanding Lewin’s theory of group dynamics, remedial education instructors have the potential to identify the relationships necessary for fostering and facilitating learning, whether face-to-face or online. Darkenwald (1987) furthered Lewin’s (1947) and Moos’ (1979) research with his social environment theory, which postulates that people and environments mutually influence one another. An understanding of environments must
occur before any assessment of their impact on the teaching and learning process can take place (Darkenwald, 1987).

The theoretical writings of Lewin (1948) and Moos (1979) provide ways to understand student perceptions of classroom dynamics through the lens of social dynamics. “Their approaches to classroom dynamics emphasize that teacher and student qualities, characteristics, and relationships affect learning environments and can dictate students’ perceptions in particular social settings” (Davis, 2006, p. 132). Rooted within Lewin’s theoretical work, the classroom is now recognized as a social system consisting of a combination of specific characteristics which influence students and teachers (Getzels & Thelen, 1960) including, students’ backgrounds, personalities, and needs, as well as, curriculum expectations, compulsory social interaction of the classroom participants, control of the classroom teacher, and out-of-class membership of groups (Hall & Sink, 2015). Moos’ (1979) conceptualization of classroom social environments consists of three dimensions: (1) interpersonal relationships, (2) goal orientation or personal growth, and (3) system maintenance and system change. These dimensions are greatly influenced by a number of human behaviors, specifically personality (and other personal characteristics), environmental influences, and social-ecological setting. Writing about classroom social environment, Moos stressed the following:

1. “The environment in which behavior takes place must be considered in order to predict individual functioning more accurately.”

2. “The environment can exert a potent influence on the extent and kind of exchange that occurs in human characteristics.”
3. “The social-ecological settings in which students function can affect their attitudes and moods, their behavior and performance, and their self-concept and general sense of well-being.” (p. 2-3)

Along with his three dimensions of classroom social environments, Moos outlined six additional dimensions of human environments as they relate to indices of human functioning: (1) ecological dimensions, (2) behavior settings, (3) organizational structure, (4) collective personal and/or behavioral characteristics, (5) psychosocial characteristics and organizational climates, and (6) relevant variables to the functional and reinforcement analyses of environments. These dimensions are particularly important when considering the human environment of remedial education students because they impact both the individual (student) and the group (classroom). Schlossberg, Lynch, and Chickering (1989) proposed that, along with the importance of an ecological perspective, the concept of learner-environment “fit” greatly influences the process of student development. “This ‘fit’ refers to the congruence of learner goals, expectations, and commitments with the learning environment of the institution in which they participate” (Barnett, 2008, pg. 37). Schlossberg et al., model suggested that “by assessing individual learners and learning environments, it is possible to better predict learner involvement, retention, and satisfaction (p. 26).

Moos (1979) describes students’ perceptions of classroom social environments as “including students’ perceptions of classroom involvement (the extent to which students perceive attentive engagement in classroom learning activities) and students’ perceptions of classroom affiliation (the extent to which students perceive a friendly camaraderie among classmates (Byer, 1999, pg. 5). Zevin (1983) further examines student
involvement in classroom learning as an important characteristic which promotes students’ academic motivation. The more students perceive their involvement within classroom learning, the more positively they relate to academic self-concept (Knight & Waxman, 1990). Students perceiving a strong affiliation-oriented classroom environment, supported by that of mutually supportive peers, promotes confidence in academic self-efficacy (Van Egmond, 1960; Schmuck et al., 1992).

Germain and Bloom (1991) provided an overall theoretical framework of what they defined as the social-ecological perspective and its impact on the classroom social environment. Their research was based conceptually on the assumptions that people are embedded in social and environmental contexts and therefore are invariably influenced by the social and behavioral patterns around them (Cairns & Cairns 1991; Germain & Bloom, 1999). Germain and Bloom made five assumptions that were based fundamentally on Moos’ theories but probed more deeply the multidimensional perception of the residential ecology of human behavior. This is an important perspective to consider when working with adult and remedial education students because of its impact on the coercive power of vulnerable groups (Gitterman, 1991). Their five assumptions can be categorized as follows:

1. Person: Environmental unit of analysis. “We most nearly understand a human situation to the extent that we know what relevant people bring to and receive from the specific situations in given periods of time. Removing any of these factors from the formulation and we lose significant aspects of social reality” (Germain & Bloom, 1991, p. 11).
2. General tendency toward adaptation: Adaptation is continuous. The student and the school, “as resulting accommodations of factors compose them” (p.11), experience a mutual dynamic relationship in which each gives to and receives from the other. The relationship can be problematic in several ways; however, “the goodness of fit between young adults and society will have to be renegotiated, both on an individual and a collective level” (p.12).

3. Factors that facilitate or impede adaptation. Numerous factors impede the adaptation processes of students. Many of these are commonly found in today’s remedial education classes (e.g., unemployment, poverty, mental and societal stressors, class structures, and even race). For adult education instructors, “societal and instructional stressors become the subject of social policy analysis and legislative advocacy” (p. 14).

4. Flow of life events. “We assume a general flow of life events that are perceived by people as negative stressors or positive challenges (or a mixture of the two),” and “when a challenge is not successfully engaged, there may be a disappointing loss of opportunity” (p. 14). However, “when the engagement proves to be successful, the challenge is met and usually results in personal development for the involved person, or positive changes in the environment, or both” (p. 17).

5. The transacting configuration. “Environmental configuration”—that is, the consideration of “all the relevant systems and subsystems that may play a part in the mutual adaptation” (p.17)—is an important part of understanding any life event. These subsystems include a person’s “biological, affective,
cognitive, and behavioral status, and subsystems of the environment, particularly the primary and secondary groups, culture, society, and the physical environment” (p.17) and how they impact their new structural, developmental, and functioning social ecological perspectives.

Germain and Bloom’s suggestion that the person and environment configurations are based upon personal structures, developments, and functioning within the social and environmental—along with the aforementioned assumptions—can be applied easily to the remedial education classroom. As noted earlier, remedial education students face tremendous barriers, including day-to-day poverty issues, single parenthood, unemployment, low literacy levels, and even lower college completion rates.

**Theoretical Formulations and Measures**

**Classroom Environment Scale.** In 1980, Moos created the Classroom Environment Scale (CES), which “grew out of a comprehensive program of research involving perceptual measures of a variety of human environments” (Fraser, 1998). It was initially established to study the psychosocial environment of the secondary school classroom; however, Moos “envisioned the classroom climate to consist of the teacher’s behavior, interactions between the teacher and the students, and interactions among the students” (Bartholomay, 1996, p. 34). This instrument was intended to diagnose programs and/or identify problematic areas of the actual and preferred learning environments.

The final publicized version of the CES consisted of nine scales with 10 items formatted in a true-false response scale.
Adult Classroom Environment Scale. The Adult Classroom Environment Scale (ACES) was created by Darkenwald and Valentine (1986) in collaboration with nine adult education doctoral students to measure the social environment of adult education classrooms. The ACES was developed using two forms: ideal and real. “The ideal form encourages adult learners to envision the environment in which they would prefer to learn while the real seeks to ascertain the characteristics of adult learners’ current learning environment” (Thomas, 2004, p. 26). This instrument originally consisted of 159 items but was later reduced to 89, and then again to 49, all comprising seven dimensions. It utilizes existing environmental instruments, along with interviews, to guide the development of the survey. The creation of ACES was revolutionary because earlier instruments did not focus on adult populations but offered a framework for potential development (Darkenwald & Valentine, 1986).

College Classroom Environment Scale. The College Classroom Environment Scale (CCES) measures the social climate of a college classroom. It comprises six scales: (a) cathectic learning climate, (b) professorial concern, (c) inimical ambiance, (d) academic rigor, (e) affiliation, and (f) structure. It was created by Winston et al. (1994) in order to “assess student perceptions of the environment regarding different instructional strategies and their effects on the learning climate” (Sethna, 2010, p. 28) and to help instructors better understand student perceptions and improve instructional techniques (Winston et al., 1994).

The CCES was developed by teachers and students “identifying and writing items describing [their] experiences in collegiate classes” (Sethna, 2010, p. 28). This produced 143 items which were administered in survey form to 47 classes at two universities, one
large and one small. In order to test for reliability, coefficient alpha and test-retest procedures were performed in addition to internal consistency measures (Winston et al., 1994). Finally, validity was ensured by comparing the CCES to four existing instruments (Winston et al., 1994).

**Identification with Academics**

The concept of identification is unique because it is “rooted in the symbolic interactionist perspective on self-esteem” (Osborne & Walker, 2006, p. 564). The study of self, from William James (1890/1981), Cooley (1902), Mead (1934), to present, formulates the symbolic interactionist view of self as:

1. People receive feedback from their environment;
2. this feedback, if attended to, is perceived and interpreted;
3. if this feedback is deemed accurate or valid if it is incorporated into the self-concept; and
4. if that domain is central to the self-concept (i.e., an individual is identified with that domain), then the changes in the self-concept will affect an individual’s self-esteem. (564)

As indicated by this model, Osborne & Walker developed the argument that identification with academics should be directly linked to the motivation to achieve and posits academics as a source of self-esteem. “Thus, students who identify with academics should be more motivated to succeed and persist longer in the face of failure because of their self-esteem is more strongly influenced by academic performance” (Osborne, 1997b, p. 557).

As briefly mentioned on page 18, Osborne (1997b) defines identification with academics as “the extent to which one’s self-evaluation in a particular area (academics) affects one’s overall self-evaluation (global self-esteem)” (pg. 59). Osborne asserts the
more closely a student identifies with academics, the more motivated a student should be
to succeed due to the impact academic performance has on self-esteem. Identification
with academics is a necessary condition for learning in the academic environment
(Newmann, 1981). Research shows a lack of identification with academics can influence
a range of behavioral problems, such as, expulsions, truancy, and increased retention and
attrition rates (Gold & Mann, 1984; Reid, 1981; Elliot & Voss, 1974). Therefore, there is
sufficient literature which supports the theoretical and empirical reasoning that suggests
“identification with academics to be predictive of academic success in community
college students” (Osborne, 1997, p. 60).

As more accountability is placed upon educational institutions and resources are
acquired to combat increasing attrition rates, the concern for the education of students
who are least likely to succeed in school is ever-important. These students are often
referred or labeled as at-risk, reluctant, underprepared, or disadvantaged, come from
disproportionately low socio-economic families and/or are minorities. According to
Steele (1997), substantial evidence exists which shows students from disadvantaged
minority groups, as compared to their White and Asian American peers, achieve poorer
outcomes at entry level. Osborne and Rausch (2001) further theorize that poorer
performances among minority groups are attributed to the lack of identification with
academics. Therefore, the concept of identification with academics has emerged as a
contributing factor to the racial achievement gap (Osborne, 1999).

Davis (2006) contends “part of the crisis in Black American’s education stems
from the power of stigma and racial vulnerability to undercut identification with
schooling, either before it happens of after it has blossomed (p. 69). Osborne (1999)
presents factors which prevent minorities from viewing themselves as scholars. He contends that students who fail to achieve their full academic potential, due to social, psychological, and cultural barriers, might be a contributing and causal factor to the underachievement of African-American students, particularly males. The prevention and discouragement from incorporating school and education into their self-view suggests that African-American males, have lower levels of identification with academics than other students (Osborne, 1999).

A study to assess whether other disadvantaged minority groups, such as Hispanics, experienced disidentification revealed there was no sufficient negative or universal group stereotype concerning Hispanics and academic performance as evidenced in African-Americans. Osborne (1999) hypothesized that Hispanics potentially dealt with pressures that impact academic performance differently than those of their minority counterparts. His study concluded that no other group, except African-American males, appeared to experience serious and significant disidentification with academics. An analysis of Osborne’s study indicates ‘the majority of community college students who will experience adverse academic outcomes will begin their college careers less identified with academics than their more successful peers” (Davis, 2006, p. 72). At the conclusion of Osborne’s initial analysis, he provides numerous suggestions as to how to increase community college outcomes. One of his suggestions was to provide targeted academic interventions and resources to those students most at-risk of experiencing disidentification with academics.
A systematic review of four studies involving the Classroom Dynamics Questionnaire (conducted between 2003 and 2010) provides a precise estimate as to how the implementation of the CDQ will impact future research. This meta-analysis (see the summary in Table 1) aims to identify the presence of heterogeneity among previous studies and to explore the stamina of the main findings generated through sensitivity analysis.

Table 1

Summary of the Empirical Studies

<table>
<thead>
<tr>
<th>Author</th>
<th>Approach</th>
<th>Sample</th>
<th>Key findings</th>
<th>Implications for Future Studies</th>
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<tbody>
<tr>
<td>Oliva (2003)</td>
<td>• Birzer (1999)</td>
<td>362 certified law enforcement officers</td>
<td>• No statistically significant difference between the two dimensions measuring teacher-student (respect and confidence) or between student-student dynamics (cohesiveness and voice).</td>
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<td></td>
<td>• Group Dynamics</td>
<td></td>
<td>• No significance between gender and the four real subscales (teacher respect, teacher confidence, learner cohesiveness, learner voice).</td>
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<tr>
<td></td>
<td>• Classroom Dynamics</td>
<td></td>
<td>• Uniformly high rates for all four subscale items. The teacher-student dimensions were considerably higher than student-student.</td>
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<td></td>
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<td>• Minimal explanatory power observed in the ideal measures.</td>
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<td></td>
<td></td>
<td></td>
<td>• No mathematical correlations between mean calculations of real and ideal versions.</td>
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<td></td>
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<td></td>
<td>• Incorporation of teacher’s demographic background.</td>
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<td></td>
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<td></td>
<td>• The use of a larger, non-convenient sample.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Employ more background variables.</td>
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<td></td>
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<td>• Future studies should include both Ideal and Real versions.</td>
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</tr>
<tr>
<td>Author</td>
<td>Approach</td>
<td>Sample</td>
<td>Key findings</td>
<td>Implications for Future Studies</td>
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</table>
| Thomas (2004)  | ▪ Critical race theory                           | 302 graduate students enrolled at 1 Predominantly White Institution (PWI) and 3 Historically Black Colleges & Universities (HBCUs). | ▪ Computing mean item mean values found respondents’ race did not impact perceived classroom dynamics.  
▪ No statistically significant relationship between Black racial percentages in the classroom and the four dimension variables.  
▪ No statistically significant difference between subscale means and teacher-student race. | ▪ Critical race studies need methodological considerations when using quantitative methods.  
▪ Select population and environment outside of higher-education. |
▪ Moos (1979)  
▪ Group dynamics  
▪ Classroom dynamics | 645 students enrolled in 34 developmental English, reading, and math classes. | ▪ Uniformly high ratings for all four dimensions.  
▪ Identification with academics was the strongest single predictor  
▪ Four significant relationships were determined through an analysis of multivariate relationships.  
▪ No statistically significant relationship between the four measures and race, gender, income, or first-generation student status.  
▪ Dynamic social-psychological variables are better predictors than static variables.  
▪ “Ceiling effect” occurred in the dependent variable. | ▪ Employ a more representative sample.  
▪ Wider demographic variables.  
▪ Teacher characteristics should be measured.  
▪ CDQ should be redesigned due to sensitivity issues. |
| Sethna (2010)   | ▪ Social dynamics  
▪ Social climate  
▪ Classroom dynamics | 1,589 online adult learners at 27 two-year technical colleges | ▪ Revised version of the CDQ is found highly reliable and valid.  
▪ Race had no statistical significance.  
▪ Age (predictor variable) achieved significance within 3 of the 4 dimensions (teacher respect, learner cohesion, and learner voice)  
▪ Class size nor course topic were statistically significant.  
▪ Sensitivity of instrument was improved. | ▪ Gender contributed to the variance of learner cohesion.  
▪ Interpersonal dynamics do occur within online courses.  
▪ Student perceptions can be used to improve online courses. |
Oliva (2003)

Oliva’s (2003) study centered on classroom environmental preferences of students enrolled in law enforcement education classes. Oliva felt this had the potential to limit student satisfaction and achievement and could therefore result in inadequate training. She sought to identify classroom environmental preferences by examining actual and preferred interpersonal dynamics of law enforcement classrooms. Figure 2 illustrates the explanatory model Oliva used for her study.

