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# Administrators' Perceptions Regarding Middle College/Early College Academic Support and Student Performance

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ADMINISTRATORS' PERCEPTIONS REGARDING MIDDLE  
COLLEGE/EARLY COLLEGE ACADEMIC SUPPORT  
STRATEGIES AND STUDENT PERFORMANCE

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A Dissertation  
Presented to  
the Graduate School of  
Clemson University

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In Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Philosophy  
Educational Leadership

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by  
Julie Anna Hartwell  
August 2009

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## ABSTRACT

The purpose of this study was to investigate administrators' perceptions regarding academic support strategies and the relationships between the academic support strategies and student performance measures in middle college/early college institutions. The predictor variables in this study were (a) location strategies, (b) partnership strategies, (c) teaching and learning strategies, (d) student assessment strategies, (e) student support strategies, (f) democratic school governance strategies, and (g) professional development strategies. The criterion variables in the study were 2007–2008 graduation rates and accumulated college credits. Descriptive statistics were used to report administrators' perceptions regarding occurrences of academic support strategies in their institutions. Pearson's product–moment correlation coefficients were used to describe relationships between (a) academic support strategies and graduation rates, (b) overall academic support strategies and graduation rates, (c) academic support strategies and accumulated college credits, and (d) overall academic support strategies and accumulated college credits.

A cross–sectional survey design and the *Middle College/Early College Academic Support Survey* were used to gather the perceptions of administrators regarding academic support strategies. Only administrators of diploma–granting institutions with a 2007–2008 graduation rate were invited to complete the web–based survey. In this study, 64 administrators completed the survey. The survey's response rate was 56%.

Findings from the study revealed that location, teaching and learning, assessment, democratic school governance and professional development strategies occurred *fairly*

*often* in the participants' institutions. Student support strategies occurred close to the survey response of *frequently, if not always* in the participants' institutions. Partnership strategies occurred closer to the survey response of *fairly often* in the participants' institutions.

Findings also revealed little if any correlation between the study's predictor and criterion variables. However, four statistically significant correlations were noted. A low negative correlation ( $r = -.383$ ,  $p < .01$ ) was noted between the occurrences of daily bell schedule adjustments when more instructional time was needed and graduation rates. Little if any correlation ( $r = -.254$ ,  $p < .05$ ) was noted between the occurrences of heterogeneously mixed high school classes by ability levels and graduation rates. A low, negative correlation ( $r = -.391$ ,  $p < .01$ ) was noted between the occurrences of aligned school/college bell schedules that facilitated enrollment in college courses and accumulated college credits. A low negative correlation ( $r = -.315$ ,  $p < .05$ ) was reported between the occurrences of students exhibiting subject mastery in ways besides paper and pencil tests and accumulated college credits. Recommendations for further research include increasing the sample size, and adding additional academic support strategies.

### *Key Terms*

Key terms in this study were academic support, accumulated college credits, at-risk student, dropout, dropout prevention program, graduation rate, middle college/early college, middle college/early college administrator, minority student, and underrepresented student groups.



## DEDICATION

This dissertation is dedicated to my Lord and Savior Jesus Christ whose grace, mercy, and loving kindness are present in every area of my life. I give all glory, honor, and praise to Him for this accomplishment.

I also dedicate this dissertation to the memory of my loved ones who celebrate with me in spirit: Joe and Louckriser Daniels, David and Blondie Hartwell, Arlee Ellen Divine Daniels Bookard, Joan Hartwell, Luceal Jamison Hartwell, Evelyn Jamison Nance, and Shirley Nordan Ellis.

Finally, I dedicate this dissertation to my loving, supportive, encouraging, strong, talented, intelligent, Christian parents Samuel and Lucille Daniels Hartwell. Although both of them are resting in Heaven, the memory of them comforted, strengthened, and encouraged me throughout this process. I know they are both so proud of me, and I did this to honor them. I love and miss both of them dearly.

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Special thanks go to Dr. Flanigan who guided me through the initial research phase of this study. He always encouraged me to apply theoretical lessons to practical educational leadership. Dr. Flanigan is a very special person who made me feel as though my ideas were valued and worthy.

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## CHAPTER ONE

### NATURE OF THE PROBLEM

#### Introduction

The middle college/early college concept purports to address the high school dropout phenomenon by academically engaging students who are at risk of dropping out in a blended secondary/collegiate institution that facilitates graduation and college enrollment (Bailey & Karp, 2003; Kisker, 2006; Lieberman, 1986, 1998; Wechsler, 2001). Middle college/early colleges are small, collaborative, student-centered institutions usually located on community/two-year college campuses (Middle College National Consortium [MCNC], 2001c). In middle colleges/early colleges, students complete high school graduation credits and earn college credits simultaneously through dual and concurrent enrollment. Institutional inclusion of grade levels 9–13 varies by institution. High school graduation rates and accumulated college credits traditionally measure middle college/early college student performance (Berger & Adelman, 2007; Cunningham & Wagonlander, 2000; Kim & Barnett, 2008; Lieberman, 2004; Martinez & Klopott, 2005). There are approximately 247 middle colleges/early colleges in the United States (Early College High School Initiative [ECHSI], 2001; MCNC, 2001).

A central component of middle college/early college design is student recruitment. Students are recruited from targeted demographic groups and provided academic support to improve academic performance and decrease local dropout rates (American Youth Policy Forum [AYPF], 2004; Lieberman, 2004; Martinez & Klopott, 2005; Wechsler, 2001). Demographic groups at the center of middle college/early college

recruitment efforts include ethnic and racial minorities, students from families with low socio-economic status (SES)/family income, and potential first-generation college students (Berger & Adelman, 2007; Born, 2006; Cunningham & Wagonlander, 2000; Jordan, Cavalluzzo, & Corallo, 2006; Kisker, 2006; Klekotka, 2005; Shirazi & French, 2005; Smerdon & Means, 2006; Spence & Barnett, 2008). Examples of academic support strategies in middle colleges/early colleges include small learning communities, tutoring, mentoring, parental/family involvement, academic coaches, late morning school start, internships, career preparation and reduced or free college tuition (Cunningham & Wagonlander, 2000; Gehring, 2001; Hoffman, 2003; Jordan et al., 2006; Lerner, 2007; Lords, 2000; MCNC, 2007; Newton, 2008; Prevatt & Kelly, 2003; Steinberg & Almeida, 2008; Wechsler, 2001; West, 1991). These academic support strategies are critical to student performance because targeted demographic groups historically post low secondary and postsecondary graduation rates and under perform nationally on student performance measures (Hoffman & Llagas, 2003; KewalRamani, Gilbertson, Fox, & Provasnik, 2007). While other dropout prevention frameworks share the middle college/early college focus on engaging these demographic groups to impact the drop out rate, the middle college/early college initiative provides a continuum of academic support designed to address the academic needs of these demographic groups (Lerner & Brand, 2006; MCNC, 2005a; Wechsler, 2001).

A suggested continuum of academic support strategies are articulated in the Middle College National Consortium Design Principles. These principles delineate academic support through administrative, instructional, and operational suggested

strategies. Six design principles frame a continuum of academic support strategies in the following areas: (a) power of the site (location and partnership), (b) teaching and learning, (c) student support, (d) student assessment, (e) democratic school governance, and (f) professional development. Inquiry-based instruction and assessment, secondary/collegiate data sharing, data-driven governance, data-driven professional development, instructional technology, and small class size are a few of the strategies suggested to support student performance in middle colleges/early colleges. Appendix A provides a copy of the Middle College National Consortium Design Principles.

### Statement of the Problem

A review of national data revealed that a consistently large number of students drop out of high school each year (Hoffman & Llagas, 2003; Kaufman, Alt, & Chapman, 2004; Laird, Cataldi, Kewal, Ramani, & Chapman, 2008; Laird, Kienzle, DeBell, & Chapman, 2007; National Center for Education Statistics [NCES] 2007; Ream & Rumberger, 2008; Snyder, Dillow, & Hoffman, 2008). The National Center for Education Statistics (NCES), in its annual *Dropout Rates in the United States* report, found that 414,000 students dropped out of grades 10–12 during the 2005–2006 school year (Laird, Cataldi, et al., 2008). This figure represented 25.3% of all students enrolled in grades 10–12 in the United States. The number of students exiting high school early in 1972 was 647,000 and the number of students exiting early in 2006 was 407,000. The decline in number of dropouts represented only a 37.09% decrease in the national dropout rate over a 34-year period (NCES, 2007). Even though some states realized a decrease in dropout

rates, dropout data revealed both trend resiliency and the need for interventions to reverse the trend (Laird, Cataldi, et al., 2008).