Figure 2. Oliva’s (2003) explanatory model.

Oliva’s (2003) convenience sample consisted of 362 state-certified law enforcement officers attending a state training program. She collected data from nine classrooms at this training using the then-new Classroom Dynamics Questionnaire (Valentine, Oliva, & Thomas, 2002). This self-completion, forced-choice survey instrument was designed to measure interpersonal classroom relationships between teachers and students and students and their peers. It measures four dimensions of classroom interpersonal dynamics: teacher respect for learners, confidence in teacher’s
ability, learner cohesion, and learner voice. Two versions of the CDQ were developed, a real (R) and ideal (I) version. The real version measures students’ actual experience of classroom dynamics in relation to the four dimensions, while the ideal version measures students’ preferred classroom dynamics in relation to the four dimensions.

Oliva (2003) used a simple correlation analysis to calculate bivariate relationships between her predictor variables (personal characteristics and classroom size) and outcome variables (subscale measures). Using a multiple regression analysis, she calculated multivariate relationships between these predictors and outcome variables. Her analyses revealed that students rated all subscale items highly—that is, actual classroom perceptions and students’ classroom preferences. Similarities between ratings for the four dimensions on both the real and ideal versions arose as well; students rated items pertaining to teacher-student relationships (respect and confidence) higher than they rated items pertaining to student-student relationships (cohesiveness and voice).

Oliva’s (2003) study did encounter a limitation in the area of data reporting. The predictor variables used within the study demonstrated limited power to explain both the actual and preferred dimensions. This had practical implications for adult educators, who in general seem to better understand the classroom experiences valued by adult learners. However, Oliva’s findings do provide a foundation for future research examining interpersonal relationships, not only within law enforcement classes but within all adult learning environments.

Thomas (2004)

Thomas’s (2004) study sought to determine the extent to which race impacts perceived classroom dynamics of African-American and Caucasian-American adult
learners in graduate classrooms. Her study sample consisted of 302 adult learners enrolled in graduate classes at one predominantly white institution (PWI) and three historically black colleges and universities (HBCUs). Her study sample was concentrated within a state in the southeastern U.S.

Thomas (2004) collected data from 27 graduate classrooms using the CDQ. She employed a statistical analysis to determine the explanatory power of three variables: the student’s race, the racial ratio of a class, and the race of the teacher relative to the race of the student on perceived classroom dynamics. The analysis revealed that both Black and White students rated items within the four dimensions of classroom dynamics highly and that there was no statistically significant difference on the basis of race in any of the subscale measures. Similar to Oliva’s (2003) study, the quantitative measures in Thomas’s research had limited power in explaining race within the context of education, especially at HBCUs.

Thomas’s (2004) findings provided a practical contribution to the field by considering, together, the multifaceted nature of race and the measurement of interpersonal dynamics. Her findings provided a foundational approach to examining the impact of race on classroom dynamics.

**Davis (2006)**

Davis’s (2006) study sought to understand how developmental studies students perceive classroom dynamics and why students perceive classroom environments differently. For her research, she incorporated three survey instruments into one—the CDQ (Valentine, Oliva, & Thomas, 2002), the Educational Experience Scale (Kim, 1993), and the Identification with Academics Scale (Osborne, 1997)—in order to
measure students’ perceptions of classroom dynamics in a developmental studies environment. Her variables included demographics and social characteristics, past experiences of education, and identification with academics. Figure 3 depicts a simple version of the model Davis used for her study.

![Figure 3. Davis’s (2006) explanatory model.](image)

As in the previous studies, Davis (2006) included bivariate and multiple regression analyses to discover the best explanation for observed variances within the four dimensions of classroom dynamics (i.e., teacher respect for students, student confidence in the teacher’s ability, learner voice, and learner cohesion). Similar to the aforementioned studies, the analyses revealed demographic variables had no predictive power in classroom perceptions. However, the three other variables—past educational experience, identification with academics, and educational attainment—were significant predictors for the four dimensions of classroom dynamics.

A review of Davis’s (2006) distribution scores for the four CDQ variables revealed a “ceiling effect,” in which the majority of participants rated all four dimensions
highly. In light of this finding, Sethna (2010) revised the CDQ’s scale, producing a new instrument, the Classroom Dynamics Questionnaire for Online Classes.

**Sethna (2010)**

The purpose of Sethna’s (2010) study was to determine the influence of age, gender, race, number of students in an online class, and course type on perceptions of classroom dynamics by adult students enrolled in online courses. He examined three student characteristics and two online classroom characteristics and their effect on students’ perceptions of classroom dynamics. Figure 4 illustrates an operational model of Sethna’s study.

![Figure 4. Sethna’s (2010) operational model.](image)

Sethna’s (2010) sample consisted of 1,589 adult students taking an online course at one of the 27 two-year technical colleges in Georgia. As mentioned previously, in an effort to counteract Davis’s (2006) “ceiling effect,” Sethna employed a new version of the survey instrument, the Classroom Dynamics Question for Online Classes, which was adapted from the existing CDQ. It included 27 questions and was pilot tested in order to
ensure validity and reliability. The data were analyzed in order to determine significant predictors of student perceptions of interpersonal classroom dynamics.

Sethna (2010) conducted a bivariate analysis in order to determine the extent of the observed variances of the four dimensions of classroom dynamics and found that demographic variables (age, gender, race), number of students enrolled in the online course, and course type had no predictive power in determining students’ classroom perceptions in the online environment.

**Instructional Delivery Methods**

**Face-to-Face Delivery Method**

The traditional face-to-face instructional delivery method, sometimes referred to as lecture-based instruction, has been the predominant delivery method since the creation of formal schooling. As the name implies, instruction is delivered entirely within the classroom, through face-to-face interaction between the student and instructor. In some cases, technology is used to supplement face-to-face interaction; however, instruction is delivered primarily via the instructor. Students are directed, or lectured, by the instructor, and assignments and coursework are given onsite. All assessments are given and taken within a teacher’s presence; however, this does not guarantee a strong or effective teacher-student relationship. It only guarantees face time.

**Remedial Education in Face-to-Face Settings**

There are two major components of successful remedial education courses within face-to-face settings: contextual and program components, and course-level components (Jacob & Lefgren, 2004; Kozeracki, 2002; McCabe & Day, 2008; Young, 2002). Comprehensive developmental programming combines andragogy learning theories and
individual growth with cognitive and affective development. McCabe and Day (1998) concluded that “successful development programmes offer a wide variety of comprehensive instructional support services, including assessment, placement, orientation, tutoring, advising, counseling, peer support, early alert programmes, study skills training and support groups” (p. 21).

One of the main intentions of Allen and Seaman’s (2013) research was to determine whether online courses were comparable to face-to-face courses, specifically in relation to student learning outcomes. They surveyed a comprehensive sample of active leaders in postsecondary institutions in 16 southern states. They found evidence of increased favorability of online courses among academic and institutional leaders and a 20% increase in the number of academic leaders who rated online education as the same as or superior to face-to-face instruction; they also discovered that only 23% of academic leaders believed the learning outcomes of online courses are inferior to face-to-face instruction. As these finding suggest, fewer academic leaders are questioning the instructional or accreditation-related value of online courses; rather, economic and logistic issues are now the focus. The ideologies of the traditional face-to-face delivery method are less and less representative.

**Distance Education**

As more sophisticated technological discoveries allow for the expansion of distance-education programs, desire for enrollment in strictly online coursework is at an all-time high (Weinstein, 1997). Indeed, one of the fastest growing instructional delivery methods in higher education is distance education, sometimes referred to as distance learning. Moore and Kearsley (2005) defined distance education as “planned learning that
normally occurs in a different place from teaching, requiring special course design and instruction techniques, communication through various technologies, and special organization and administration arrangements” (p. 2).

Distance education is not a new concept. Sherry (1995) pinpointed its origin as a European correspondence course over a century ago. Initially developed in the late 19th century, distance education was designed to allow for educational correspondence between students and teachers through parcel post (Moore & Kearsley, 2005). This process allowed students who could not attend classes on campus the opportunity to advance their education via an alternative form of instruction known as “home study.”

During the early 1990s, technology began to have a major impact on distance education; correspondence programs began to include video and/or audio-based distance-learning programs, which eventually led to the web-based and Internet-based programs common today (Parker, 1999; Simonson et al., 1999).

Distance education is appealing to academic institutions for a number of reasons. It is an incredibly lucrative investment for schools. It enhances access to college coursework for certain demographics that would normally face obstacles attending traditional classes (e.g., single parents, full-time workers, out-of-state students). Distance education requires much less financial overhead for schools; the fewer students on campus, the less power and water usage, and less damage to physical infrastructure. This model is so successful that many colleges and universities offer classes strictly through distance education ventures.
Online Courses

With the birth of new and ever-expanding technologies, a new concept within distance education emerged: online learning. Online learning gives nontraditional students the opportunity to attend classes outside of the traditional lecture-based model. Typically, an online course includes no face-to-face meetings; at least 80% of the instructional curriculum is delivered online (Allen & Seaman, 2007, 2008). Enrollment in online courses increased from 11.7% in 2003 to an astounding 32% in 2011 (Sloan Consortium, 2012); during the fall 2011 semester, an estimated 6.7 million students took at least one online course. Not surprisingly, many postsecondary institutions believe online coursework to be a critical and viable long-term strategy for increased enrollment.

The fundamental principles of online courses, especially important when considering classroom dynamics, involve the following three characteristics: “(a) interaction between the teacher and learner, (b) flexibility and responsiveness in course design, and (c) learner autonomy where learners manage their own learning and construct their own knowledge” (Robinson, 2004, p. 6). The alignment of online courses and classroom dynamics is undeniably important to student and institutional success; however, few of such successes have yet to be observed. Phipps and Merisotis (1999) noted that original research on the effectiveness of online coursework is lacking. However, they did uncover a few research publications focusing on students’ and teachers’ perceptions of online courses. These studies found that students often performed as well as or better than their counterparts when instruction was delivered via a more traditional method like face-to-face instruction; generally, test scores and grades measured far better. However, Moore and Thompson (1990) questioned the validity of
previous research on the effectiveness of online classes and distance education due to incomparable populations and methodological techniques, and weak designs. These legitimate question about the outcomes of previous research, along with the vast advancements made in educational technologies, beg for further research on this topic.

**Online Learner Characteristics**

Adult learners’ life experiences help them transition toward greater autonomy. Adult learners are generally more self-directed and goal-oriented but also more unsure and apprehensive about reentering postsecondary education. This is especially true for adults who experienced tumult during their primary education. These insecurities are not just reserved for face-to-face classroom instruction. Adult learners enrolled in online coursework experience the same fears; however, they find ways to cope with differentiated learning styles through greater instructor contact, use of provided support services, and enhanced development of technological skills (Diaz, 2002; Dubois, 1996).

In 2006, NCES sponsored a study through the National Postsecondary Student Aid Study (NPSAS) which looked at adults over the age of 30 and their engagement in distance or web-based learning. They found that the majority of adults taking online coursework in postsecondary education consisted of graduate or post-graduate students (NCES, 2007). However, the study failed to yield any definitive results about students in two-year colleges or in technical programs. Even so, the study did provide a more comprehensive look at the characteristics of the online learner.

Participation in online or distance-education courses was more common among undergraduates enrolled in a two-year public college than a four-year university (NCES, 2006). Older students and those students with a spouse or dependents, and employed full-
time, were more likely to enroll in distance-education course than their counterparts. Additionally, students with mobility disabilities enrolled in distance-education courses more frequently than students without disabilities (NCES, 2008). These findings are significant since the characteristics of online learners closely mimic those of the remedial education demographic.

**Quality Concerns**

With the addition of new educational methodologies, distance education and online courses have received a variety of analyses. At one end of the spectrum are the researchers, practitioners, and advocates who praise the flexibility and accessibility of online courses. Others in the middle believe that the quality of online classes is lacking compared to face-to-face instruction (Allen & Seaman, 2003). Then there are researchers such as Perley and Tanguay (1999) who “doubt strongly that a totally virtual institution could demonstrate that it provides an education equivalent to that offered at traditional colleges and universities” (p. B4). However, with a growing number of students desiring to take online classes, and with the growth of digital society, the demand for and access to online classes will increase. Moreover, as today’s two-year technical colleges evolve into more comprehensive institutions of higher learning, they will become more academically diverse and inclusive. Therefore, a pedagogical framework for academically deficient students is now more necessary than ever.

**The Effect(s) of Delivery Method**

This research study focused on two specific instructional delivery methods: face-to-face and online. Much of the motivation and determination in doing a study of this nature is contingent upon understanding the vast and multifaceted literature on
instructional delivery methods. As the literature review evidences, this study comprised more than simply a comparison of delivery methods; it explored students’ perceptions of classroom dynamics via different delivery methods, instructional practices (pedagogy), and the impact delivery methods had in remedial education coursework. These topics contributed to this study’s theoretical framework as well as the everyday aspects of remedial education.

In reviewing the literature, I found a multitude of articles written by a professionally diverse group of authors; however, few of the articles were written by the same author over an extended period of time. While there is an established body of writings, none is by the same author covering the pedagogical logistics of instructional delivery methods. Not until I discovered Patricia Scott’s writings did I get a full view of the impact and linear scope of instructional delivery.