Further, the literature on dropout prevention indicated that certain demographic groups posted high dropout rates (Orfield, Losen, Wald, & Swanson, 2004; Seastrom, Hoffman, Chapman, & Stillwell, 2007; Snyder et al., 2008; Suh, Juh, & Houston, 2007). Minority students and students from families with low SES/family income dropped out of high school at rates twice as high as that of Caucasian students (NCES, 2007). Balfanz and Letgers' (2004) released the following findings from a study of dropout rates in selected public high schools:

1. Approximately 50% of African American students, 40% of Latino students, and 11% of White students attended schools with high dropout rates.
2. A predominately minority high school was five times more likely to have a low on-time graduation rate than a majority White school.
3. Poverty was a significant indicator of high schools with low graduation rates.

(p. 2)

The literature, however, indicated that students dropped out of high school for many reasons (Bridgeland, DiIulio, & Morison, 2006; Christle, Jolivette, & Nelson, 2007; Finn, 1989; Suh et al., 2007). Academic performance was a significant indicator of drop out likelihood (Hammond, Linton, Smink, & Drew, 2007; Jacob, 2001; Lee & Burkam, 2003; Lunenburg, 1999; Rumberger, 2004b). Other reasons for dropping out included parental disengagement, family relocation, divorce, dropouts in the immediate family, and enrollment in a General Education Degree (GED) certificate program (Born,

2006; Dynarski & Gleason, 2002; Loza, 2003; Lunenburg, 1999; Ream & Rumberger, 2008). School characteristics also affected drop out rates. Rumberger (2004b), in a study of two conceptual frameworks of drop out influences, noted that school-based factors of student composition, school resources, structural characteristics, and school processes/practices exerted significant influence on a student's decision to drop out (p. 140). Early adult responsibilities, school engagement, school behavior, and family background characteristics also significantly influenced a student's decision to drop out (Hammond et al., 2007).

The middle college/early college was one of many educational interventions that addressed dropout prevention. Literature on the middle college/early college asserted that enrollment in these institutions improved student performance and positively influenced a student's decision to stay in school (Cunningham & Wagonlander, 2000; Kim & Barnett, 2008; Lieberman, 2004; Spence & Barnett, 2007, 2008). Improved attendance, proficient or above scoring on state English and math academic assessments, participation and performance in college course work, and improved academic/career aspirations were noted in the literature as indicators of student performance (Berger & Adelman, 2007, Kim & Barnett, 2007, 2008; Spence & Barnett, 2008). Studies have not, however, investigated the link between middle college/early college program components and student performance.

Some researchers have noted that the program's glacial growth cycle contributed to a deficit of program research, including the link between program components and student performance. The American Institutes for Research (AIR) and Stanford Research

Institute (SRI) International conducted an evaluation of Early College High School Initiative sites and concluded that the paucity of available data was partly due to the relative youth of the program (Berger & Adelman, 2007). Many middle colleges/early colleges had not been in existence long enough to matriculate a class through the senior year. Moreover, grade level implementation within sites was often incremental, frequently beginning with a ninth grade cohort and adding one new grade level/cohort each year. This incremental addition of grade levels further hindered data availability, data collection, and research efforts.

While these factors affected the availability of data, sites established before 2005 have matriculated a cohort of students through the twelfth grade. The performance data produced by these middle colleges/early colleges has generated interest in the initiative and its outcomes (Bailey & Karp, 2003; Dynarski et al., 2008; Grier & Peterson, 2007; Goldberger & Haynes, 2005; Hoffman, 2006; Kisker, 2006; Lerner & Brand, 2006; Lords, 2000). This expressed discourse interest in investigating the middle college/early college structure and its student performance claims were catalysts for this study.

### Purpose of the Study

The purpose of this study was to investigate administrators' perceptions regarding academic support strategies and the relationships between the academic support strategies and student performance measures in middle college/early college institutions. The predictor variables in this study were (a) location strategies, (b) partnership strategies, (c) teaching and learning strategies, (d) student assessment strategies, (e) student support

strategies, (f) democratic school governance strategies, and (g) professional development strategies. The criterion variables in this study were 2007–2008 graduation rates and accumulated college credits. A survey instrument developed by the researcher, *Middle College/Early College Academic Support Survey*, was used to obtain data on academic support strategies in middle colleges/early colleges (Appendix B). Administrators were selected to respond to the survey because as leaders they had knowledge of multiple areas of school operations, including faculty interactions, professional development, college partner relationships, and curriculum and assessment (Day, Harris, & Hadfield, 2001; Nettles & Herrington, 2007; Waters, Marzano, & McNulty, 2003). Only diploma-granting public institutions identified as middle colleges/early colleges in the continental United States were included in this study.

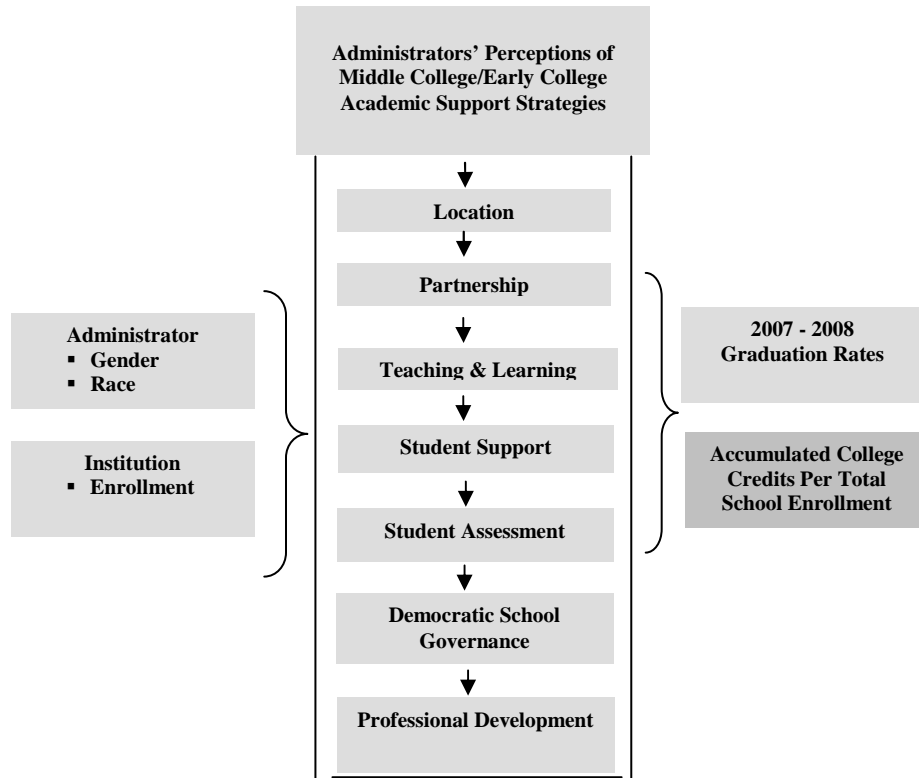
### Research Questions

The following research questions guided this study.

1. What are middle college/early college administrators' perceptions regarding occurrences of academic support strategies in their institutions?
2. Do relationships exist between administrators' perceptions regarding occurrences of academic support strategies and graduation rates?
3. Do relationships exist between administrators' perceptions regarding occurrences of academic support strategies and accumulated college credits?

## Conceptual Framework

In this study, the *Middle College/Early College Academic Support Survey* was used to collect data regarding academic support strategies. Figure 1 represents the conceptual framework for this research study.



*Figure 1*

*Conceptual Framework of the Study of Academic Support Strategies and Student Performance.*

The survey was used to collect the following individual and institutional demographic data: (a) administrators' gender, (b) administrators' race, (c) 2007–2008 total student enrollment, (d) 2007–2008 graduation rate, and (e) accumulated college credits. The survey consisted of seven variables representing academic support strategies:



(a) location strategies, (b) partnership strategies, (c) teaching and learning strategies, (d) student assessment strategies, (e) student support strategies, (f) democratic school governance strategies, and (g) professional development strategies. Graduation rates and accumulated college credits indicated student performance in the study.

### Research Methodology and Design

The research design selected for this study was a cross-sectional survey design. A cross-sectional survey design was selected because this study sought perceptions of administrators, required the collection of responses in a manner that facilitated data analysis, and ensured participant anonymity. The researcher also chose the cross-sectional survey design to facilitate descriptive and correlational analysis required to answer study research questions.