Scott wrote four published papers between 1995 and 2003, all related to instructional delivery methods. Her doctoral dissertation at the University of Wisconsin-Madison consisted of a comparative analysis of students’ experiences in intensive and traditional courses (Scott, 1993). One compelling aspect of her research—relevant to the revision of my instrumentation to include more sensitivity—was her methodological approach to ensuring accurate representation of student and instructor perspectives. She included a variety of methods to enhance the study’s validity and reliability (which she coined “trustworthiness”): multiple cases and cross-case comparisons, prolonged engagement and persistent observation, multiple data methods, negative case analysis, and systematized reflectivity. Nevertheless, her study had one major limitation:
The multi-case study design did not eliminate all potential confounding variables. For example, I was unable to control for student entry characteristics, class size, or students’ course loads. Moreover, while the course material and instructional approaches were similar in both sets of classes, they were not identical. Thus, many of the findings must be considered in light of other plausible, competing explanations. On the other hand, although these factors increased “extraneous variability,” the constant comparative method allowed me to systematically examine and analyze the data in light of these variables. (Scott, 2013, p. 13)

This was particularly interesting to my research because at the outset of my study I planned to measure student and course characteristics as well as other variables that cause differences in students’ perceptions of classroom dynamics.

In Scott’s 2003 article, she funneled her previous research into two broad instructional delivery categories: instructor characteristics and course organization. She identified eight characteristics of an effective instructor: (1) willingness to learn from students, (2) experience and good communication, (3) enthusiasm, (4) knowledge, (5) student orientation, (6) active and open classroom interactions and discussions, (7) experiential and applied learning, and (8) teaching methods. These characteristics are not unique; however, when they are applied to course organization and delivery method, they can impact perceptions of the student-teacher relationship.

Course characteristics play a significant role in the perception of classroom dynamics by remedial education students. A course’s internal programs and practices, such as class size, subject, and sequence of courses, can directly impact the performance of a remedial education student. Arreola (1984) examined course characteristics
regarding three broad dimensions: content expertise, instructional delivery skills, and instructional design skills. Lowman (1984) further specified interpersonal rapport, which includes students’ perceptions of everything from a teacher’s effectiveness, course design, and course delivery method, is one of the stronger factors in determining student success. Within the dimensions of remedial education, appropriate course characteristics can permit a holistic approach to programming for at-risk students, which enables the instructor and institution to address a broad range of student academic needs.

According to Achilles et al. (2002), “class size involves organizing students for the delivery of instruction, whereas pupil-teacher ratio is an administrative statistic which helps account for distribution of resources” (p. 24). This resource distribution applies to monetary resources and/or relational resources (i.e., student-student, student-teacher, and teacher-administration relationships). In Achilles and Sharp’s (1998) earlier study, they found that these resources, or relationships, were more favorable and influential when distributed in smaller classes and, even more important, within schools and districts where specialized educational services, such as remedial education, were being offered. This was further supported by Biddle and Berliner’s (2002) two basic theories focusing on the teacher—specifically the special relationship formed through interactions between student and teacher—and on the classroom environment and student conduct.

Biddle and Berliner’s (2002) first theory directly links classroom size to teachers’ perceived satisfaction and is vital to the academic success of students. When teachers have more one-on-one time with students, they feel better equipped to help students cope with new social environments and interact positively with others. Specific to remedial education, teachers are able to teach more effectively to both academically struggling and
behaviorally challenging students, who need additional attention in order to succeed academically. Underpinning this theory is the belief that if students learn positive coping and interaction skills, and are academically successfully within the classroom, their perceptions, attitudes, and beliefs toward education will be increasingly more positive. Smith et al. (2003) further reported on teachers’ perceptions of small class sizes.

Teachers desire the opportunity to better handle teaching materials, classroom organization, and creative instruction, which is more manageable in a small classroom setting. When working with the remedial education population, small class sizes are ideal because they allow for the enhancement and enrichment of educational material and activities for academically deficient students.

The second theory posed by Biddle and Berliner (2002) suggests that with fewer students, teachers are able to provide individualized instruction. Smaller class sizes enable students to build a greater sense of acceptance and belonging under the watchful eye of the instructor. Not only do they spend more time participating in the learning and instruction process, but fewer behavioral difficulties arise. This has a profound effect on remedial education students because they primarily need individualized instruction. One-on-one teacher influence supports not only remedial education, but also the instructional design of the program, which is intended to decrease student deficiencies in reading, writing, and math, and provide the necessary individualized basic skills instruction mandatory for academic success.

**Instructional Teacher Practices in Remedial Education**

Teacher connectedness, availability, and instructional methodology are classified as identifying factors which influence instructional practices. Many instructional
researchers, across disciplines, encourage a methodology conducive to teacher connectedness and availability because it allows students to become increasingly more aware of their academic responsibilities, develops organizational skills, fosters a guided productivity regimen, and builds and sustains important social, academic, and behavioral relationships within the student’s educational psyche. As previously mentioned, remedial education students typically need additional time, attention, and relationships in order to succeed academically. Therefore, the instructional practices of the teacher are crucial within the remedial education classroom because they not only provide a foundation for future postsecondary endeavors but help support, sustain, and enrich the academic lives of the student.

In his well-known *Bowling Alone: The Collapse and Revival of American Community*, Robert Putnam (2000) detailed the increasing disconnect felt within families, among friends and neighbors, and even within fundamental democratic structures, and how the problem is collapsing the American community. As Putnam argued, individuals seem no longer concerned with the greater good of other’s lives; yet, connectedness is a strong indicator of the well-being of social capital. Higher education has been increasingly criticized for its lack of connectedness. Eyler and Giles (1999) discussed the absence of connectedness in relation to students:

Lack of connectedness [has] resulted in the compartmentalization of knowledge by discipline, preventing students from experiencing relationships among various modes of knowledge; subject matter [has been] walled off behind disciplinary borders and not applied in any integrated way in academic study or to social issues. Students also experience a lack of connection between classroom learning
and their personal lives and between classroom learning and public issues and involvement in the wider world. (p. 13)

With the national dialogue about disconnectedness on the rise, a framework for faculty, staff, students, and community members must be developed. In order to begin making connections, support for collaborative initiatives must take place—for example, creating trusting atmospheres, participating in outside activities, fostering strong cultural support and engagement, offering service-learning activities, etc. Teachers and institutions must begin deepening connections that “make a difference in people’s lives and, at the same time, generate new insights, discoveries, ways of knowing and acting” (Rosaen, Foster-Fishman, & Fear, 2002).

The influence of teacher support is crucial within the developmental context of remedial education. Teacher availability exists within various student-teacher relationships—confidants, mentors, club sponsors, or friends—and can be found within curricular connections such as encouraging and facilitating classroom discussions on different student communities (e.g., cultural, race, religion, etc.), interviewing students, and visiting students’ communities. These relationships encourage trust and openness in the classroom—particularly important within remedial education classes because of their often dense curricular demands and emphasis on standardized testing.

**Instructional Pacing in Remedial Education**

Individual variations are common within educational structures. However, the institution upon which my study focused addresses such variation by providing a detailed scope and sequence to all remedial education instructors. This scope and sequence comprises a detailed learning plan which includes learning objectives, state remedial
curriculum standards, and student expectations in the order in which all objectives should be applied and met. “Together a scope and sequence of learning bring order to the delivery of content, supporting the maximizing of student learning and offering sustained opportunities for learning. Without a considered scope and sequence there is the risk of ad hoc content delivery and the missing of significant learning” (ACT, 2009). This is done in order to provide consistency across the curriculum, help control instructional pacing, and to bring uniformity to the remedial education classroom. However, this does not completely negate the fact that instructors will do as they please when the classroom doors are closed.

**Online vs. Face-to-Face Instruction: An Empirical Analysis**

A systematic review of eight studies involving the examination and analysis of online vs. face-to-face instruction (conducted between 2000 and 2014) provides insight into the potential findings of the current research study. Each study reviewed contains elements of the current research study and was influential in guiding the research questions. This meta-analysis (see the summary in Table 2) proves a brief but comprehensive summary of previous research studies related to the board purpose of this study: instructional delivery method.
### Table 2

**Summary of Empirical Studies: Online vs. Face-to-Face Instruction**

<table>
<thead>
<tr>
<th>Author</th>
<th>Approach</th>
<th>Sample</th>
<th>Key Findings</th>
<th>Implications for Future Studies</th>
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</table>
| Al-Hassan (2009)                | Meta-analysis             | 51 study effects, 44 of which were drawn from research with older learners. | • Students in online learning conditions performed better than those receiving face-to-face instruction provided variable factors remained constant.  
  • Instruction combining online and face-to-face elements had a larger advantage relative to purely face-to-face instruction than did purely online instruction.  
  • Studies in which learners in online condition spent more time on task than students in the face-to-face condition found a greater benefit for online learning.  
  • Most of the variations in the way in which different studies implemented online learning did not affect student learning outcomes significantly. | • The effectiveness of online learning approaches appears quite broad across different content and learner types.  
  • Effect size were leader for studies in which online and face-to-face conditions varied in terms of curriculum materials and aspects of instruction approaches.  
  • Providing guidance for learning for groups of students appears less successful than does using such mechanisms with individual learners.  
  • Blended and purely online learning conditions resulted in similar student outcomes (comparable across the two conditions). |
| Driscoll, Jicha, Hun, Tichavsky, Thompson (2012) | Quasi-Experimental Design | 368 students enrolled in three online and three F2F SOCI 1101            | • Results support argument that online education can be an equally effective teaching format when the online course is designed using the appropriate pedagogy.  
  • No statistical difference in student satisfaction between online and F2F courses was found.  
  • Students in F2F sections generally had higher GPA’s and were enrolled in more credit hours than their online counterparts.  
  • No significant difference between online and F2F student satisfaction does not vary between instructional delivery.  
  • Course design is a sufficient indicator and contributor to a positive learning environment.  
  • The impact of teacher-student interactions.                                                                                           |
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<th>Sample</th>
<th>Key Findings</th>
<th>Implications for Future Studies</th>
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</table>
| Johnson, Aragon, Shaik, Palma-Rivas (2000) | • Exploratory empirical study  | • Graduate level course; 19 students F2F  
• Graduate level course; 19 students online | • Student satisfaction indicators, instructor quality, and course quality were rated positively by both sections (online & F2F).  
• Students enrolled in the F2F course more favorably rated student-to-student interactions.  
• A lower rating by online students in student-teacher interactions than that of their F2F counterparts.  
• Students in the F2F course formats rated the instructor relatively higher for instructor support than the online students.  
• Online students rated the departmental support significantly higher than did the students enrolled in the F2F course. | • Communication, sharing learning experiences, and perceptions of a sense of community for students enrolled in F2F courses.  
• Relatively small sample size makes it difficult to interpret the two groups.  
• CISS instrument is still in early development. Needs more vetting. |
| Wuensch, Aziz, Ozan, Kishore, Tabrizi (2008) | • Quantitative: Survey Instrument  | • 4,789 students representing 46 different universities and colleges in 26 states. | • Students rated online classes as greatly superior to F2F in terms of convenience and self-pacing.  
• Online classes rated inferior to those of F2F classes  
• F2F classes rated as significantly more organized and pleasant than online courses.  
• F2F classes rated higher than online classes in facilitating communication with other students and  
• In terms of pedagogical effectiveness, conclude the technological characteristics of online classes which best contributes to the increase in respondents perceptions of online classroom attitudes.  
• The inclusion of social and spatial awareness (classroom environment), communication, and interaction with peers in an online class. |
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<tr>
<th>Author</th>
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<th>Sample</th>
<th>Key Findings</th>
<th>Implications for Future Studies</th>
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<tbody>
<tr>
<td>Neuhauser (2002)</td>
<td>Quantitative analysis</td>
<td>Study compared two sections of the same course – one section was online and asynchronous; the other was F2F.</td>
<td>• Ninety-six percent of online students found the course to be as effective as or more effective than the F2F.</td>
<td>• Instructor/student congruence</td>
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<td></td>
<td>Boettcher (1999)</td>
<td></td>
<td>• There is no significant difference between the effectiveness of learning activities as perceived by the two groups.</td>
<td>• Significance of initial orientation for both F2F and online</td>
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<td></td>
<td></td>
<td></td>
<td>• There is no significant difference between learning preferences/styles and success in the course for either group.</td>
<td>• Teacher characteristics should be measured.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• There is no significant difference between the descriptors used by the students of each group to describe the course</td>
<td>• Attrition rates for both groups needs to be reviewed</td>
</tr>
<tr>
<td>Summers, Waigandt,</td>
<td>Quantitative methodology</td>
<td>38 undergraduate students in an introductory statistics course at a large Midwestern university</td>
<td>• There were no significant differences between online and F2F students in their satisfaction with their instructor.</td>
<td>• Fostering collaboration among peers in an online course</td>
</tr>
<tr>
<td>Whittaker (2005)</td>
<td>Russell (1999)</td>
<td></td>
<td>• Online students were not satisfied with instructor’s enthusiasm for the teaching material.</td>
<td>• Teacher’s interpersonal characteristics.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• There was a significant difference in satisfaction with instructor’s openness.</td>
<td>• Quality of research questions needs to be revisited.</td>
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<td></td>
<td></td>
<td></td>
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<td>• Clarity of evaluation and grading, and</td>
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</table>
For two decades, the clinical and pedagogical differences in online and face-to-face education have experienced a rise in interest among researchers. Traditionally, these studies have focused on academic performance measurements to gauge the differences between online and face-to-face learning, as well as, to assess student satisfaction with the overall course. As online classes continue to maintain their position in postsecondary education and as the demand for course accountability grows, researchers have begun to expand their interests to include topics which cover the intrapersonal and interpersonal
dynamics which are occurring in both instructional delivery methods. The following literature will review some of the most current work.

Al-Hassan’s (2009) study compared and contrasted the (a) effectives of e-learning to traditional classroom teaching, (b) measured student learning performance, and (c) measured the effects identified subjected to review of studies. Providing the variable factors remained constant, Al-Hassan concluded, on average, students in online learning environments out performed those receiving face-to-face instruction. Specifically, he found “the difference between student outcomes for online and face-to-face classes…was larger in those studies contrasting conditions that blended elements of online and face-to-face instruction with conditions taught entirely face-to-face (p. 1). Therefore, the presence of the online component had the most positive impact on student’s learning environments.

The literature review and meta-analysis employed by Al-Hassan (2009) differed from those of recent students on distance learning. He exclusively used studies with controlled quasi-experimental designs and examined effects only for objectives measuring student learning (e.g., discarding student or teacher perceptions of learning, course quality, student effect, etc.). An unexpected find of Al-Hassan’s study was that he did not find a significant effect by learning type, when learner’s age groups are considered separately, the mean effect size is significantly more positive for older learners.

Another quasi-experimental design study by Driscoll et al., (2012) assessed the differences in student performance and satisfaction in online and face-to-face classrooms. The researchers compared student satisfaction and performance on a midterm exam in an
introductory-level Sociology course. They concluded student satisfaction does not significantly differ across the two instructional delivery methods; however, a difference does occur in student performance. Therefore, the results of this study supported the argument that online education can be an equally effective educational format, compared to that of the traditional, face-to-face format, when the online course is designed using appropriate pedagogy. They also suggested previous studies have failed to control an imperative variable which could significantly impact future studies of the effectiveness of online education: student aptitude.

Wuenschk et al., (2008) study was designed to determine which pedagogical characteristics of online learning are more in need of improvement. In order to best capture this data, they sought to evaluate the pedagogical characteristics of completed face-to-face and online courses. Their results indicated that students rated online courses as greatly superior to face-to-face courses in terms of convenience and self-pacing but students also rated online courses as inferior to those of face-to-face, in a number of other characteristics (e.g., course organization, student-instructor communication, better understanding of course content, and “pleasantness” of the class). Survey respondents also indicated they perceived the face-to-face courses to be more rigorous and time-consuming. They concluded the most problematic issue plaguing the existing distance learning system is that they do not effectively consider the wants and needs of the students and instructors.

Nuehauser’s (2002) study investigated the effects of gender, age, learning preferences and styles, media familiarity, effectiveness of tasks, course effectiveness, test grades, and final grades in two sections of the same course; one section was online and
asynchronous and the other face-to-face. Her results revealed no significant difference in test scores, assignments, participation grades, and final grades. However, the online sections averages were slightly higher. There were no significant differences between learning preferences and styles or grades in either section, as well as, in demographic characteristics. Finally, Nuehauser insisted her study showed that equivalent learning activities can be equally effective for online and face-to-face learners.

Johnson et al.’s, (2000) study compared student ratings of instructor and course quality, assessment of course interaction structure and support, and learning outcome measures (e.g., course grades and student self-assessment of ability) in graduate level face-to-face and online courses. Their results revealed that students in face-to-face courses held a slightly more positive perception of their instructors, peer interactions, and overall course format. The highest means of significance was found in instructor support. Face-to-face students rated their course relatively higher in instructor support than their online counterparts. Conversely, online student’s perceptions of departmental support (i.e., dissemination of information through the department, communication between the department and student, and the department’s inquiry of student needs) were rated significantly higher than their face-to-face counterparts. Students in the face-to-face course indicated a more positive perception in all learning environment characteristics than did the online students.

An unexpected finding of Johnson et al., was that both sections scored instructor encouragement at the same level. Further analysis revealed the only difference in instructor encouragement stemmed from the characteristics of the instructor’s feedback. The limitations placed on the perceptions of interactions, between the student and
instructor provides insight into the differing contexts of the two classes. Online students viewed feedback differently than those in face-to-face courses; however, it was still viewed as equally positive.

Summer’s et al. (2005), specifically studied the following: (1) were there any differences in statistics knowledge as measured by student scores on examinations, and (2) were there any differences in student attitudes as measured by course evaluation in an online and face-to-face course? They concluded there was no significant difference in grades between the two contexts; however, students in the online course were significantly less satisfied with the overall course on several dimensions; specifically within instructor variables and course variables. Significant group differences were detected for three of the course-related items: class discussion, quality of questions and problems, and evaluation and grading techniques.

The largest group differences were detected within the instructor related items (instructor variables) and overall course satisfaction (course variables). Online students significantly rated instructor’s explanations, instructor’s enthusiasm, instructor’s openness to students, and instructor’s interest in student learner much lower than the face-to-face students. These findings could be due to numerous factors: online discussion is not in “real time”, students cannot readily experience instructor-led practices, question and answer wait time, etc. Online students were significantly less satisfied with course variables as well. The researchers predict this is most likely due to the fact all discussions, both between student-student and instructor-student, took place within a virtual bulletin board.
The most recent study included in this systematic review of the literature sought to determine a better understanding of how faculty can strengthen their teaching in an online course. Duncan & Young (2014) compared student ratings of instruction in online and face-to-face courses using eight dependent variables: (1) organization and planning, (2) communication, (3) faculty/student interaction, (4) grading, (5) instructional method, (6) course outcomes, (7) student effort, and (8) overall evaluations. Their results were similar to those of Mentzer et al. (2007) and Summers et al. (2005) in that students rated their instructors significantly higher in face-to-face settings on most factors. Specifically, students in face-to-face courses rated their instructors significantly higher in communication, faculty/student interaction, grading, instructional methods, and course outcomes. However, a significant finding of the research suggests that student effort was rated significantly higher for the online courses compared to the face-to-face courses. The researchers assert this is a reflection, typically, of increased workload and the difficulty of working asynchronously in the online environment.

The Role of Online Context

Historically, context has played an important role within all educational frameworks. However, researchers tend to discuss online learning as a single entity, rather than focusing on its situated and contextual nature. This lack of specificity is problematic because it perpetuates the misconception that there is only one type of online learning.

The role of online learning is difficult to navigate due to differences in setting, pedagogy, attitude, and delivery. Lowenthal et al. (2009) maintained that an undifferentiated construct of online learning is problematic for three reasons:
a. It confounds research results related to online learning (Phillips, 2005), which can often be criticized as producing a lower quality of research (Amiel & Reeves, 2008; Bernard et al., 2004; Reeves, 1995; Wray, Lowenthal, Bates, & Stevens, 2008).

b. It confuses practitioners. Much has been said about the continual growth of online courses but relatively little about the online attrition and multifarious difficulties students face. Attrition in online learning is higher than in face-to-face programs (Carr, 2000; Phipps & Merisotis, 1999; Willging & Johnson, 2004), and while retention and persistence continue to be complex issues, overall research on attrition, retention, and persistence in online learning is comparatively new (Shea & Bidjerano, 2008).

c. It influences how faculty and instructional designers create online courses.

“The overall popularity of asynchronous online learning environments coupled with past experience, leads faculty and instructional designers (especially in higher education spaces) to have certain conceptions of online learning.” (Lowenthal et al., 2009, p. 3)

Online learning takes many different forms, all of which must be addressed in order to provide consistency across the contexts. By doing so, a more constant and comprehensive typology of the online learning landscape can emerge; however, if not properly addressed, these differences can lead to continual problems impacting pedagogy, learning, and performance.

This research study examined asynchronous classrooms. Both the online and face-to-face classes utilized an online interactive system known as MyMathLab; all
assignments, lessons, and tests were completed within this software. Using the same learning management system in both sections (i.e., online and face-to-face) provided consistency to the data and congruence in the research.

When comparing instructional delivery methods, variances in pedagogical approaches represent a major dilemma. Miah (2012) insisted that “the best delivery method depends on many variables and relevant parameters, including the language, age, culture or locality of the students, their background and motivation, the subject, the theme, the teacher and learning environment” (p. 145). This study excluded the appropriate variables to determine the most effective and definitive pedagogical approach for online and face-to-face courses. For future research, “the ultimate goal would be to develop systems with varied pedagogical methods where the student can choose between different methods according to the learning strategy best for him/her” (Morrison, 2002, p. 15). Using the variables found within the previously mentioned empirical studies (e.g., teacher characteristics, student characteristics, competencies, satisfaction, etc.) would help to construct an effective, less complex pedagogical framework for comparing instructional delivery methods. However, numerous scholars have indicated that there is no simplistic, one-size-fits-all pedagogical approach to teaching and learning: “It would be exaggeratedly simplistic to believe that there is one technique that is superior to all others or that provides all learning needs equally well and fruitful” (Heinich et al., 2002, p. 121).

In conclusion, this review of the literature identified a significant research gap related to information on the nature of classroom dynamics in the remedial studies
classroom, the role of delivery methods, and the causes of differences in students’ perceptions of classroom dynamics. This gap comprised the focal point of this study.
CHAPTER 3

METHODOLOGY

This chapter describes the methodological practices employed to answer the study’s four research questions. The purpose of this study was to determine how adult learners in face-to-face and online classes perceived classroom dynamics. The following research questions guided this study:

1. Are there any differences between online and face-to-face methods in students’ ratings of their classroom dynamics?
2. To what extent do demographic characteristics predict remedial students’ perceptions of online and face-to-face classroom dynamics?
3. To what extent does identification with academics explain remedial students’ perceptions of online and face-to-face classroom dynamics?
4. To what extent do delivery methods, demographic characteristics, and identification with academics explain observed variations in classroom dynamics?

In addressing these questions, the study examined the four dimensions of classroom dynamics: teacher respect for students, confidence in teacher’s ability, learner cohesions, and learner voice.

This chapter presents the methodological principles used to explore the research questions. It is divided into eight major sections: logical framework of the study,
instrumentation, study sample, data collection, data preparation, data analysis, and methodological limitations.

**Logical Framework**

This study adhered to the logical framework initially modeled by Oliva (2003) and Thomas (2004), and further tailored by Davis (2006) and Sethna (2010) (see Table 3). This framework calls for a conception of the four dimension of classroom dynamics.

Table 3

**Relationships and Dimensions of the Classroom Dynamics Questionnaire**

<table>
<thead>
<tr>
<th>Relationships</th>
<th>Dimensions</th>
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</table>
| Teacher-Student Relationships | *Teacher respect for students*: The teacher respects the students as learners and as individuals.  
                             | *Confidence in teacher’s ability*: The learners believe that the teacher is a competent and committed educator. |
| Student-Student Relationships | *Learner cohesion*: Learners feel a sense of sharing, support, and affiliation with the other learners.  
                             | *Learner voice*: Learners feel that they can express their ideas and true feelings with the other learners. |

This study’s broader model for predicting classroom dynamics in online and face-to-face remedial education classrooms included a hybrid of Davis’s (2006) and Sethna’s (2010) operational models. The model includes variables believed to predict perceived classroom dynamics, which could affect perceptions and participations in an adult
education learning environment (Figure 5). These variables are: delivery method; age, race, and gender; and identification with academics.

Figure 5. Operational model for predictors of classroom dynamics.

**Instrumentation**

**Classroom Dynamics Questionnaire (2003-2006)**

Doctoral students Janet Oliva and Sonya Thomas, under the direction of Thomas Valentine, created the Classroom Dynamics Questionnaire in order to “assess students’ perceptions of classroom environments and identify those factors that affect learning” (Sethna, 2010, p. 39). Valentine, Oliva, and Thomas initially wanted to use a modified version of the Adult Classroom Environment Scale; however, problems arose with the ACES indicating that the scale ignored issues of safety and personality within the
classroom environment, restricted student power, and exhibited a normative view of the world. It also failed to show the personal interests of those involved and revealed reliability limitations due to technical issues (Thomas, 2004). The researchers made the following observations about the ACES:

1. The scale contained more items than necessary.
2. The instrument items did not address the concept of voice for culturally diverse perspectives of adults.
3. The language used in wording of certain items made them unclear and inconsistent. (Thomas, 2004, p. 45)

Thus, Valentine et al. (2002) created a new instrument, independent of the ACES, to measure classroom dynamics. The CDQ was developed to measure “the social classroom interpersonal dynamics of postsecondary students’ actual and preferred classroom environments. The subscales reflect items used to measure student and/or teacher perceptions of the interpersonal dynamics actually occurring in their classroom and their classroom interpersonal dynamic preferences” (Oliva, 2003, p. 72). Oliva explained the process in more detail:

Many tasks were involved in the development of the CDQ and its subscales. The authors conducted interviews, examined other classroom environment scales, conducted pilot studies, and refined the item pools. After the final selection of the items and subscales, the response scale and background variables were added to the instrument. (p.78)
The CDQ is a 27-item survey instrument and consists of a six-point Likert scale in which “1” represents strong disagreement and “6” represents strong agreement. The items cover relationships between students and teachers, and students and their peers, and strive to measure the four distinct dimensions. The questionnaire is divided into three sections: section one contains 13 items; section two, 14 items (for a total of 27 items); and section three contains variables assessing both the demographic and academic makeup of the survey respondents. The itemized structure of the CDQ and its content were designed to collect data regarding the interpersonal dynamics occurring in the classroom and the interpersonal dynamics preferred by students in the classroom (Davis, 2006; Oliva, 2003; Thomas, 2004).

A pilot study was conducted in order to test and ensure the CDQ’s reliability and validity (Valentine, Oliva, & Thomas, 2002). The pilot study included the following objectives:

1. to ascertain the capability of the instrument to be used in a very diverse setting;
2. to ascertain the reliability of the instrument and independence of items; and,
3. to ascertain the sufficiency of administration procedures. (Valentine et al., 2002; 2006)

The authors were able to ensure validity regarding:

a. preliminary research on information and key concepts that were consistent with the literature relating to classroom environment and interpersonal relationships;
b. instrument conceptualizations in which major concepts and a conceptual framework were either considered or included; and,
c. construct validity via validity sort which support a lack of relationship between measures that theoretically should not be similar. (Sethna, 2010, p. 31)

Reliability was ensured through the calculation of Cronbach’s coefficient alpha on the internal consistency of the subscales of the instrument (Oliva, 2003). The reliability scores for the CDQ from Oliva (2003), Thomas (2004), and Davis (2006) are listed in Table 4 The subscales of the instrument contained items used to measure students’ and teachers’ actual and preferred interpersonal dynamics within a classroom (Valentine et al., 2002). However, in Davis’s (2006) study, a consistent and significant program emerged: the problem of measurement sensitivity.

Table 4

<table>
<thead>
<tr>
<th></th>
<th>Respect</th>
<th>Confidence</th>
<th>Cohesion</th>
<th>Voice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oliva (2003)</td>
<td>.95</td>
<td>.95</td>
<td>.95</td>
<td>.90</td>
</tr>
<tr>
<td>Thomas (2004)</td>
<td>.92</td>
<td>.93</td>
<td>.93</td>
<td>.86</td>
</tr>
<tr>
<td>Davis (2006)</td>
<td>.93</td>
<td>.94</td>
<td>.83</td>
<td>.92</td>
</tr>
</tbody>
</table>

Measurement Sensitivity

Measurement sensitivity can be defined as “the ability to discriminate among people for a measure” (Sethna, 2010, p. 34). Although the CDQ proved highly reliable
and valid, this third condition of sensitivity was not met. Therefore, Valentine and Sethna (2010) recognized the need for a revision of the CDQ in order to correct the instrument’s distribution of scores.

In Davis’s (2006) study, all scale scores were negatively skewed, which created restrictive variances. This made it virtually impossible to correlate or use outcome variables as predictor variables; it also hindered co-variance. Davis’s calculations of the individual items measuring the four classroom dynamics were found to be uniformly high. She concluded that distribution of the scores for the four CDQ variables exhibited a “ceiling effect,” meaning the majority of her research participants rated all four dimensions of classroom dynamics very high.

Valentine and Sethna (2010) attempted to correct the problem of sensitivity by proposing a change to the scale used in the CDQ. The original version of the CDQ was deemed symmetrical and ambiguous (i.e., strongly agree to strongly disagree), which led to a revision of the scale that included more of an asymmetrical scale (i.e., poor to excellent). This revision led to a pilot study which ultimately resolved the sensitivity issue.