The study used the web-based, researcher-developed *Middle College/Early College Academic Support Survey* to collect data. The survey was reviewed by an expert group, pilot tested by middle college/early college administrators, and subjected to statistical analysis to confirm reliability. The *Middle College/Early College Academic Support Survey* was administered to purposively sampled middle college/early college administrators using *SurveyMonkey* online software. The survey's response rate was 56%.

## Definition of Terms

The following definitions provided clarifications and background information for the study.

*Academic support* represented a collection of processes and strategies provided to students to improve academic performance and facilitate transition from secondary to postsecondary education (Lerner & Brand, 2006).

*Accumulated college credits* represented the total number of college credits reported by administrators for the 2007–2008 cohort (Berger & Adelman, 2007; Kim & Barnett, 2008).

*At risk students* are those exhibiting characteristics noted in the literature as increasing the likelihood of dropping out of high school. Characteristics include low SES/family income, minority status, and first-generation college student status (Rumberger, 2004b). The phrase *at risk student* was used interchangeably with the phrase *student at risk of dropping out*.

*A dropout* is a student who exits high school between the start of one school year and the beginning of the next school year without earning a high school diploma or GED (Laird, Kienzel, et al., 2007).

*Dropout prevention programs* are those designed to retain students in high school until graduation or reduce the likelihood students drop out of high school (Prevatt & Kelly, 2003).

*Graduation rate* is the number of students in a cohort graduating from the 12<sup>th</sup> grade with a state issued high school diploma divided by the number of students who

enrolled as ninth graders in that same cohort. In this study, administrators self-reported institutional graduation rates.

*Middle college/early college* is a blended secondary/collegiate institution identified by the Middle College National Consortium, Gates Foundation, or State Departments of Education as middle college/early college institutions. These institutions award diplomas and focus on addressing the dropout phenomenon, improving secondary graduation rates, and increasing access to and performance in college for underrepresented student groups (Lieberman, 1986, 1998, 2004).

*Middle college/early college administrators* are the lead professionals responsible for school development, school budget, school personnel, curriculum and instruction, and constituent involvement.

*Minority students* belong to one of the following NCES racial/ethnic categories: African American, Hispanic, Asian/Pacific Islanders, American Indian, and Alaska Native (Laird, Kienzel, et al., 2007).

*Underrepresented student groups* referred to demographic groups in higher education with diminished enrollments compared to Caucasian student enrollments, including English as a Second or Other Language (ESOL) students, and students from families with low SES/family income (Laird, Kienzel, et al., 2007).

## Theoretical Framework

Laura Rendón's Validation Theory provided theoretical support to help explain the impact academic support has on at-risk student populations and student performance.

According to Rendòn (1994), validation supported and affirmed student academic efficacy through in-class and out-of-class actions that encouraged student persistence, academic performance, and interpersonal development. Rendòn noted that tutoring, mentoring, reflective instructional practice, supportive faculty, and inclusive campus culture decreased dropout likelihood and improved student academic performance.

### Delimitations

Several delimitations resulted from the use of a survey in this study. Topics included in the survey and forced-choice responses confined administrators' perceptions regarding academic support. Variables were identified from the Middle College National Consortium Design Principles and survey item topics were identified from academic support strategies provided in the Middle College National Consortium Design Principles and the literature review. The study was impacted by its small population. The study addressed diploma-granting, public middle colleges/early colleges identified through web listings from State Departments of Education, the Middle College National Consortium, the Gates Foundation, and a general web search. The study excluded private schools, non-diploma granting programs, and middle colleges/early colleges without 2007–2008 graduation data. Finally, graduation data and data on accumulated college credits were self-reported by participating administrators.

## Significance of the Study

This study extends the existing body of knowledge available on the middle college/early college initiative. Findings from the study provide stakeholders with additional information on practices used in middle colleges/early colleges. Moreover, middle college/early college developers may use the results of this study to improve services available to middle college/early college administrators and institutions. Development of instructional or technical assistance conferences, webcasts focused on specific middle college/early college academic support strategies, and policy statements by the Middle College National Consortium may result from the study's findings.

## Organization of the Study

Chapter One provides the introduction, the statement of the problem, the purpose of the study, the research questions, the conceptual framework, the definition of terms, the summary of research design and methodology, an overview of the theoretical framework, the delimitations of the study, and the significance of the study. Chapter Two provides a literature review related to middle college/early college academic support and student performance. Laura Rendón's Validation Theory offers theoretical support to explain the impact of academic support on at-risk student populations and student performance. Chapter Three provides a review of the study's research design and methods, including sampling, instrumentation, validity, reliability, data collection, and data analysis processes. Chapter Four provides data analysis associated with research questions one, two, and three. The data analysis includes both descriptive and

correlational techniques. Chapter Five presents a discussion of the study's findings, conclusions, limitations, general recommendations, and recommendations for future research.

## CHAPTER TWO

### LITERATURE REVIEW

Chapter Two provides a review of literature related to academic support strategies and student performance. The chapter begins with a review of student performance variables in the study and best practices for dropout prevention. Next, the chapter covers a discussion on academic support strategies used to address dropout prevention. The chapter concludes with a literature review of the Middle College National Consortium Design Principles and a review of Laura Rendón's (1994) Validation Theory.

#### Student Performance

Literature reviewed for this study revealed that graduation rates and accumulated college credits were commonly used by middle colleges/early colleges to measure student performance (Barnett, 2006; Kim & Barnett, 2008; Spence & Barnett, 2007). Both graduation rates and accumulated college credits were also noted as student performance measures in non-middle college/early college institutions and programs (Bailey & Karp, 2003; College Board, 2008; Lerner & Brand, 2006; National Dropout Prevention Center/Network, n.d.; Prevatt & Kelly, 2003).

#### *Graduation Rates*

A focus on the graduation rate was found to be central to the middle college/early college initiative because the expressed purpose of the structure is graduating students formerly at risk of dropping out (Lieberman, 2004; MCNC, 2001c; Wechsler, 2001).

Other dropout prevention programs also noted graduation rate as an indicator of student performance (Hammond et al., 2007; Jordan et al., 2006; Kisker, 2006). Swanson (2008), noted that “graduation rates were a prominent feature in the landscape of high school reform and within the larger world of educational policy” (p. 1).

A focus on graduation rates as a primary measure of student performance in secondary education was also noted in a review of federal and state legislation. The federal No Child Left Behind Act of 2001 highlighted graduation rates as one measure of assessing school effectiveness (Department of Education, 2008). Many states also used graduation rate as a measure of statewide accountability for student performance. South Carolina, for example, listed graduation rate as an accountability component on its annual school report cards (South Carolina Department of Education, n.d.).

### *Accumulated College Credits*

The literature also noted that students who accumulated college credits in high school performed well in the first year of college and were more likely to enroll in college and graduate than those who did not (Lerner & Brand, 2006). Dougherty, Mellor, and Jian (2006) noted that “one major strategy for increasing students’ college and workplace readiness was to enroll more students in advanced and college–preparatory courses in high school” (p. 2). Findings from the College Board’s (2008) *Fourth Annual Report to the Nation* revealed that students who participated in its college–level Advanced Placement (AP) courses “experienced greater academic success in college and improved graduation rates than their non–AP student peers” (p. 3). The College Board



(2004) released a report on the AP Program, which noted that students who participated in AP courses were more likely than non-AP students to graduate from college in four years or less. College placement personnel interviewed in the study also noted that participation in college-level courses while in high school allowed for a seamless transition into more rigorous sophomore-level courses upon college enrollment.

While the AP Program enrolled students with a history of advanced student performance, findings from middle college/early college transcript analysis also showed that participation in college courses increased the likelihood that students would enroll and perform well in college. The Middle College National Consortium in 2006–2007 reported that 63% of all students in its network met college entrance requirements and enrolled in college courses taught by college professors while still in high school (Kim & Barnett, 2008). Of these students, 92% received passing grades and 56% earned either an A or B in college courses. The Middle College National Consortium released similar statistics for its 2005–2006 cohort of students. Bailey and Karp (2003) stated “credit-based transition programs traditionally used to accelerate the progress of high-achieving college-bound youth have gained attention recently as a way to facilitate college access and success for middle- and even lower-performing students” (p. vii).

The American Youth and Policy Forum conducted a study of middle colleges/early colleges and used college credits earned during high school and secondary graduation rates as performance measures in the study (AYPF, 2004). Barnett (2006), Kim and Barnett (2008), and Klekotka (2005) also considered these performance variables in studies on the middle college/early college initiative. In general, evidence in

the literature supported the use of graduation rates and accumulated college credits as indicators of student performance.

### Dropout Prevention

Literature reviewed for this study revealed three themes in developing and sustaining successful dropout prevention programs. Academic support strategies, school membership, and postsecondary aspirations appeared in studies across grade levels, demographic groups, and reasons attributed to dropping out of school (Dynarski & Gleason, 2002; Rumberger, 2004b; Suh et al., 2007; Terry, 2008).

Academic support structures and practices appeared in many dropout prevention frameworks and impacted student efficacy and engagement (Hupfeld, n.d.; Janosz, Archambault, Morizot, & Pagani, 2008; Rendón, 1985, 1994, 2002; Wehlage & Rutter, 1986). Academic support strategies also served to improve student performance and encourage continuous enrollment (Bridgeland et al., 2006; Finn, 1989; Hammond, et al., 2007; Rumberger, 2004b). Academic support strategies referenced in dropout prevention research included tutoring, mentoring, frequent opportunities for success, test preparation, mixed ability classes, inquiry-based instruction, scaffolding, cooperative learning, academic summer camps, and positive reinforcement from adult advocates.

Goldberger and Haynes (2005) found that the California Academy of Liberal Studies Early College High School used academic support to improve student performance in college courses. Students participated in support classes with college and secondary teachers where “homework assistance, guidance on how to grapple with

difficult readings or concepts, and coaching on important research and study skills” were often covered” (p. 3). Students also participated in the host college’s tutorial offerings as a means of receiving additional academic support.

Studies also noted school membership as a common theme among dropout prevention programs. School membership, achieved through a sense of community among students, faculty, staff and administrators, was found to improve at-risk student performance and increase student motivation to graduate (Brown & Rivas, 1995; Janosz et al., 2008; Peck, Law, & Mills, 1987; Ream & Rumberger, 2008). Examples of strategies encouraging school membership or community included long-term adult mentors/advocates, participation in school decision making, summer and afternoon academic and social activities, high expectations of students from administrators and faculty, and a safe environment.

Peck, Law, and Mills (1987) offered a unique perspective on the importance of establishing a sense of community for students at risk of dropping out of school. Peck et al. stated the following:

The other key aspect of dropout prevention is promoting a sense of belonging. Children are vulnerable because they are children. They must initially depend on their parents to provide a nurturing atmosphere and to guide them in ways that are in their best interests....The next, most developmentally significant experience children have is in school. One of the most important aspects of their experience involves adults they can count on to provide a nurturing environment involving respect and genuine concern. (p. 22)

Terenzini et al. (1992) noted that a sense of community was paramount to success for underrepresented student groups because college often represented a break in social and cultural norms. The researchers suggested that a network of caring, available, committed advocates often facilitated the transition from high school to college for students.

A path to college coursework or career preparation was another common theme among successful dropout prevention programs (Fenske, Geranios, Keller, & Moore, 1997; Hugo, 2001; Jaloma & Rendòn, 2004; Kisker, 2006; Klekotka, 2005; Lieberman, 1986, 1998, 2004; Rendòn, Garcia, & Person, 2004). While postsecondary aspirations included student military or entrepreneurial aspirations, research reviewed for this study overwhelmingly noted either the integration of career preparation or college enrollment as common themes across successful dropout prevention programs. Postsecondary aspiration strategies included program location on a college campus, enrollment in introductory or career preparation courses, financial aid, parental involvement, improved academic performance, teacher professional development, and exposure to campus programming (Druian & Bulter, 1987; Fenske et al., 1997; Hugo, 2001; Kisker, 2006; Klekotka, 2005; Lieberman, 1986, 1998, 2004; Rendòn et al., 2004). Newton (2008), in a case study of the Georgia College Early College, found that new student orientations on the college campus, small advisory groups, mentoring, academic support, college identification cards, and exposure to college activities combined to direct student aspirations toward college or career preparation, and support continuous secondary enrollment.

In addition to the three dropout prevention themes noted in this review, other studies provided additional information on dropout prevention best practices. The National Dropout Prevention Center/Network (n.d.) provided 15 effective strategies on its website that the organization claimed reduced the drop out rate. The National Dropout Prevention Center asserted that “these strategies have been implemented successfully at all education levels and environments throughout the nation” (p. \*1). The following strategies were provided as dropout prevention best practice strategies.

1. Career and technology education,
2. School–community collaboration,
3. Safe learning environments,
4. Family engagement,
5. Early childhood education,
6. Early literacy development,
7. Mentoring/tutoring,
8. Service–learning,
9. Alternative schooling,
10. After–school opportunities,
11. Professional development,
12. Active learning,
13. Educational technology,
14. Individualized instruction, and
15. Systemic renewal. (p. \*1)

The literature also provided additional guidance for new and developing dropout prevention programs. Dynarski et al. (2008) published a guide for creating effective dropout prevention programs and listed six recommendations that should frame dropout prevention program implementation and development. Assigning adult advocates to each at-risk student, providing academic support and enrichment, offering behavioral interventions, creating student-centered learning environments, and providing rigorous, relevant instruction were listed as program characteristics central to reducing the dropout rate.

Jalomo and Rendón (2004), in a literature review of challenges faced by minority students transitioning to college, found that validation, participation in bridge programs, early outreach programs, and first-generation student programs positively impacted student performance and persistence to graduation. The authors also noted that students participating in these efforts posted high rates of college enrollment, graduation, and campus involvement. Examples of specific retention practices noted by Jalomo and Rendón included “early college awareness, summer bridge/readiness programs, parental involvement, basic skills instruction and tutoring, test preparation workshops, visits to colleges and universities, advanced placement testing preparation, and financial aid workshops” (p. 46).

West (1991) outlined several principles central to the creation of successful dropout prevention programs. Schools retaining students at risk of dropping out, West asserted, embodied the following characteristics.

1. They helped students feel as though they were valued and cared for members of an educational community,
2. They elicited from students a willingness to participate in the tasks of learning by presenting curriculum and instruction in ways that were extrinsically rewarding and intrinsically valuable, and
3. They provided teachers with a work environment in which they were encouraged to innovate, participate in the governance of their school, and interact with one another as supportive colleagues. (p. 61)

Moreover, West provided strategies to operationalize these principles. West advocated small school size, copious monitoring of student performance, program autonomy, collaborative administrative styles, career development/preparation, mentoring programs, tutoring, small group counseling sessions, parental involvement, and shared school governance to create an environment that would encourage persistence and graduation.

Hammond et al. (2007) conducted a literature review of studies on risk factors associated with dropping out and data-based dropout prevention programs. Hammond et al. found that successful dropout prevention programs addressed multiple domains associated with dropout prevention, accounted for academic support and student development, and used evidenced-based strategies for program evaluation. They also found that sites effective in replicating successful dropout prevention programs were required to implement the entire program as designed by the sponsoring organization. The investigators concluded that more studies with statistically significant findings

should be conducted on dropout prevention programs to reliably assess program outcomes.

Prevatt and Kelly (2003) conducted a literature review of dropout prevention program studies published between 1982 and 2002. The authors found that programs successfully addressing dropout prevention used an established framework to assist with replication and addressed academics in program design. They also found that programs with data to substantiate program impact involved multiple structural and student-oriented domains.

Peck et al. (1987) found that programs experiencing success in serving at-risk populations used more than one strategy and included multiple stakeholders in multiple areas of school operation. Common program attributes included an intense focus on the student, professional development for teachers and administrators in research-based instructional and counseling strategies for at risk students, continual engagement of parents in activities throughout the year, and a supportive, nurturing school climate.

### Academic Support Strategies

The literature review found that academic support strategies were both central to improving student performance and capable of increasing the likelihood that students persist until graduation (Bridgeland et al., 2006; Cunningham & Wagonlander, 2000; Grier & Peterson, 2007; Lieberman, 2004; Rendón, 1985, 1989, 1994, 2002; Rendon et al., 2004; Terenzini et al., 1992). Academic support strategies appeared in the literature review across dropout prevention program type, program duration, program foci, and



grade levels served. Bedsworth, Colby, and Doctor (2006), in a study of school support systems, found that helping students prepare for the academic rigors of enrollment was “the most effective means of increasing the odds that students graduate from high school ready for college, matriculate, and eventually receive their degrees” (p. \*3).

The Rennie Center (2009), in a study of 11 Massachusetts schools successful in reducing local dropout rates, highlighted the use of academic support strategies in schools with low numbers of dropouts. The study found that each school offered some form of academic support strategies among its targeted interventions. These academic support strategies included extra help and curriculum adjustments, credit recovery, and extra time devoted to academic offerings before, during, and after school. The authors noted the breadth of academic support offered across schools.