Davis (2006) studied the perceptions of classroom dynamics within a developmental (now referred to as remedial) studies classroom, but her flawed instrument marginalized her findings. Therefore, this article reexamines the current literature and, using meta-analysis, focused on the effects of employing the revised CDQ, specifically in the context of studies within remedial education.
The Classroom Dynamics Questionnaire for Online Classes (2010-Present)

Doctoral student Noshirwan Sethna (2010) concluded that the CDQ existed in two forms: ideal and real. In Davis’ (2006) study, the real form was used; however, Sethna needed an instrument that captured the classroom dynamics of an online classroom and that ensured measurement sensitivity. Therefore, he and his methodologist created the ideal version of the CDQ by following eight steps: verification of scale, item pool refinement, response scale revision, title revision, addition of background items, pilot study, construct validity sort, and construction of final instrument. Its major purposes were to:

1. determine the reliability of the instrument with the population of the intended study;
2. measure the psychometric quality of the instrument, particularly its sensitivity;
3. determine the adequacy of the administration procedures (i.e., how well did the data collection process work?); and,
4. refine the instrument prior to the study. (p. 66)

The inclusion of the eight steps and four purposes lead to a reliability analysis comparison of Oliva’s (2003), Thomas’s (2004), Davis’s (2006), and Sethna’s (2010) CDQs. Sethna concluded that the piloted version of the Online Classroom Dynamics Questionnaire “exceeded the standards for accepted reliability and [lent] credence to the instrument’s reliability” (Sethna, 2010, p. 69).
A random sampling of 5,988 students generated 277 respondents. Data collected from the pilot study were examined using three technical properties: frequency distribution, item intercorrelation, and subscale reliability.

Within frequency distribution, the most significant finding was uncovered through a subjective assessment of the distributions which found that “no items were related using only one or two of the response choices and the majority of the items were related using a variety of response choices” (Sethna, 2010, p. 153). Sethna was able to determine a lack of Davis’s (2006) “ceiling effect,” or measurement of sensitivity. This evidenced greater reliability within Sethna’s instrument.

Analysis of the data was conducted to ensure that no excessive redundancy of items was present in the instrument. “Any pairs of items that correlated at or above .70 were examined to ensure they were conceptually different items” (Sethna, 2010, p. 154). Sethna concluded that no items contained either a correlation of .70 or higher or a 49% shared variance. Therefore, no items were determined to be redundant, and no action was warranted to amend the instrument.
Subscale Reliability

Subscale reliability was analyzed by calculating the coefficient alpha of the four subscales. The reliabilities calculated during the pilot study scale ranged from .95 to .96. Therefore, Sethna’s (2010) pilot version of the Online Classroom Dynamics Questionnaire exceeded the standard expectations acceptable for instrument reliability (see Table 6).

Table 6

<table>
<thead>
<tr>
<th></th>
<th>Respect</th>
<th>Confidence</th>
<th>Cohesion</th>
<th>Voice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oliva (2003)</td>
<td>.95</td>
<td>.95</td>
<td>.95</td>
<td>.90</td>
</tr>
<tr>
<td>Thomas (2004)</td>
<td>.92</td>
<td>.93</td>
<td>.93</td>
<td>.86</td>
</tr>
<tr>
<td>Davis (2006)</td>
<td>.93</td>
<td>.94</td>
<td>.83</td>
<td>.92</td>
</tr>
<tr>
<td>Sethna (2010)*</td>
<td>.96</td>
<td>.97</td>
<td>.97</td>
<td>.96</td>
</tr>
</tbody>
</table>

* Revised CDQ Instrument

Instrument Reliability

Instrument reliability is imperative to any research study. Sethna’s (2010) study employed a revised version of the CDQ as a means “to collect data for the purpose of understanding the impact of student characteristics (age, race, and gender) and classroom characteristics (number of students in the online class and course topic of subject)” (p. 81). As in the previous studies, the instrument intended to measure students’ perceptions of the interpersonal relationships of a classroom—but, in this context, within an online classroom environment. To determine reliability and consistency of the new scale, Sethna
calculated the coefficient alpha ($\alpha$) for the four subscales, which yielded the scores of 0.97, 0.96, 0.97, and 0.96 respectively (see Table 7). Sethna also determined the intercorrelations and coefficients of determination among the outcomes variables with significance at the .05 level (Table 8).

Table 7

*Distribution and Reliability of Key Measures*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>Mean Item</th>
<th>Coefficient Alpha ($\alpha$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Respect for Students</td>
<td>6</td>
<td>23.31</td>
<td>6.05</td>
<td>3.88</td>
<td>.96</td>
</tr>
<tr>
<td>Confidence in Teacher’s Ability</td>
<td>7</td>
<td>26.51</td>
<td>7.44</td>
<td>3.78</td>
<td>.97</td>
</tr>
<tr>
<td>Learner Cohesion</td>
<td>7</td>
<td>25.86</td>
<td>7.39</td>
<td>3.69</td>
<td>.97</td>
</tr>
<tr>
<td>Learner Voice</td>
<td>7</td>
<td>26.67</td>
<td>6.53</td>
<td>3.81</td>
<td>.96</td>
</tr>
</tbody>
</table>

Table 8

*Intercorrelations Among the Four CDQ (Online) Measures*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Confidence</th>
<th>Voice</th>
<th>Cohesion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$R$</td>
<td>$r^2$</td>
<td>$R$</td>
</tr>
<tr>
<td>Respect</td>
<td>.940</td>
<td>.884</td>
<td>.781</td>
</tr>
<tr>
<td>Confidence</td>
<td>-</td>
<td>-</td>
<td>.765</td>
</tr>
<tr>
<td>Voice</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note: Correlations are significant at the .05 level*

Instrument Validity

Sethna’s (2010) instrument proved to be reliable; however, in addition to being highly reliable, an instrument must also ensure validity of data. Thus, Sethna conducted an extensive review of the literature and used appropriate resources to develop the
revised CDQ. The existing knowledge base, which included interviews, literature reviews, pilot studies, and consultations with prevailing methodologists, allowed Sethna to obtain “expect[ed] judgment of committee members … to strengthen the subscales and to ensure the construct validity of the instrument” (p. 84).

**Study Sample**

The data for this study were collected from a sample of remedial education students at two geographically diverse technical colleges in Georgia. The participants were enrolled in one of the following remedial courses: MATH 0098 or 0099, ENGL 0098, or READ 0098. Over the past three semesters, the face-to-face remedial education courses had an average enrollment of 22 students per class, with an approximate 23 classes being offered during the Spring and Fall semesters. The online remedial education courses boast an average enrollment of 17 students per class, with approximately 6 course offerings during the Spring and Fall semester.

Due to the small population of remedial education students enrolled within the two institutions, the study sample consisted of a convenient sample of all students taking remedial education coursework at the time of my research [N=1685]. Enrollment in the online remedial courses was much smaller compared to the face-to-face courses. However, the demographic makeup of this sample was comparable to that of the face-to-face classrooms. The final sample consisted of 248. Of these 248, 48 were removed due to missing data resulting in a final sample size of N=200. The average function was used to replace missing values in order to preserve the data. For the homogeneity study, the final sample consisted of N=10. No data was removed from the gathered data, resulting in a final sample size of N=10. For a full description of the sample, see Chapter 4.
Data Collection

The first phase of the data collection section involved the following activities:

1. Obtaining permission from the authors of the Classroom Dynamics Questionnaire.
2. Obtaining permission from the author of the Identification with Academics Scale.
3. Obtaining permission from both institutions to administer the CDQ and the IAS.
4. Obtaining permission from the Institutional Review Board and the Human Subjects Office of the University of Georgia to conduct the research.

After these permissions were secured, the data collection phase of this research study began. Data were collected confidentially through an online self-completion questionnaire for both the online and face-to-face research participants. In order to ensure congruence within the data, the survey was administered online to both sections of students (i.e., online and face-to-face). The online survey was constructed and distributed to the research participants using the survey management software SurveyMonkey. Specifically, the survey was emailed to participants’ student email accounts during the last two weeks of the Fall semester. This allowed a full 13 weeks of instruction to occur before survey completion.

A survey closure date was listed clearly in the survey instrument itself and was also included in the email message to all participants. An identification number was assigned to each survey instrument in the event a problem arose during the data entry phase. Respondents were not required in any way to indicate their names or identities in
the survey. Students who did not desire to participate in the online survey had the option of exiting from the survey at any time during the process. There were no incentives offered to respondents to encourage their participation.

Data were collected solely from the online survey; no face-to-face, follow-up, video recordings, or screenings were necessary. Data were gathered from SurveyMonkey and transposed into a data-analysis spreadsheet, which was stored on the researcher’s password-protected home computer.

Prior to the administration of the survey, the researcher used multiple contact strategies. Participants were contacted by student email three times within a 16-week period. The first communication took place two weeks before the end of the semester; the second on the final day for make-up exams; and the third two weeks after the last day of class. The final email thanked those who had already responded and appealed to those who had yet to respond. Each email communication included the researcher’s contact information and a reminder that participants had the ability to opt out of the research at any time.

As noted earlier, participants were not asked to include their name or any other identifying information on the survey. They were also given an exit option at the end of each survey section. Thus, if the participant felt uncomfortable at any time during the survey, he or she could easily leave the survey with no penalty.

The researcher petitioned the two research institutions for a list of each prospective participant’s student email address. This information was generated by examining the names of the students registered for the face-to-face or online section of MATH 0098 or 0099, READ 0098, or ENGL 0098. If participants felt they should not be
included within this group, they were given the opportunity to be removed from all documents and receive no further correspondence.

The survey management software provided a unique hyperlink to each participant, which was emailed to his or her student account, in order to track responses and send personalized emails. The researcher did not release any identifiable results of the study to anyone other than individuals working on the project.

Finally, the CDQ and IAS, were administered using Dillman’s (2007) design principles, which extend the earlier work of Dillman, Tortora, and Bowker (1998). These principles offer numerous advantages in the administration of online surveys, including refined appearance, ease of access, and dynamic interaction. The survey instrument was constructed in a respondent-friendly format “aimed explicitly at reducing three of the four types of error that typically percent accurate surveys from being done, i.e., nonresponse, measurement, and coverage of the survey population” (Dillman et al., 1998, p. 14). This was done in order to encourage more participation from respondents.

**Data Preparation**

This study used a dataset containing demographic information from students enrolled in the aforementioned remedial courses offered face-to-face and online during the spring 2015 and fall 2016 semesters. The demographic data used in this study were extracted and compiled by the institutional effectiveness department of each institution. In adherence to privacy laws, permission was obtained through the necessary and appropriate channels prior to data collection. All datasets were maintained in a Microsoft Excel spreadsheet and were open to review by the Institutional Effectiveness Office of the Technical College System of Georgia.
Data Analysis

The data collected from the survey responses were analyzed using the Statistical Software Package for the Social Sciences (SPSS). Comparative and statistical analyses were performed in order to effectively answer the four research questions:

1. Are there any differences between online and face-to-face methods in students’ ratings of their classroom dynamics?
2. To what extent do demographic characteristics predict remedial students’ perceptions of online and face-to-face classroom dynamics?
3. To what extent does identification with academics explain remedial students’ perceptions of online and face-to-face classroom dynamics?
4. To what extent do delivery methods, demographic characteristics, and identification with academics explain observed variations in classroom dynamics?

Numerous quantitative analyses were employed to answer the research questions: bivariate analyses, simple correlation analyses, multivariate analyses, and t-tests (to help with direct comparisons of multiple means). The purpose of these analyses was to help explain outcome and predictor variables. However, due to high multicollinearity discovered in the predictor variables, a multiple regression analyses was performed in order to create the CDQ-Composite variable.

Limitations

The self-reporting aspect of the questionnaire was a major limitation of this study. As indicated earlier, sampling bias is a pervasive problem in emailed/electronic surveys. Whether due to undeliverable, unopened, or simply ignored emails, this survey method is
often plagued with considerable inaccuracies that hinder sampling frames. My prediction of a higher response rate for students taking the online class than for those in the face-to-face proved correct. This caused a potential bias within my results.

Because of the convenient, non-random sampling technique, generalizations beyond the sample could not be made statistically, only through logical inference. The relatively small sample size also caused statistical limitations to the study. As in the previous four studies, it was predicted that this study would “also employ a limited number of background variables in order to make analyses regarding their effect, or lack of, on classroom environment” (Sethna, 2010, p. 89). Therefore, I only garnered modest expectations, and no instructor information was captured due to TCSG regulations pertaining to the use of instructor data.
CHAPTER 4

FINDINGS

The results of this research study are divided into six sections: (a) population and descriptive findings, (b) instrumentation and reliability, (c) investigation of assumptions for inferential tests, (d) multivariate and multiple regression analyses, (e) tests of hypotheses, and (f) presentation of the homogeneity study. SPSS (version 22.0) was used for all descriptive analyses and for the t-tests of the additional test of homogeneity study. Stata (version 14.0) was used to perform the multiple regression analysis. All inferential analyses were tested at the 95% level of significance.

The purpose of this study was to determine how adult learners in face-to-face and online classes perceived classroom dynamics. The study set out to answer the following research questions:

1. Are there any differences between online and face-to-face methods in students’ ratings of their classroom dynamics?
2. To what extent do demographic characteristics predict remedial students’ perceptions of online and face-to-face classroom dynamics?
3. To what extent does identification with academics explain remedial students’ perceptions of online and face-to-face classroom dynamics?
4. To what extent do delivery methods, demographic characteristics, and identification with academics explain observed variations in classroom dynamics?
Population and Descriptive Findings

The population of this study included students at two geographically diverse technical colleges in Georgia. The data were collected from a sample of 200 students enrolled in a MATH 0098 or 0099 course offered face-to-face and/or online during the timeframe beginning in the spring 2015 and ending in the fall 2015 semesters. Students ranged in age from 18 to 62 years ($M = 35.3$ years, $SD = 12.3$ years). Table 9 presents the frequencies and percentages of the nominal descriptive variables of the study. The majority of the sample ($N = 200$) were female (81%), while a much smaller portion of the sample were male (20%). Fifty-five percent of the population were African American, 38% were White, and 7% comprised other ethnicities. Half of the population (50%) was enrolled in a face-to-face classroom, more than a third were enrolled in an online classroom (39%), and a smaller percentage were enrolled in both an online and face-to-face course (11%). The students reported their highest level of education in years, with a sample range of 12 to 19 years. Table 9 also presents the counts and frequencies of the number of students for each of the years of education. A summary of findings indicated that only one student (less than 1% of respondents) reported his or her highest level of education as 12 years during the time of the study (commensurate with a high school education). Students who reported their highest level of education as between 13 and 16 years made up the majority of the sample (92.5%). A matriculating undergraduate or a student with an undergraduate degree fell within the student majority of this study. Fourteen students (7%) reported a level of education higher than an undergraduate degree, or 17 to 19 years of school. The majority of the participants were not first-generation college students (75%).
Table 9

*Frequency Counts and Percentages of Demographic and Descriptive Variables for the Study Participants (N = 200)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>161</td>
<td>80.5</td>
</tr>
<tr>
<td>Male</td>
<td>39</td>
<td>19.5</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>110</td>
<td>55.0</td>
</tr>
<tr>
<td>White</td>
<td>77</td>
<td>38.5</td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
<td>6.5</td>
</tr>
<tr>
<td>Method of instructional delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face-to-face</td>
<td>101</td>
<td>50.5</td>
</tr>
<tr>
<td>Online</td>
<td>77</td>
<td>38.5</td>
</tr>
<tr>
<td>Online and face-to-face</td>
<td>22</td>
<td>11.0</td>
</tr>
<tr>
<td>Highest level of education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>13</td>
<td>47</td>
<td>23.5</td>
</tr>
<tr>
<td>14</td>
<td>55</td>
<td>27.5</td>
</tr>
<tr>
<td>15</td>
<td>55</td>
<td>27.5</td>
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<tr>
<td>16</td>
<td>28</td>
<td>14.0</td>
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<tr>
<td>17</td>
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<td>5.5</td>
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<tr>
<td>18</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>19</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>First to attend college</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>150</td>
<td>75.0</td>
</tr>
<tr>
<td>Yes</td>
<td>50</td>
<td>25.0</td>
</tr>
</tbody>
</table>

**Instrumentation and Reliability**

Two instruments were used to gather the data for this study: the Classroom Dynamics Questionnaire (CDQ) and the Identification with Academics Scale (IAS).