Three schools offer extra help opportunities during the school day and have developed extra courses in core subjects such as English and math for students who need extra help. At Somerset High, peer tutoring is available to students during the school day. As a district, Plymouth has made adjustments to seventh and eighth grade curriculum in reading and math in order to ensure that students are better prepared in high school. (p. 6)

Azinger (2000) found that academic support strategies in dual enrollment programs benefited both secondary and post secondary entities. Azinger concluded that program location on a college campus increased the likelihood students would enroll in college courses. The study also concluded that participation in dual credit courses on the college campus saved school districts the funding required to offer multiple sections of

courses to accommodate student enrollment. Moreover, exposure to college faculty and facilities exposed students to expertise and advanced technologies necessary for career preparation.

Huebner, Corbett, and Phillippo (2006) confirmed the necessity of academic support strategies in their study of seven New York middle colleges/early colleges. The authors found that academic support strategies were a necessary component in middle colleges/early colleges because students at risk of dropping out were often performing below grade level upon enrollment. Evidences of academic support strategies were present in each school and were cited by students as reasons for their improved performance in both secondary and postsecondary courses.

Bailey and Karp (2003), in a review of credit-based transition programs, found that academic support strategies offered in middle colleges/early colleges positively impacted graduation rates. They also found that academic support positively influenced student performance. The authors noted that middle college/early college students posted local achievement test scores greater than or equal to students in traditional high school settings. While middle college/early college program findings were favorable, Bailey and Karp suggested that more quantitative research studies were needed on credit-based transition program outcomes and structures. Suggestions included research on the size and characteristics of credit-based programs, processes that facilitate college enrollment and success for underperforming students, and program impact on student performance.

## Middle College National Consortium Design Principles

The Middle College National Consortium included academic support in its institutional implementation and development framework called the Middle College/Early College Design Principles (MCNC, 2007). Six Design Principles suggested a continuum of academic support in the following areas: (a) power of the site (location & partnership), (c) teaching and learning, (d) student support, (e) assessment, (f) democratic school governance, and (f) professional development. The Middle College National Consortium asserted that a continuum of academic support strategies aimed at addressing student academic needs improved student performance (Cunningham & Wagonlander, 2000; Wechsler, 2001). The Middle College National Consortium Design Principles were created to provide planners and administrators responsible for establishing and directing middle colleges/early colleges with a set of explicit strategies that described distinguishing features of middle colleges/early colleges, including academic support.

The Middle College National Consortium Design Principles were originally drafted in 1993 based on experiences and data from the first 20 middle college institutions (MCNC, 2001d). In 2004, the MCNC revised the document and incorporated elements of the Early College High School Initiative (ECHSI). The resultant Middle College National Consortium Design Principles guided the establishment and development of sites by describing expectations for school design and operation (MCNC, 2008a; Wechsler, 2001). Among its many subcomponents, the design principles articulated expectations for school location and collaboration, inquiry-based assessment and instruction, shared school governance, and high school/college academic support.

Academic support expectations in the location design principle included institution location on a college campus, alignment of high school and college calendars /schedules, and utilization of college campus services. Academic support expectations in the partnership design principle included communication between secondary and college instructors, engagement of parents, and the creation of a secondary/college student information system. Academic support expectations in the teaching and learning design principle included small class size, career preparation, student educational plans, and higher order thinking skills integrated into classroom activities. Academic support expectations in the student assessment design principle included the use of multiple assessments to determine mastery and the use of data to inform school-based decisions.

Academic support expectations in the student support design principle included small group advisory sessions, extended class periods, assistance for students enrolled in secondary and college courses, and mixed-ability grouping. The democratic school governance design principle included shared decision making and stakeholder participation on school committees as suggestions for academic support. The professional development design principle included established times for professional development, and the identification of professional development topics based on school and classroom data. The listing of these suggested academic support strategies in the Design Principles was intended to ensure that middle college/early college institutions provided the same types of academic support for students. Additional academic support strategies noted in studies of middle colleges/early colleges were the use of summer programs, team-

building activities, leadership events, learning labs, tutoring, mentoring, self–pacing, and career integration (Born, 2006; Grier & Peterson, 2007; Martinez & Klopott, 2005).

### Theoretical Framework

Laura Rendòn’s (1994) Validation Theory provided theoretical support to explain the impact academic support strategies have on students at risk of dropping out and student performance. Rendòn, a noted scholar of minority student access to and participation in higher education, developed Validation Theory out of a study she conducted with Patrick Terenzini et al. in 1992. The *Transition to College Project* investigated, through interviews with first–year students, how academic and social involvement impacted student learning (Terenzini et al., 1992). The study found that students at risk of dropping out shared the following characteristics.

1. Many students at risk of dropping out belonged to underrepresented demographic groups, including minority students and students from families with low SES/family income.
2. Students at risk of dropping out doubted their ability to succeed in college.
3. Students at risk of dropping out needed intervention to effectively navigate the collegiate environment.
4. Students at risk of dropping out needed to increase involvement in campus offerings to ensure persistence and performance in year one of enrollment, and
5. Students at risk of dropping out realized marked measures of success when exposed to validating in–class and out–of–class collegiate agents. (p. 61)

Further, Terenzini, et al. made the following statement in the summary report.

A number of the lower socioeconomic status students who had entered the two commuting institutions were consumed with self-doubt due to unconfirming experiences they had in high school. These experiences signal to students in various and subtle ways that they are not seen as serious or competent learners and, thus, are expected to fail. These experiences fail to “confirm” or “validate” the student as one capable of learning and deserving a place in a college classroom. (Terenzini et al., 1992, p. 47)

Rendòn used findings from the Terenzini et al. (1992) study and posited her own assertions about student populations at risk of dropping out and their academic performance. Rendòn asserted that validation was essential to students at risk of dropping out because, without intervention, they did not have the social and cultural capacity to navigate campus academic and social environments (Rendòn, 1995). Moreover, Rendòn asserted that students at risk of dropping out did not automatically seek involvement and therefore did not reap the retention and development benefits asserted by Astin’s Student Involvement Theory. The presence of validating actions, according to Rendòn, bridged the gap for students through an institutional commitment to engage, empower, and address the academic and involvement deficits presented by first-generation, low SES/family income, and minority students. Rendòn built upon her initial assertions and introduced Validation Theory to explain the influence of validating actions on students at risk of dropping out and their academic performance.

Validation Theory states that institutional efforts to support and affirm students through programming and personnel increase student retention, academic performance, and interpersonal development (Rendòn, 1994). According to Rendòn's theory, a systemic, validating culture (a) affirms student ability and worth, (b) praises and promotes student achievement and engagement, and (c) creates a connection to the institution that also increases the likelihood students will persist and graduate (Rendòn, 1995). Moreover, the involvement of teachers who (a) make learning rigorous and relevant, (b) provide early opportunities for success, and (c) demonstrate concern for students also increases the likelihood students will persist and graduate (Rendòn & Jalomo, 1995). Validation, according to the theory, ensures that students at risk of dropping out become a part of the learning environment, rather than challenged by it in the following ways:

1. Validation enables, confirms, and supports students through in-class and out-of-class agents that encourage and guide academic and interpersonal development.
2. The presence of validation makes students feel capable of learning.
3. Validation supports student development in ways similar to involvement.
4. Validation occurs both in and outside class.
5. Validation is a developmental process. The amount of validation experienced proportionally influences the collegiate, academic, and interpersonal experience.
6. Validation should be applied during the first year of college and early in subsequent semesters. (Rendòn, 1994)

Validation Theory is similar to other person–environment theories in that behavior stemming from validation or the lack of validation is a result of the interaction between the individual and the environment. According to Rendòn, institutions must “take an active role in fostering validation” (Rendòn, Jalomo, & Nora, 2002, p.147).

There were, however, critics who questioned the use of validation to improve persistence and performance. Jalomo and Rendòn (2004), in a phenomenological study of validation, noted one concern voiced by faculty in the study.

Some faculty and staff believe that validating actions coddle or spoon-feed students. They [faculty] believe that caring, support, and encouragement actually makes students weaker. However, validation is not about condescending to students or making them weaker or totally dependent on others. Special programs such as ...Advancement via Individual Determination (AVID) program, and California’s Puente Project are validation in action....When administered with respect and dignity for the student, validation has the effect of strengthening self-esteem and capacity to learn. Once students are validated, it becomes much easier for them to get involved on their own. (p. 43)

Nonetheless, research in the discourse supported Rendòn’s assertions regarding the impact of validation on student persistence and performance. Brown and Rivas (1995), in a study investigating challenges faced by minority students in the first year of college, echoed two of Rendòn’s assertions in Validation Theory. First, they found that students at risk of dropping out often doubted their place and potential in college. This finding was reported as follows.