**Classroom Dynamics Questionnaire**

The CDQ is a 27-item survey instrument for measuring “the social classroom interpersonal dynamics of postsecondary students’ actual and preferred classroom environments. The subscales reflect items used to measure student and/or teacher perceptions of the interpersonal dynamics actually occurring in their classroom and their classroom interpersonal dynamic preferences” (Oliva, 2003, p. 72). Each of the CDQ items was scored on a 5-point Likert scale, where 1 = “poor” and 5 = “excellent.” The survey was grouped into four dimensions: teacher’s respect for students (CDQ1), confidence in teacher’s ability (CDQ2), learner cohesion (CDQ3), and learner voice (CDQ4).

CDQ1 comprised average scores for the following items: (a) the teacher’s fairness in dealing with students, (b) the teacher’s respect for the students of diverse backgrounds, (c) the teacher’s respect for students, (d) the way the teacher communicated with the students, (e) and the attention the teacher gave to the student’s comments. CDQ2 comprised average scores for the following items: (a) the teacher’s knowledge of course content, (b) the teachers’ coverage of course content, (c) the teacher’s preparedness for the course, (d) the teacher’s commitment to helping students learn, (e) the teacher’s overall teaching ability, (f) the feedback the teacher provided regarding students’ work, and (g) the teacher’s ability to make learning interesting. CDQ3 comprised average scores for the following items: (a) students’ friendliness towards each other, (b) students’ support for each other’s learning, (c) students’ enjoyment in learning together, (d) students’ commitment to each other’s learning, (e) student’s ability to work together, (f) students’ sharing of learning resources, and (g) students’ ability to learn from one
another. CDQ4 comprised average scores for the following items: (a) students’ ability to respectfully disagree, (b) students’ comfort in expressing their opinions, (c) students’ unselfishness during discussions, (d) the opportunity for all students to participate in discussions, (e) students’ comfort participating in discussions; (f) students’ respect for other’s opinions, and (g) students’ consideration for each other’s comments. For each of the four CDQ dimension scores, higher scores were indicative of greater student perceptions of the interpersonal dynamics actually occurring in their classroom and their classroom interpersonal dynamic preferences.

The four CDQ dimension scores were highly correlated, with bivariate correlation coefficients above $r = .75$. Tabachnick and Fidell (2007) defined multicollinearity as a correlation coefficient of $r = .90$ or greater between two variables. Multicollinearity was noted between the variable pairs of CDQ1 and CDQ2 ($r = .937, p < .001$) and CDQ3 and CDQ4 ($r = .938, p < .001$). Multicollinearity sometimes indicates that two variables are assessing the same concept; thus, only one variable in the pair may be all that is needed to define the concept. Multicollinearity in a regression model is usually of concern when found between predictors. However, due to the multicollinearity between the above-noted dependent variable pairs, it was determined that a composite CDQ variable (CDQ-Composite) would be investigated in an additional multiple regression model. The CDQ-Composite variable was computed as the average of all 27 CDQ item scores for each participant in the study.

**Identification with Academics Scale**

The IAS contains 13 items that measure the extent to which a student’s self-esteem is connected with and dependent on academic outcomes (North Carolina State
University, 2007). Each of the IAS items was scored on a 6-point Likert scale, where 1 = “strongly disagree” and 6 = “strongly agree.” Higher scores indicated higher participant self-esteem in connection with academic outcome, while lower scores indicated a participant’s low self-esteem in connection with academic outcome.

The average mean score of the IAS comprised the following items: (a) “Being a good student is an important part of who I am”; (b) “I feel that the grades I get are an accurate reflection of my abilities”; (c) “My grades do not tell me anything about my academic potential”; (d) “I don't really care what tests say about my intelligence”; (e) “School is satisfying to me because it gives me a sense of accomplishment”; (f) “If the tests we take were fair, I would be doing much better in school”; (g) “I am often relieved if I just pass a course”; (h) “I often do my best work in school”; (i) “School is very boring for me, and I'm not learning what I feel is important”; (j) “I put a great deal of myself into some things at school because they have special meaning or interest for me”; (k) “I enjoy school because it gives me a chance to learn many interesting things”; (l) “I feel like the things I do at school waste my time more than the things I do outside of school”; and (m) “No test will ever change my opinion of how smart I am.” Items c, d, f, g, i, l, and m were reverse-coded prior to averaging the mean IAS score.

Reliability

Cronbach’s coefficient alpha for internal consistency reliability for the CDQ and IAS instrumentation was checked in SPSS. A Cronbach’s alpha value of .70 or greater indicates good reliability of an instrument in relation to the data collected (Field, 2005). The Cronbach’s alpha coefficients for the CDQ and IAS scores derived from the data in this study were above the .70 cutoff for good reliability. Therefore, the CDQ and IAS
instruments were considered reliable and used as measured for inferential analysis. Table 10 presents the measures of central tendency for the CDQ and IAS constructs, as well as the Cronbach’s alpha coefficients for each of the constructs.

Table 10

*Measures of Central Tendency and Cronbach’s Alpha Coefficients for CDQ and IAS variables (N = 200)*

<table>
<thead>
<tr>
<th>Instrument</th>
<th>M</th>
<th>SD</th>
<th>Mdn</th>
<th>Sample Range</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher respect for students (CDQ1)</td>
<td>4.22</td>
<td>1.02</td>
<td>4.83</td>
<td>1-5</td>
<td>.975</td>
</tr>
<tr>
<td>Confidence in teacher’s ability (CDQ2)</td>
<td>4.15</td>
<td>1.06</td>
<td>4.71</td>
<td>1-5</td>
<td>.979</td>
</tr>
<tr>
<td>Learner cohesion (CDQ3)</td>
<td>3.89</td>
<td>1.11</td>
<td>4.00</td>
<td>1-5</td>
<td>.988</td>
</tr>
<tr>
<td>Learner voice (CDQ4)</td>
<td>3.96</td>
<td>1.06</td>
<td>4.00</td>
<td>1-5</td>
<td>.981</td>
</tr>
<tr>
<td>Identification with academics (IAS)</td>
<td>4.55</td>
<td>0.74</td>
<td>4.65</td>
<td>2.62-6.00</td>
<td>.715</td>
</tr>
<tr>
<td>CDQ-Composite</td>
<td>4.05</td>
<td>1.01</td>
<td>4.35</td>
<td>3.91-4.19</td>
<td>.991</td>
</tr>
</tbody>
</table>

*Note.* M = Mean; SD = Standard Deviation; Mdn = Median; α = Cronbach’s alpha

**Investigation of Assumptions for Inferential Tests**

One multivariate multiple regression analysis with the four CDQ variables was planned for use in the study. A multivariate multiple regression analysis assumes multivariate normality (an assumption that is analogous to the assumption of homogeneity of variances) and that the dependent variables of study are at least moderately correlated (“Introduction to SAS,” 2015). A Pearson’s product moment correlation analysis was performed on the relationship between participants’ scores on the four dependent CDQ variables. Table 11 presents the correlation coefficients. Since the four CDQ items were
very strongly correlated, it was decided that the four items would be combined into a composite measure of CDQ (CDQ-Composite) and a single multiple regression analysis with the dependent variable of CDQ-Composite was performed instead of the multivariate regression originally planned. The specifications for the multiple regression model with the dependent variable of CDQ-Composite were as follows:

\[ CDQ\text{-Composite} = B_0 + B_1(\text{Gender} = \text{Male}) + B_2(\text{Mean Age}) + B_3(\text{Ethnicity} = \text{White}) + B_4(\text{Ethnicity} = \text{Other}) + B_5(\text{Mean IAS Score}) + B_6(\text{Online Instructional Delivery}) + B_7(\text{Online and Face-to-Face Instructional Delivery}) + \varepsilon \]

The reference student for the regression model was an African-American female, 35.3 years of age (mean age of the sample), with an IAS score of 4.6 (mean IAS score of the sample) and taking classes with face-to-face delivery. Stata statistical software was used to model the regression.
<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
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<tbody>
<tr>
<td>1. CDQ1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. CDQ2</td>
<td>.937**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. CDQ3</td>
<td>.792**</td>
<td>.787**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. CDQ4</td>
<td>.875**</td>
<td>.859**</td>
<td>.938**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. CDQ-Composite</td>
<td>.945**</td>
<td>.943**</td>
<td>.931**</td>
<td>.971**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Face-to-face instructional delivery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Online instructional delivery</td>
<td>.036</td>
<td>.016</td>
<td>.087</td>
<td>.042</td>
<td>.047</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Online and face-to-face instructional delivery</td>
<td>-.056</td>
<td>-.033</td>
<td>-.100</td>
<td>-.060</td>
<td>-.064</td>
<td>-.799**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Age mean centered</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Ethnicity: White</td>
<td>.138</td>
<td>.129</td>
<td>.114</td>
<td>.129</td>
<td>.133</td>
<td>-.018</td>
<td>-.056</td>
<td>.116</td>
<td>-.270**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Ethnicity: other</td>
<td>-.031</td>
<td>-.030</td>
<td>-.063</td>
<td>-.034</td>
<td>-.043</td>
<td>.018</td>
<td>-.042</td>
<td>.037</td>
<td>-.047</td>
<td>-.209*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Ethnicity: Black</td>
<td>-.119</td>
<td>-.111</td>
<td>-.080</td>
<td>-.109</td>
<td>-.108</td>
<td>.009</td>
<td>.075</td>
<td>-.132</td>
<td>.288**</td>
<td>-.875**</td>
<td>-.292**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Gender</td>
<td>.004</td>
<td>-.026</td>
<td>.033</td>
<td>-.007</td>
<td>&lt;.001</td>
<td>.058</td>
<td>-.052</td>
<td>-.012</td>
<td>-.026</td>
<td>&lt;.001</td>
<td>-.027</td>
<td>.014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Mean centered IAS average</td>
<td>.277**</td>
<td>.283**</td>
<td>.163**</td>
<td>.216*</td>
<td>.244**</td>
<td>.082</td>
<td>-.018</td>
<td>-.104</td>
<td>.152*</td>
<td>.180*</td>
<td>-.050</td>
<td>-.151*</td>
<td>-.133</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *p < .05; **p < .001
Cohen’s (1988) effect sizes of correlational analyses include weak effect (+/- .10 -.29), moderate effect (+/- .30 -.49) and strong effect (+/- .50 - 1.0). Not surprisingly, a strong statistically significant relationship was found between the variables of face-to-face instructional delivery and online instructional delivery ($r = -.799, p < .001$). The magnitude and direction of the correlation coefficient indicated that students in face-to-face courses were associated with not participating in online courses indicating that these groups were relatively independent.

A weak, yet statistically significant relationship was found between ethnicity - white and the mean centered age variable ($r = -.270, p < .001$). The magnitude and direction of the correlation coefficient indicated that white students were more associated with being younger than the average age of participants. Conversely, a student who is not white was more associated with being older than the average age of participants.

A direct, weak, yet statistically significant relationship was found between the mean centered IAS average variable and all five CDQ variables: CDQ1 ($r = .277, p < .001$); CDQ2 ($r = .283, p < .001$); CDQ3 ($r = .163, p < .001$); CDQ4 ($r = .216, p < .001$); and CDQ-Composite ($r = .244, p < .001$). The magnitude and direction of the correlation coefficients indicated that students with above average IAS scores were associated with higher scores on all of the CDQ constructs (teachers respect for students, confidence in teacher’s ability, learner cohesion, and learner voice) and the CDQ composite construct. Conversely, students with below average IAS scores were associated with lower scores on all of the CDQ constructs (teachers respect for students, confidence in teacher’s ability, learner cohesion, and learner voice) and the CDQ composite construct.

Additionally, a direct, weak, yet statistically significant relationship was found between
the mean centered IAS variable and age \((r = .180, p < .05)\). The magnitude and direction of the correlation coefficient indicated that older students were more associated with above average IAS scores. Conversely, younger students were more associated with below average IAS scores. Lastly, an indirect, weak, yet statistically significant relationship was found between the mean centered IAS variable and gender \((r = -.151, p < .05)\). The magnitude and direction of the correlation coefficient indicated that male students were more associated with above average IAS scores. Conversely, female students were more associated with below average IAS scores.

**Multiple Regression Analysis**

One multiple regression analysis was conducted to investigate the CDQ-Composite dependent variable regressed on the predictors. The multiple regression with the CDQ-Composite variable was performed because of the multicollinearity of the variable pairs CDQ1 and CDQ2 \((r = .937, p < .001)\), and CDQ3 and CDQ4 \((r = .938, p < .001)\), and also because the omnibus test of the multivariate regression indicated that the four regression models using the four CDQ items were not significantly different. The regression included one dependent variable, CDQ-Composite, which was computed for each student as an average score for all answered CDQ items. Independent variables included (a) gender, coded as \(1 = \text{male} \) and \(0 = \text{female} \), such that “female” was the reference group for gender; (b) age (a mean centered, continuous variable); (c) ethnicity, dummy coded into two variables of “White” and “other,” with “African American” as the reference group for ethnicity; (d) identification with academics (IAS), a mean centered, continuous variable; and (e) instructional delivery, dummy coded into two variables of
“online” and “face-to-face and online,” with “face-to-face” as the reference group for instructional delivery approach.