Many students of color come to college with doubts about their ability to succeed based on their previous experiences in education. These students are often trapped in the entanglement of negative attributions, feelings, and expectations. (p. 124)

The authors also noted that despite these dispositions, the influence of caring, positive faculty and administrators, and the presence of programming aimed at connecting students to one another and the institution positively impacted persistence and performance.

Weissman, Bulakowski, and Jumisko (1998) conducted a comparative qualitative study on high school to college transitions for African American, Caucasian, and Hispanic students. Findings from the study showed that minority students were particularly vulnerable to feelings of isolation and an increased likelihood to dropout. However, when validating programs and validating personnel in the college helped students navigate campus systems, they were able to mitigate their own feelings of self-doubt, remain enrolled in college, and increase self-motivated persistence. Weissman et al. (1998) stated, “positive experiences both within and outside of the classroom enhanced their self-esteem, reinforced confidence in their academic abilities, and validated their knowledge and experiences” (p. 22).

The impact of validation on student performance and students at-risk of dropping out was also present in Wechsler’s (2001) text on the blended secondary/collegiate middle college/early college initiative. Wechsler, through an extensive literature review, noted that the middle college/early college structure changed the trajectory of students who were at risk of dropping out by placing them in small, collaborative, student-

centered environments where all adults served as student advocates. Teachers, administrators and college faculty involved in the middle college/early college program served as mentors and advisors, shadowed students in college courses, and encouraged college enrollment and persistence. The combination of these and other strategies reduced student academic anxiety, encouraged collegiate aspirations, increased attendance rates, increased graduation rates, and created a sense of community among learners. The benefits of validation reported in Wechsler's text reflected Rendòn's assertions regarding the impact of validation.

Rendòn has continued to advance her assertions regarding Validation Theory. In 2002, Rendòn conducted a study on Community College Puente, a secondary/postsecondary bridge program for Latino students at risk of dropping out. She found that validating practices and personnel in Community College Puente were responsible, in part, for high student performance results on state assessments, high attendance rates, and high rates of enrollment in 2-year and 4-year institutions. Rendòn attributed this success to the adults, not students, setting the bar for diploma/degree attainment and performance. Rendòn depicted Community College Puente's adult convictions for student success in the excerpt below.

Puente students benefit substantially from direct, sustained, and genuinely supportive, (not patronizing) academic and interpersonal validation. Puente staff have internalized the notion that they must take an active role to reach out to students and to help these students to believe that they can be valuable members of the college community of knowers. Rather than *cooling out* students by

diverting them away from high aspirations, Puente faculty and staff encourage and guide students toward furthering their education and setting their goals higher than what they think they should be....[Teachers] actively affirm the personal experience of the students, communicate that they are capable learners, and allow students to validate each other's work. (Rendòn, 2002, p. 663)

In 1995, Rendòn wrote a review of math and science intervention models designed to “increase the participation and achievement of Hispanics, women, minorities and disadvantaged students” (p. 1). Rendòn found that students who entered these programs improved academically, remained enrolled in school, and sustained an interest in math and science careers. Both students and teachers reported that the changes in students were indicative of the validating environment created by the institution's teachers and administrators. Rendòn (1995) also noted that “some of the most successful models had an organizational design involving collaborative partnerships between schools and colleges with support from business and industry” (p. 3).

### Chapter Summary

Chapter Two provided a review of literature related to academic support and student performance. The chapter began with a review of student performance measures used in the study and best practices for dropout prevention. Graduation rates and accumulated college credits were noted as frequently referenced measures of student performance. The literature revealed that effective drop out prevention programs used academic support strategies, school membership, and postsecondary aspirations to

decrease the likelihood that students drop out. In particular, the chapter covered literature on academic support strategies for students at risk of dropping out. Academic support strategies were noted across varying types of dropout prevention programs and included numerous strategies to improve academic performance and persistence. Chapter Two ended with a review of the Middle College National Design Principles and Laura Rendón's Validation Theory. The Middle College National Consortium Design Principles provided several academic support strategies per design principle. The Middle College National Consortium has asserted that strategies in the document should be integrated into all middle colleges/early colleges. Validation Theory asserted that supportive, enabling, validating practices, like academic support, decreased dropout likelihood and improved student academic performance.

## CHAPTER THREE

### METHODOLOGY

Chapter Three provides the research design, sampling, instrumentation, data collection, data analysis, and validity/reliability procedures used in this study. The purpose of this study was to investigate administrators' perceptions regarding academic support strategies and the relationships between the academic support strategies and student performance measures in middle college/early college institutions. The predictor variables in the study were (a) location strategies, (b) partnership strategies, (c) teaching and learning strategies, (d) student assessment strategies, (e) student support strategies, (f) democratic school governance strategies, and (g) professional development strategies. The criterion variables in the study were 2007–2008 graduation rates and accumulated college credits. A researcher–developed survey instrument, the *Middle College/Early College Academic Support Survey*, was used to collect demographic data and data on both the criterion and predictor variables (see Appendix B).

#### Research Design

The research design selected for this study was a cross–sectional survey design. Babbie (1990) noted that surveys collect data on perceptions, attitudes, and behaviors of participants at the time the survey is given. Babbie also noted that cross–sectional survey studies were particularly helpful in determining “relationships between variables” (p. 56). Patten (1998) asserted that surveys yielded responses that were easy to tabulate and analyze, and protected participant anonymity.

A cross-sectional survey design, therefore, was chosen because this study sought perceptions of administrators, required the collection of responses in a manner that facilitated data analysis, and provided safeguards for participant anonymity. The researcher also chose the cross-sectional survey design to facilitate descriptive data analysis required for research question one and the calculation of Pearson's product-moment coefficients used to answer research questions two and three.

### Research Questions

The following research questions guided this study.

1. What are middle college/early college administrators' perceptions regarding occurrences of academic support strategies in their institutions?
2. Do relationships exist between administrators' perceptions regarding occurrences of academic support strategies and graduation rates?
3. Do relationships exist between administrators' perceptions regarding occurrences of academic support strategies and accumulated college credits?

### Participants

Study participants were current administrators of public middle college/early college, diploma-granting institutions in the United States with 2007–2008 graduation data. For the purpose of this study, administrators were the lead professionals responsible for school development, school budget, school personnel, curriculum and instruction, and stakeholder involvement. A review of school websites identified administrators,

determined diploma–granting status, and confirmed the presence of 2007–2008 graduation data. One non–administrator, a Middle College National Consortium representative, was included in the expert review phase of the study.

There were, at the time of survey administration, 247 public middle colleges/early colleges in the United States. Administrators of public middle college/early college, diploma–granting institutions without 2007–2008 graduation data were not selected based on the criteria to participate in the study, but were purposively sampled to participate in the expert review and pilot study phases of the study. Administrators of public middle college/early college, diploma–granting institutions with 2007–2008 graduation data were purposively sampled to participate in the *Middle College/Early College Academic Support Survey*.

### Sampling

Purposive sampling procedures guided study participant selection. Babbie (1990) stated that purposive sampling selected participants based on pre–established characteristics deemed integral to the study. Gall, Gall, and Borg (2003) stated that purposive sampling procedures were feasible if targeted participants were easily identifiable (p. 178). Purposive sampling was, therefore, appropriate for this study because middle college/early college administrators had knowledge of study predictor and criterion variables. Purposive sampling was also appropriate because identification of administrators with knowledge of the study’s predictor and criterion variables was feasible.

A search of school listings found on United States State Departments of Education, Middle College National Consortium, and Gates Foundation websites was conducted to identify middle college/early college administrators. A general online search for middle colleges/early colleges yielded additional institutions and administrators. Each institution's website was reviewed to determine diploma-granting status and the presence of a 2007–2008 graduation rate.

At the time of this study, 137 participants met the definition of middle college/early college administrator included in this study and were invited to participate in the study. Of the 137 administrators invited to participate in the study, 23 either opted out or had undeliverable email addresses. Of the remaining 114 possible participants, 64 completed the *Middle College/Early College Academic Support Survey*. The survey's response rate was 56%. Based on Babbie's (1990) work that a response rate greater than 50% was adequate, the researcher determined a rate of 56% was acceptable for data analysis. To increase the survey's response rate, each nonrespondent received four follow-up reminders and a reminder phone call five days prior to the end of survey collection.