Table 12 presents the multiple regression model for the dependent variable of CDQ-Composite, $R^2 = .07$, $F (7,192) = 2.18$, $p = .037$. One predictor, IAS score, was statistically significant, $B = 0.33$, $t (192) = 3.29$, $p = .001$. This finding indicated that for each one-point increase in the IAS score, there was an average 0.33-point increase in the variable of CDQ-Composite. In other words, as a student’s self-esteem in academics increased, he or she perceived the classroom dynamics more favorably.
Table 12

Multiple Regression for CDQ-Composite Regressed on Independent Variables of Study (N = 200)

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>$B$</th>
<th>SE $B$</th>
<th>$t$</th>
<th>$P$</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender = male</td>
<td>-.07</td>
<td>.18</td>
<td>-.41</td>
<td>.680</td>
<td>-0.43</td>
<td>0.28</td>
</tr>
<tr>
<td>Age</td>
<td>0.00</td>
<td>.01</td>
<td>-.48</td>
<td>.632</td>
<td>-0.02</td>
<td>.01</td>
</tr>
<tr>
<td>Ethnicity = White</td>
<td>.14</td>
<td>.16</td>
<td>0.90</td>
<td>.370</td>
<td>-0.17</td>
<td>.46</td>
</tr>
<tr>
<td>Ethnicity = other</td>
<td>.08</td>
<td>.29</td>
<td>-0.29</td>
<td>.774</td>
<td>-0.66</td>
<td>.49</td>
</tr>
<tr>
<td>IAS score</td>
<td>.33</td>
<td>.10</td>
<td>3.30</td>
<td>.001</td>
<td>0.13</td>
<td>0.53</td>
</tr>
<tr>
<td>Online instructional delivery</td>
<td>-.10</td>
<td>.15</td>
<td>-0.64</td>
<td>.520</td>
<td>-0.39</td>
<td>0.20</td>
</tr>
<tr>
<td>Online and face-to-face instructional delivery</td>
<td>.10</td>
<td>.24</td>
<td>0.40</td>
<td>.689</td>
<td>-0.37</td>
<td>0.56</td>
</tr>
<tr>
<td>Constant</td>
<td>4.09</td>
<td>0.18</td>
<td>22.32</td>
<td>&lt;.001</td>
<td>3.72</td>
<td>4.45</td>
</tr>
</tbody>
</table>

Model Summary

$F = 2.18, p = .037$

$R^2 = .07, RMSE = 0.99$

Note. $B =$ Unstandardized Regression Coefficient; $SE B =$ Standard Error of Unstandardized Regression Coefficient; $t =$ t-test statistic; $p =$ probability value; 95% C.I. = 95% confidence interval; RMSE = Root-mean square error; IAS = Identification with academics. IAS score and age were mean centered variables. Gender reference category = Female. Ethnicity reference category = African American – Black. Instructional Delivery reference category = face-to-face.

Tests of Hypotheses

One multivariate multiple regression model was developed to test the four research questions of this study. The model findings were presented in the previous sections of this chapter. In order to retain parsimony and avoid repetition of reporting,
each of the four hypotheses is presented according to the following structure: (1) a restatement of the research question and presentation of the null hypothesis, (2) a brief summary of the findings, with reference(s) associated table(s), and (3) a conclusion related to the null hypothesis.

Research Question 1

Are there any differences between online and face-to-face methods in students’ ratings of their classroom dynamics?

Null hypothesis 1. There is not a statistically significant effect for either of the coefficients of (a) online learning or (b) online and face-to-face learning when controlling for the other model predictors, as relates to the dependent variable of CDQ-Composite.

None of the variables representing instructional delivery were significantly correlated with the CDQ-Composite variable. A significant effect was not found in the multiple regression model for the predictors of (a) online learning or (b) online and face-to-face learning in the multiple regression findings (see Table 12).

Conclusion related to null hypothesis 1. The two variables representing the method of instructional delivery did not reach statistical significance for the CDQ-Composite variable. Therefore, null hypothesis 1 was not rejected. There was not sufficient evidence indicating that instructional delivery had a significant effect on remedial students’ ratings of their classroom dynamics, after holding other variables constant.
Research Question 2

To what extent do student demographic characteristics relate to remedial students’ perceptions of online and face-to-face classroom dynamics after controlling for other variables (e.g., delivery method, identification with academics)?

Null hypothesis 2. There is not a statistically significant effect for any of the predictors of (a) age, (b) gender = male, (c) ethnicity = White, or (d) ethnicity = other, when controlling for the other model predictors, as relates to the dependent variable of CDQ-Composite.

Significant bivariate associations were not found between the CDQ-Composite variable and the variables of age, gender, or ethnicity (see Table 11). Also, the variables representing age, gender, and ethnicity were not significant predictors of CDQ-composite in the multiple regression findings (see Table 12).

Conclusion related to null hypothesis 2. The four demographic variables did not reach statistical significance. Therefore, null hypothesis 2 was not rejected. There was not sufficient evidence to indicate that student demographic characteristics related to remedial students’ perceptions of online and face-to-face classroom dynamics after controlling for other variables (e.g., delivery method, identification with academics).

Research Question 3

To what extent does identification with academics predict remedial students’ perceptions of online and face-to-face classroom dynamics after holding other variables constant?

Null hypothesis 3. There is not a statistically significant effect for the predictor of identification with academics, as related to the CDQ-Composite variable.
A moderate, positive, significant correlation was found between the IAS score and CDQ-Composite ($r = .244, p < .001$). The IAS score was statistically significant for the CDQ-Composite outcome in the regression model, $B = 0.33, t (192) = 3.30, p = .001$ (see Table 12). This finding indicated that for each one-point increase in the IAS score, there was an average 0.33-point increase in the variable of CDQ-Composite. Thus, as a student’s self-esteem in academics increased, he or she was more favorable to the classroom dynamics.

**Conclusion related to null hypothesis 3.** The IAS predictor was significant for the outcome CDQ-Composite. Therefore, null hypothesis 3 was rejected. There was sufficient evidence indicating that identification with academics predicts remedial students’ perceptions of two elements of online and face-to-face classroom dynamics after holding other variables constant.

**Research Question 4**

To what extent do delivery method, personal characteristics, and identification with academics explain observed variations in classroom dynamics after holding other variables constant?

A hypothesis test was not performed for research question 4. However, the variability for significant effects in the regression models was investigated using squared semi-partial correlation coefficients. The only significant effect found was in relation to the IAS variable in and CDQ-Composite (see Table 12). The squared semi-partial correlation coefficient for the IAS variable on the CDQ-Composite outcome was .052; that is, the IAS variable contributed approximately 5% of unique variability to the CDQ-Composite outcome. The R-squared value for the model was .07. As noted earlier, the R-
squared value is the total variability accounted for in a dependent variable by the predictors in the model. Thus, the IAS predictor uniquely accounted for most of the variability in the regression model.

**Homogeneity Study**

A second pilot study was conducted using a different college and different subject areas to test for homogeneity with the mathematics students in the full study. Due to difficulties in accessing students for the pilot, the data were collected from a very small sample of students ($N = 10$) enrolled in Reading 0099 and English 0099 at a different university than the students in the main study. Table 13 presents the frequencies and percentages of the descriptive variables of the students in the homogeneity study. The majority of the population were female (70%), while a much smaller portion of the population were male (30%). Seventy percent of the population were African American or Black, 20% were White, and 10% comprised other ethnicities. Half of the population was enrolled in a face-to-face classroom, and half in an online classroom. A majority of the students (50%) reported their highest level of education as 13 years; one third (30%) reported having 14 years of education; while 10% reported 15 years. Forty percent of the participants were first-generation college students. Thus, this small sample is similar to the main study reported here.
Table 13

*Frequency Counts and Percentages of Demographic and Descriptive Variables for the Homogeneity Study Participants (N = 10)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>7</td>
<td>70.0</td>
</tr>
<tr>
<td>Male</td>
<td>3</td>
<td>30.0</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>7</td>
<td>70.0</td>
</tr>
<tr>
<td>White</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>Method of instructional delivery</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face-to-face</td>
<td>5</td>
<td>50.0</td>
</tr>
<tr>
<td>Online</td>
<td>5</td>
<td>50.0</td>
</tr>
<tr>
<td><strong>Highest level of education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>5</td>
<td>50.0</td>
</tr>
<tr>
<td>14</td>
<td>3</td>
<td>30.0</td>
</tr>
<tr>
<td>15</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>First to attend college</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>60.0</td>
</tr>
<tr>
<td>Yes</td>
<td>3</td>
<td>30.0</td>
</tr>
</tbody>
</table>

**Reliability**

Cronbach’s coefficient alpha for internal consistency reliability for the CDQ and IAS instruments was checked in SPSS. A Cronbach’s alpha value of .70 or greater indicates good reliability of an instrument in relations to the data collected (Field, 2005). The Cronbach’s alpha coefficients of the CDQ and IAS items for the data collected in the homogeneity study were above the .70 cutoff for good reliability. Therefore, the CDQ and IAS instruments were considered reliable. Table 14 presents measures of central
tendency for the CDQ and IAS constructs, as well as the Cronbach’s alpha coefficients for the homogeneity study sample.

Table 14

Measures of Central Tendency for Perception of Classroom Dynamics and Identification with Academics Scale Variables Used in Analysis (N = 10)

<table>
<thead>
<tr>
<th>Instrument</th>
<th>M</th>
<th>SD</th>
<th>Mdn</th>
<th>Sample Range</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher respect for students (CDQ1)</td>
<td>3.30</td>
<td>1.63</td>
<td>3.92</td>
<td>1-5</td>
<td>.98</td>
</tr>
<tr>
<td>Confidence in teacher’s ability (CDQ2)</td>
<td>3.33</td>
<td>1.57</td>
<td>3.64</td>
<td>1-5</td>
<td>.98</td>
</tr>
<tr>
<td>Learner cohesion (CDQ3)</td>
<td>3.88</td>
<td>1.38</td>
<td>4.31</td>
<td>1-5</td>
<td>.99</td>
</tr>
<tr>
<td>Learner voice (CDQ4)</td>
<td>3.57</td>
<td>1.42</td>
<td>4.29</td>
<td>1-5</td>
<td>.96</td>
</tr>
<tr>
<td>Identification with academics (IAS)</td>
<td>4.54</td>
<td>1.18</td>
<td>5.04</td>
<td>2.38-5.77</td>
<td>.79</td>
</tr>
</tbody>
</table>

Note. M = Mean; SD = Standard Deviation; Mdn = Median; α = Cronbach’s Alpha Coefficient

Mean comparison. An independent samples t-test was conducted to compare the mean scores of CDQ and IAS constructs between the students in the main study (N = 200) and the students in the homogeneity study (N = 10). SPSS was used to conduct the homogeneity study. Prior to analysis, equality of variances between group means was investigated using Levene’s test for equal variances at the 95% level of significance. In Levene’s test, significant results are indicative of unequal variances between groups and violate the assumption of homogeneity between groups. The variances between the two student groups were statistically different for the variables CDQ1 (p = .003), CDQ2 (p = .015), and IAS (p = .003). SPSS offers a t-test with adjusted degrees of freedom when
the equal variance assumption is violated. The tests with the adjusted degrees of freedom were used for the CDQ1, CDQ2, and IAS dependent variables. Table 15 presents the results of the independent samples t-tests comparing the two student groups on the five dependent variables of interest. None of the t-tests was statistically significant, indicating that the two student groups did not differ significantly in their mean scores regarding the five dependent variables. The non-significance indicated that the two student groups were similar in their responses to the CDQ and IAS items, offering at least initial evidence that the findings from this single-site, single-subject study are potentially generalizable to other sites and academic subjects.

Table 15

Results of Independent Samples t-test Comparing Mathematics 0098 or 0099 (N = 200) and Reading 0099 and English 0099 (N = 10) Students on CDQ and IAS Scores

| Variables  | Math     | English   |  |  |  |  |
|------------|----------|-----------|  |  |  |  |
|            | M        | SD        | M  | SD  | t  | df | P  |
| Age in years | 35.34    | 12.27     | 30.20 | 9.66 | 1.30 | 208 | .194 |
| CDQ1       | 4.22     | 1.02      | 3.30  | 1.63 | 1.77 | 9.35 | .109 |
| CDQ2       | 4.15     | 1.06      | 3.33  | 1.57 | 1.64 | 9.42 | .135 |
| CDQ3       | 3.89     | 1.11      | 3.88  | 1.38 | 0.04 | 208  | .965 |
| CDQ4       | 3.96     | 1.06      | 3.57  | 1.43 | 1.12 | 208  | .265 |
| IAS        | 4.55     | 0.74      | 4.54  | 1.18 | 0.04 | 9.36 | .968 |

*Note. M = Mean; SD = Standard Deviation; t = t-test statistic; p = probability value*
Summary

This chapter began with a description of the demographics of the participants in the study, followed by a discussion of the assumptions for the inferential analyses. The four hypotheses of this study were then explored in relation to the inferential analyses.

A series of correlational analyses and one multiple regression analysis were used to address hypotheses 1 through 4. Multicollinearity was noted between the four individual CDQ items and therefore instead of performing a multivariate regression, the four CDQ items were combined in one variable, CDQ-Composite. One predictor, IAS score, was statistically significant in the multiple regression model, $B = 0.33$, $t (192) = 3.30$, $p = .001$. This finding indicated that for each one-point increase in the IAS score, there was an average 0.33-point increase in the variable of CDQ-Composite. Thus, as a student’s self-esteem in academics increased, he or she was more favorable toward classroom dynamics.

Hypothesis tests were performed for research questions 1 through 3. Results of the hypothesis tests indicated support for research question 3 only. Research question 4 was addressed with descriptive findings, and IAS contributed roughly 5% of unique variance to the CDQ-Composite outcome. Following the reporting of the tests of hypotheses, a homogeneity study was conducted using students from a different college and different subject areas. The sample group ($N = 10$) was enrolled in Reading 0099 and English 0099. A series of five independent samples t-tests were conducted to compare the mean scores of the two student groups on the individual (not composite) CDQ dependent variables and the IAS predictor variable. Significance was not found on the independent samples t-tests. The non-significance indicated that the two student groups were not
significantly different and were therefore similar in their responses to the CDQ and IAS items. Chapter 5 presents a discussion of the results as well as implications of the findings as they relate to the literature review and future research.
CHAPTER 5

DISCUSSION AND IMPLICATIONS

This chapter provides an interpretation of the findings presented in Chapter 4; the relationship between the findings and their implications for practice and research are addressed throughout. The chapter comprises six major sections: summary of findings, principal findings, discussion of findings, congruence with past studies, implications for practice, and suggestions for future research.

Summary of Findings

The broad purpose of this study was to determine how adult learners in face-to-face and online classes perceived classroom dynamics. The findings are best summarized in reference to the four primary questions that guided the research. Further analyses of these findings are addressed later in the chapter.

Regarding research question one—“Are there any differences between online and face-to-face methods in students’ ratings of their classroom dynamics?—there was no statistically significant effect for either online or face-to-face learning related to any of the four items on the Classroom Dynamics Questionnaire: teacher respect for students, confidence in teacher’s ability, learner cohesion, and learner voice. In addition, no significant effect was found for the predictors in any of the four regression models in the multivariate regression findings. Therefore, there was not sufficient evidence indicating that instructional delivery had a significant effect on remedial student’s rating of their
classroom dynamics after holding other variables (i.e., online and face-to-face learning) constant.