#### Instrumentation

The researcher developed the web-based *Middle College/Early College Academic Support Survey* using a questionnaire format. Researchers (Babbie, 1990; Thomas, 1998; Patten, 1998) advocated the use of a questionnaire format to allow for the expedient collection of a large amount of data in a convenient format for data analysis. The *Middle*



*College/Early College Academic Support Survey*, therefore, used a questionnaire format to efficiently collect and analyze study data. The questionnaire included a demographic section with five free–response items and an academic support section with 29 survey items. The demographic section included items regarding participant gender, participant race, total school enrollment, graduation rate, and accumulated college credits. The academic support section included items regarding the occurrences of academic support strategies in middle college/early college institutions.

The *Middle College/Early College Academic Support Survey* was developed based on the literature review and a review of the Middle College National Consortium Design Principles. Variables were identified from the Middle College National Consortium Design Principles. Survey item topics were identified from academic support strategies provided in the Middle College National Consortium Design Principles and the literature review. Academic support strategies in the Middle College National Consortium Design Principles were chosen because they provided a continuum of academic support strategies suggested specifically for middle colleges/early colleges (Lerner & Brand, 2006; MCNC, 2005a; Wechsler, 2001). Items in the survey’s academic support section used the following Likert–type responses: *not at all* (1), *once in a while* (2), *fairly often* (3), and *frequently, if not always* (4). The survey is provided in Appendix B.

Table 1 provides a display of survey items by survey predictor variables. Only items from the academic support section of the survey are included in Table 1.

Table 1

*Survey Items by Academic Support Strategies*

<b>Academic support strategies</b>	<b>Survey item number</b>
Location strategies	17, 29, 30, 33
Partnership strategies	18, 19, 24
Teaching and learning strategies	9, 10, 11, 12, 25, 32
Assessment strategies	13, 14, 15, 16
Student support strategies	6, 7, 8, 31, 34
Democratic school governance strategies	26, 27, 28
Professional development strategies	20, 21, 22, 23

The location strategies variable included four academic support strategies. One location strategy on the survey was *students use college campus services (i.e., tutoring, job placement, library, counseling, etc.)*. The partnership strategies variable included three academic support strategies. A partnership strategy on the survey was *teachers discuss student performance with college instructors*. The teaching and learning strategies variable included six academic support strategies. A strategy under this variable was *instruction on notetaking skills*. The assessment strategies variable included four academic support survey items. *Students exhibiting mastery in ways besides paper and pencil tests* is an example of an assessment strategy in the survey. The student support variable included five strategies, one of which was *extra help for students in high school courses*. The democratic school governance variable included three items. A strategy

under this variable was *students participate in school-level decision making*. The professional development variable included four survey items. A professional development strategy on the survey was *teachers receive training on how to provide academic supports in the classroom*.

Steps in developing the survey were based on procedures suggested by Dillman (2000) and Patten (1998). Dillman suggested using a questionnaire format, including a reward with the survey, linking objectives to issues important to the participant, and using follow-up reminders with an additional copy of the survey attached. Patten suggested the identification of survey objectives, the use of Likert-type items, the administration of a pilot test, the inclusion of a reward with the survey, and the distribution of follow-up notes upon survey completion.

Steps guiding the development of the web-based *Middle College/Early College Academic Support Survey* included the following:

1. Determined study research questions;
2. Conducted literature review on student performance, dropout prevention, academic support, and Validation Theory;
3. Used common themes found in the literature review and the Middle College National Consortium Design Principles to identify academic support variables and survey items;
4. Prepared a draft of the *Middle College/Early College Academic Support Survey* instrument;

5. Completed revisions suggested by the committee chairperson and dissertation committee;
6. Received approval from Clemson University's Institutional Review Board to begin the research study;
7. Transferred the approved survey into web-based SurveyMonkey software;
8. Invited experts (administrators and a Middle College National Consortium representative) to review the survey based on five provided questions;
9. Revised the *Middle College/Early College Academic Support Survey* instrument based on feedback from expert group participants;
10. Conducted a pilot test of the *Middle College/Early College Academic Support Survey* instrument; and
11. Completed data analysis on pilot survey data using *Statistical Package for the Social Sciences* (SPSS) 17.0 analysis software.

An expert group reviewed the first draft of the *Middle College/Early College Academic Support Survey*. Purposively sampled middle college/early college administrators of institutions without graduation data and a representative from the Middle College National Consortium served as this study's expert review group. Expert review group members provided feedback using five questions designed to assess survey validity.

1. Will middle college/early college administrators understand and answer the demographic and school data survey items you just experienced easily and accurately?

2. Will middle college/early college administrators understand and answer the academic support survey items you just experienced easily and accurately?
3. Did the items in this survey represent, in scope and content, academic supports offered in middle colleges/early colleges?
4. Did the response choices in the survey allow for a full range of response possibilities?
5. How can I improve this survey?

Responses to these prompts guided instrument revision and informed survey validity.

Three revisions resulted from expert review group feedback and an overall review of the survey instrument by a peer administrator and the researcher. The review of survey item 25 occurred because one expert group member was unsure if the bell schedule adjustment mentioned in item 25 referred to daily, weekly, monthly, or annual adjustments. To address this comment, the researcher inserted the phrase “daily bell schedule” into item 25. The researcher and a peer administrator conducted an overall review of the survey and added the adjective “high school” to differentiate between college courses and secondary courses in items 32 and 34. In total, three revisions occurred to three survey items as a result of feedback from the expert review, peer review, and researcher review.

Other comments made during the expert review phase did not affect instrument revision. One participant expressed concern about the alignment of response choices with survey items. Peer and researcher reviews confirmed the appropriateness of survey response options for survey questions. One participant suggested that the survey include a

component to address institutions that have not yet graduated a senior class. This suggestion was outside the framework of this study. Another participant suggested the inclusion of text boxes with survey items so that administrators could expound upon their responses. No revisions occurred because this study used a quantitative, cross-sectional survey design.

Comments from the expert review group on feedback questions two, three, and four informed survey validity. Participants responded favorably to question two when asked if administrators would be able to understand and answer all survey items easily. Participants responded favorably to question three when asked if the survey items represented academic support strategies offered in middle colleges/early colleges.

Next, the *Middle College/Early College Academic Support Survey* instrument was pilot tested by a purposively sampled group of middle college/early college administrators with no 2007–2008 graduation data. Seven of the forty invited participants completed and returned the pilot survey. Six (85.7%) pilot study participants were female and one (14.3%) participant was male. Of the seven participants, two (28.6%) were African American, three (42.9%) were Hispanic, and two (28.6%) were Asian.

The pilot study data underwent the same statistical tests targeted for study data analysis. Cronbach's alpha ( $\alpha$ ) assessed reliability. In the pilot study,  $\alpha = .761$  and on standardized items  $\alpha = .854$ . Descriptive statistics and correlational analysis conducted on pilot study data yielded no areas of concern. The final iteration of the survey instrument resulted in 5 demographic items and 29 academic support items. Appendix B

contains the final *Middle College/Early College Academic Support Survey* used in the study.

### Validity and Reliability

Feedback from the expert group reviews, peer reviews, dissertation committee reviews, and researcher reviews assessed survey validity. Babbie (1990) stated that validity established the extent to which the instrument “adequately reflected the real meaning of the concept under consideration” (p. 134). Questions two, three, and four of the expert group feedback form specifically addressed content validity because they assessed if the survey was clear, if the survey represented academic support in scope and content, and if the survey allowed for a full range of responses. Three revisions resulted from expert group feedback.

Cronbach’s alpha assessed survey reliability on both the pilot study and the *Middle College/Early College Academic Support Survey* data. Kerlinger and Lee (2000) stated that the use of Cronbach’s alpha was appropriate for studies with cross-sectional data and suited for instruments using Likert-type response options. Cronbach’s alpha for the *Middle College/Early College Academic Support Survey* was .854. Nunnally (1972) asserted that  $\alpha = .7$  or higher was acceptable for social sciences research.

Table 2 displays Cronbach’s alpha for academic support strategies. Table 2 also displays Cronbach’s alpha for overall academic support strategies.