Research question two asked, “To what extent do student demographic characteristics relate to remedial students’ perceptions of online and face-to-face classroom dynamics after controlling for other variables (e.g., delivery method and identification with academics)?” Generally, the predictor variables utilized in this study did not yield significant correlations. The study found no sufficient evidence indicating that student demographic characteristics related to remedial student’s perceptions of online and face-to-face classroom dynamics after controlling for other variables (e.g., delivery method and identification with academics).

Research question three introduced the new survey instrument used to measure students’ academic identification: “To what extent does identification with academics predict remedial students’ perceptions of online and face-to-face classroom dynamics after holding other variables constant?” The predictors on the Identification with Academics Scale did not correlate statistically with the four items of the CDQ. However, omnibus tests of the regressions for CDQ 1, CDQ 2, and the CDQ-Composite (i.e., as a student’s self-esteem in academics increased, he or she perceived the classroom dynamics more favorably) were statistically significant. Therefore, there is sufficient evidence that the IAS predicted remedial students’ perceptions of two elements—teacher respect and teacher confidence—within online and face-to-face classroom dynamics, after holding other variables constant. In other words, as a student’s self-esteem in academics increased, he or she perceived the teacher’s respect for students more favorably.
Research question four combined the hypotheses from research questions one, two, and three: “To what extent do delivery method, personal characteristics, and identification with academics explain observed variations in classroom dynamics after holding other variables constant?” As previously summarized, the variability for significant effects in the regression models was investigated using squared semi-partial correlation coefficients to explain observed variations within delivery method, demographics, and the IAS. The only significant effect found related to the IAS variable within the regression model outcomes of CDQ 1, teacher respect, CDQ 2, teacher confidence, and the CDQ-Composite.

Based on the data analyzed, I concluded that there was no significant difference in classroom dynamics when comparing online and face-to-face instruction, as demonstrated by the results obtained for research questions one and two. Remedial students learning within the online delivery format perceived their classroom in similar ways to those in traditional face-to-face classrooms, with respect to the four items of the CDQ: teacher respect, confidence in teacher’s ability, learner cohesion, and learner voice.

**Principal Findings**

As detailed in Chapter 2, numerous studies have examined student perceptions of classroom dynamics. However, little research has focused primarily on (1) instructional delivery methods and (2) remedial studies classroom dynamics. As previously mentioned, Lewin (1948) and Moos’ (1979) theories provided ways to better understanding social dynamics. They asserted that students’ perceptions in social settings are influenced by and through teacher and student qualities, characteristics, and relationships; each of which affect learning environments. They further argue that perceptions may contribute
to the understanding of educational processes and outcomes (Davis, 2006). This study produced four principal findings:

1. Identification with academics was the variable that best predicted what occurs in a remedial studies classroom.

2. Interpersonal, intrapersonal, and social-psychological variables, such as (a) self-concept of ability, (b) occupational and educational aspirations, (c) valuation of self-direction/conformity, (d) motivation, and (e) social perception, were better predictors than static variables. Personal characteristics were significant predictors but only at a modest level.

3. Several influential variables were not considered in this study: (a) the composition of a classroom, (b) teacher demographic characteristics, (c) teaching style, (d) other students (i.e., peers and mentors), (e) the extent to which a student desired affiliation in class, and (f) the degree to which a student participated in class.

4. Instructional delivery method does not have a significant impact on classroom dynamics in remedial studies classrooms.

**Discussion of Findings**

This study indicated statistical relationships between the predictor and outcome variables were significant, however modest at best. I hypothesize this is partially due to the limited sample size. Still, even given the limitations of the study, the literature suggests practical points to consider exists suggesting an explanation of the study’s results.
The predictor variables of age, ethnicity, and online instruction accounted for a small percentage of variance within each of the four dimensions. Gender had no predictive value regarding the four dimensions of classroom dynamics.

As a predictor variable, age negatively correlated with all four dimensions of the CDQ. This result could indicate that: (a) younger respondents perceived more teacher confidence; (b) younger respondents perceived more respect from their teachers; (c) younger respondents perceived more cohesion with other learners; and/or (d) younger respondents perceived that they had more voice in the classroom than their older classmates. Conversely, these results could indicate that older respondents perceived each of the four dimensions less positively than their younger classmates. The findings suggest that older students feel less connected to their teachers and peers, inhibiting confidence, respect, cohesion, and voice.

A number of practical implications can be drawn from this finding. Older students could potentially have more external forces affecting their psychological thinking. Their primary concerns lie outside of the classroom. Continuous thinking patterns such as this can sometimes shape processes and influence perceptions. Therefore, although the analyses were modest, the question to consider is, do older students in remedial studies courses concern themselves with perceptions as much as their current behaviors?

Ethnicity as a predictor variable correlated negatively with all four dimensions of the CDQ. This could serve as evidence that: (a) non-White respondents of color perceived more teacher confidence; (b) non-White respondents of color perceived more respect from their teachers; (c) non-White respondents of color perceived more cohesion with other learners; and/or (d) non-White respondents of color perceived they had more
voice in the classroom than their White classmates. Conversely, these results might indicate that White respondents perceived each of the four dimensions less positively than non-White respondents. The findings might suggest colleges have become more inclusive, instructors incorporate more culturally inclusive pedagogy and curricula, or the overall demographic changes in students and faculty have influenced perceptions; however, because the correlations are weak and only modestly significant (as in the case of ethnicity) there’s no basis for making strong inferences.

As a predictor variable, students in online classes or receiving online instruction correlated negatively with all four dimensions of the CDQ. This could indicate that: (a) online student respondents perceived more confidence in the teacher’s ability; (b) online student respondents perceived more respect from their teachers; (c) online student respondents perceived more cohesion with other learners; and (d) online student respondents perceived they had more voice in the classroom than their White classmates. Based on this information, one could infer that the remedial online classroom is richer in classroom dynamics than the face-to-face classroom. The results suggest that, in general, the educational environment of remedial online classrooms is a healthy one, conducive to positive academic performance. These findings align with the previous research studies of Nuehauser (2002) and Sethna (2010) and are particularly intriguing because they attest to the potential strengths and reliability of classroom dynamics in online courses.

Identification with academics was the strongest explanatory predictor for each of the four dimensions and the CDQ-Composite. The students who gave a high rating to this subscale also indicated that academic pursuits, performance, and outcomes had a positive effect on their overall self-esteem. This finding reflects previous studies
maintaining that psychological variables, such as identification with academics and academic self-esteem, impact perceptions of classroom dynamics (Osborne, 1997; Steele, 1992, 1997). In light of the overwhelming percentage of minority respondents in this study (67%)—and considering that the “reference student” used in the regression model was African American—the concept of academic identification emerged as a potential contributor to the racial achievement gap (Osborne, 1999). Academic identification emphasizes factors that prevent students of color from viewing themselves as academically competent, producing numerous barriers to academic success. As Osborne’s (1999) studies indicated cultural and social barriers are potential contributors to the underachievement of African Americans, specifically males. Therefore, African-American males are sometimes discouraged and even prevented from incorporating education into their self-view, limiting their level of identification with academics. This particular research study did not specifically find African-American males did or did not have limited levels of identification with academics; however, future research involving this demographic and survey instrument is suggested.

**Congruence with Previous Studies**

As noted in Chapter 2, research has shown that demographic variables have little predictive power in determining classroom perceptions in traditional classes (Byrne, Hattie, and Fraser; 1986; Darkenwald, 1987; Fraser, 1986; Oliva, 2003; Thomas, 2004; Davis, 2006; Sethna, 2010). Similarly, the demographic variables of the current research study had little predictive power; however, correlations between age and ethnicity were present within all four dimensions, and age correlations were present within teacher respect and learner voice. In the present study, age and ethnicity contributed (though
modest) significantly to the variance in two dimensions of the CDQ. These findings somewhat vary from the conclusions of previous studies. Therefore, the need for further investigation examining the research population (remedial studies) and using the revised version of the CDQ and Identification with Academics scale is needed in order to gain a more accurate representation of the perceptions of classroom dynamics as classified by age, race, and gender.

This study, along with Sethna’s (2010) study, concluded that online classrooms are no less rich in classroom dynamics than traditional face-to-face classrooms. This finding is reflective of similar studies which looked at online student learning conditions and outcomes. Several studies concluded there is no significant difference found between student’s learning conditions in an online and face-to-face classroom (Johnson et al. (2000); Summers et al. (2005); Driscoll (2012). Additionally, few studies have concluded students in online learning conditions performed better than those receiving face-to-face instruction (Al-Hassan, 2009) while Neuhauser’s (2002) found online students rated their online courses as effective or more effective than their face-to-face counterparts. Thus, this study’s findings are supported by the current research literature.

**Implications for Practice**

The findings of the study showed significant but modest correlations between predictor and outcome variables for classroom dynamics in both the online and face-to-face delivery format. Yet, several implications can be drawn from this study as well as practical suggestions for adult education instructors, remedial education instructors, practitioners of community and technical colleges, developers of online educational software, and others involved in the development and implementation of academic
resources for the growing population of remedial education students. Some of these suggestions are outlined in the following section.

As suggested by the CDQ-Composite data, remedial students’ perceptions can initiate positive or negative outcomes, within both the online and face-to-face classroom environment. Therefore, it is imperative that all involved in adult education programs understand that remedial education students are typically underprepared when they enter postsecondary institutions. Remedial students enroll in postsecondary institutions for a variety of reasons, regardless of their previous educational experiences. Winston (1994) affirmed that a greater understanding of student perceptions can help substantially to improve instructional approaches as well as evaluate curricular techniques across interdisciplinary approaches. Therefore, academic strategies such as varied teaching approaches, activities to enhance learning interest and motivation, lessons designed to focus on meaningful instruction, and curriculum adaptation are ways to create or enhance positive outcomes. This study, through the CDQ-Composite dataset, addressed the basis of such strategies.

Since the study found no statistical significance in the influence of instructional delivery method, practical and applicable suggestions can be offered to both online and face-to-face remedial education instructors. Faculty and staff professional development is crucial for effectively serving the remedial student population. College presidents, administrators, and consulting firms should hire and provide faculty professional development services to remedial studies instructors, especially those teaching remedial coursework in an online delivery format. Outcomes of this effort should include:

- identifying students’ diverse learning needs as soon as possible;
• designing appropriate teaching plans to facilitate students’ most effective learning styles;
• providing clear instructions (e.g., syllabi, course objectives, common or course-specific postsecondary terminology);
• creating, facilitating, and encouraging active participation in in-class activities;
• adapting curricula; and
• showing concern for performance.

Faculty should also be encouraged to advocate for their own professional development by attending conferences, workshops, and seminars specific to the improvement of remedial education practices. A focus on faculty development is critical to the proliferation of students in today’s postsecondary institutions.

Remedial educators involved in creating online educational formats may not be fully aware of the role interpersonal dynamics play in online classes. Educators must understand the full scope and nature of online classroom dynamics, as well as how they can assist in creating more positive learning experiences for remedial studies students. This study suggests that remedial studies students do in fact respect their online instructors, have confidence in their teachers’ abilities, and, as their self-esteem increases, have a more favorable view of classroom dynamics. Therefore, educators must be able to translate, develop, and utilize positive and negative interpersonal dynamics in order to maximize learning outcomes, especially within the online instructional format.

The findings of this study have practical implications for all involved in the planning, teaching, and administration of online courses. By fostering an understanding
of how personal characteristics impact remedial education students, early-intervention methods can be imparted to educators who in turn can help identify students at risk for dropping out. Knowing the personal characteristics of students makes them more identifiable for programs that support student retention efforts. This is imperative for the proliferation of the postsecondary institution and the success of the student.

As Sethna (2010) concluded in his study of the online classroom dynamics of two-year college students:

For instructors teaching online courses, an awareness of the students’ personal characteristics requires more of an effort than is needed in a traditional face-to-face course. Because the instructor and students may never meet in person, it would benefit the instructor to do as much research as possible on the demographics of each student. (p. 104)

This study, along with Sethna’s (2010), identified predictor variables (i.e., age, ethnicity, and gender) that are easily accessible to online remedial education instructors through the use of institutional student databases. Access to this information provides instructors with appropriate personal identifiers to help assist in tailoring instruction specific to the needs of remedial students taking online courses. These predictor variables are just as easy to identify within the face-to-face classroom; therefore, tailored instruction and the identification of those students most at risk for dropping out are attainable outcomes.

**Suggestions for Future Research**

This study attempted to determine the nature of perceptions of classroom dynamics for students enrolled in both online and face-to-face courses, specifically remedial math, English, and reading. The study results suggest that psychological
variables were more predictive of student perceptions than less static variables, such as race and gender. Future research should include more social-psychological variables.

Because the online and face-to-face classes used the same instructional tools, another variable to consider relates to instructor characteristics. How content-knowledgeable is the instructor? How knowledgeable is he or she about current best practices in remedial education? Is he or she approachable? Flexible? How much time does the teacher invest in curricular preparation? Does the teacher have the appropriate professional development to be effective in his or her field?

Admittedly, the results of this study are narrow and are not indicative of all remedial students who enroll in online or face-to-face classes. Therefore, future research should continue to investigate the findings of this study or approach the results from a different perspective. The following are a few recommendations for future research:

1. This study employed a convenience sampling of students at two, two-year postsecondary institutions. Future research should include a replicate study using groups of remedial leaders from other two-year postsecondary institutions, both in-state and out-of-state.

2. This study included two dominating majority races: Caucasians and African Americans. Even though race did not impact perceptions of classroom dynamics, other ethnic minorities should be included in future studies in order to further generalize the statistical implications.

3. Demographic data of online and face-to-face instructors were not collected for this study. Ideally, future studies would capture this information in order to
determine if variables pertaining to teacher characteristics affect the perceptions of remedial studies students.

4. This study adhered strictly to a quantitative methodological approach. Yet, the inclusion of qualitative approaches could provide additional insights regarding classroom perceptions. Pairing quantitative and qualitative approaches could provide a unique contribution to future studies. Not only would this generate more complete data, but it could result in a broader range of potential applications.

5. Future research should explore other variables as predictors of classroom dynamics. One example would be the inclusion of student grade point averages (GPAs); this would serve as a fuller and broader differentiating demographic variable, helping potentially to ferret out what difference each variable makes in academic success.

6. In order to fully examine and explain the confidence students have in their instructors’ abilities, future studies should assess instructor characteristics, such as personality type and teaching styles. The examination of classroom characteristics could also provide deep insight into the impact of classroom dynamics on students’ perceptions of their instructors.

In summary, to increase the scope and explanatory power of future studies, additional data from students, instructors, and institutions need to be collected. These data could include more extensive institutional data, classroom descriptive variables, teacher’s perceptions, and student academic predictors.
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