Table 2

*Cronbach's Alpha for Academic Support Strategies and Overall Academic Support Strategies*

<b>Academic support strategies</b>	<b>Cronbach's alpha (<math>\alpha</math>)</b>
Location strategies	.608
Partnership strategies	.521
Teaching and learning strategies	.594
Assessment strategies	.659
Student support strategies	.533
Democratic school governance Strategies	.719
Professional development strategies	.857
Overall academic support strategies	.854

Cronbach's alpha for the location variable was .608. Cronbach's alpha for the partnership variable was .521. Cronbach's alpha for the teaching and learning variable was .594.

Cronbach's alpha for the assessment variable was .659. Cronbach's alpha for the student support variable was .533. Cronbach's alpha for the democratic school governance

variable was .719. Cronbach's alpha for the professional development variable was .734.

Cronbach's alpha for overall academic support strategies was .854.



## Data Collection

An *Application for Exemption Certification* submitted to Clemson University's Institutional Review Board (IRB) ensured compliance with regulations on studies involving the use of human subjects. Clemson University's IRB approved the research study on April 29, 2009. The researcher in this study protected the rights and welfare of all administrators and obtained informed consent from each participant. Each participant was given an identification number used in the data collection process to protect participant anonymity.

This study used the web-based SurveyMonkey software to administer the *Middle College/Early College Academic Support Survey*. Babbie (1990) and Colton and Covert (2000) asserted that follow-up reminders with copies of the instrument attached had a positive effect on survey response rate. To increase this survey's response rate, unresponsive participants received four follow-up reminders during the data collection period, each including a link to the online survey. Five days before the end of the data collection period, nonrespondents received a phone call reminding them of the survey's purpose and inviting them to complete the survey. As a result of these efforts, 64 out of 114 invited administrators returned and completed the survey. The survey's response rate was 56%.

Data collection included the self-reporting of demographic information in items one through five on the *Middle College/Early College Academic Support Survey*. Participants self-reported 2007–2008 graduation rates, total school enrollments,

accumulated college credits, participants' gender, and participants' race. Raw survey data and SPSS 17.0 outputs will be stored for five years and then erased.

### Data Analysis

SPSS 17.0 was used for statistical data analysis. Statistical significance values of  $p < .05$  and  $p < .01$  were used to reduce the likelihood of Type I error. According to Frankel and Wallen (2003), a significance value of  $p < .05$  meant there was no more than a 5% chance that a relationship noted between two variables occurred by chance. Similarly, a significance value of  $p < .01$  meant there was no more than a 1% chance that a relationship noted between two variables occurred by chance. Babbie (1990) stated that statistical significance "indicated the likelihood that the relationship observed between variables in a sample could be attributed to a sampling error" (p. 379). All statistically significant relationships were noted with an asterisk (\*) in study tables.

#### *Preliminary Data Analysis*

Prior to data analysis, three tests were conducted to assess data normality. First, a histogram was used to test if data graphically estimated the normal curve. The SPSS 17.0 graph output confirmed that the data estimated the normal curve. Next, a Kolmogorov–Smirnov test was conducted. Babbie stated that the Kolmogorov–Smirnov test verified if the study sample represented a normally distributed population by producing a significance value greater than the study's significance value (Babbie, 1990). In this study, the Kolmogorov–Smirnov significance value of .200 was greater than this study's

significance values of .05 and .01. This finding indicated data normality. Finally, a Q-Q-plot was created via SPSS 17.0. The data's Q-Q plot resembled a straight line further indicating data normality. The assumptions regarding normal distribution of this study's data were confirmed.

### *Statistical Data Analysis*

Statistical data analysis on demographic data included frequencies, and percentages. Research question one was answered using the (a) means and standard deviations for survey items representing academic support strategies, and (b) the means and standard deviations for overall academic support strategies scores. Research question two was answered by calculating Pearson's product-moment coefficients for (a) each survey item representing an academic support strategy and graduation rates, and (b) each overall academic support strategies variable and graduation rates. Research question three was answered by calculating Pearson's product-moment coefficients for (a) each survey item representing an academic support strategy and accumulated college credits, and (b) each overall academic support strategies variable and accumulated college credits. Gall, Gall, and Borg (2003) stated that Pearson's product-moment coefficient ( $r$ ) reported integers between a positive one and a negative one, with zero indicating no relationship. Gall et al. also noted that Pearson's product-moment coefficient described the linear relationship between two variables.

Correlation coefficients calculated for research questions two and three were interpreted using the framework provided by Henkl, Wiersma, and Jurs (1998) in Table 3. Both positive and negative correlations were interpreted using Table 3.

*Table 3*

*Pearson's Product–Moment Correlation Coefficient Interpretation*

<b>Correlation coefficient</b>	<b>Relationship interpretation</b>
.90 to 1.00 (-.90 to -1.00)	Very high positive (negative) correlation
.70 to .90 (-.70 to -.90)	High positive (negative) correlation
.50 to .70 (-.50 to -.70)	Moderate positive (negative) correlation
.30 to .50 (-.30 to -.50)	Low positive (negative) correlation
.00 to .30 (-.00 to -.30)	Little if any correlation

According to the authors, a correlation coefficient of  $r = .61$  would be interpreted as a moderate positive correlation between the two variables being studied. A correlation coefficient of  $r = -.04$  would be interpreted as little if any correlation between the two variables being studied

*Missing Data*

Analysis for research question three included responses from only 43 of the study's 64 participants. Twenty–one participants did not enter values for accumulated college credits. Therefore, values used to determine correlational analysis for (a) each

academic support survey item and accumulated college credits, and (b) each overall academic support strategies variable and accumulated college credits were based on only 43 participants' survey responses.

### Chapter Summary

Chapter Three presented a discussion of the cross-sectional survey design used in the study. Chapter Three also discussed study research design, participants, sampling, instrumentation, validity/reliability procedures and data collection procedures used in the study. The chapter ended with a discussion of preliminary data analysis and statistical data analysis used to answer the study's three research questions.

## CHAPTER FOUR

### FINDINGS

Chapter Four provides the study's research findings. Chapter Four begins with the presentation of descriptive data analysis to answer research question one. Chapter Four then presents correlational data analysis to answer research questions two and three. The chapter ends with a summary of the overall research findings.

The purpose of this study was to investigate administrators' perceptions regarding academic support strategies and the relationships between academic support strategies and student performance measures in middle college/early college institutions. The predictor variables in the study were (a) location strategies, (b) partnership strategies, (c) teaching and learning strategies, (d) student assessment strategies, (e) student support strategies, (f) democratic school governance strategies, and (g) professional development strategies. The criterion variables in the study were 2007–2008 graduation rates and accumulated college credits. A survey instrument developed by the researcher, *Middle College/Early College Academic Support Survey*, investigated academic support strategies in middle colleges/early colleges.

#### Demographic Data

Survey demographic data included administrators' gender and administrators' race. The survey also asked participants for 2007–2008 total school enrollments, 2007–2008 graduation rates, and accumulated college credits. These data were self-reported by participants.

### *Gender of Participating Administrators*

Table 4 displays participating administrators' gender by frequencies and percentages. Table 4 also displays the total number of survey participants.

*Table 4*

### *Gender of Participating Administrators*

<b>Gender</b>	<b>Frequency (N)</b>	<b>Percentage (%)</b>
Female	35	54.69
Male	29	45.31
Total	64	100.00

The majority of participants in the study were female ( $n = 35$ ). Females represented 54.69% of all participants. The total number of participants in the study was 64.

### *Race of Participating Administrators*

Table 5 displays participating administrators' race by frequencies and percentages. Racial categories reflect those used in NCES studies (Laird, Cataldi, et al., 2008; Laird, Kienzel, et al., 2007). Categories included in the survey's demographic section were African American, Asian, Caucasian, Hispanic, and Other.

Table 5

*Race of Participating Administrators*

<b>Race</b>	<b>Frequency (N)</b>	<b>Percentage (%)</b>
African American	13	20.31
Asian	1	1.56
Caucasian	36	56.25
Hispanic	11	17.19
Other	3	4.69
Total	64	100.00

The majority of the participants in the study were Caucasian. Caucasians represented 56.25% of the study's sample. African Americans represented 20.31% of the study's sample. Asian's were least represented in the study sample. Asian's accounted for 1.56% of study participants.

*2007–2008 Total Student Enrollment*

Table 6 displays participating administrators' 2007–2008 total student enrollment. The data are displayed by data range, frequencies, and percentages.



Table 6

2007–2008 Total Student Enrollment by Range

<b>2007–2008 total student enrollment</b>	<b>Frequency (N)</b>	<b>Percentage (%)</b>
0–99 students	10	15.63
100–199 students	20	31.25
200–299 students	14	21.88
300–399 students	9	14.06
400–499 students	7	10.94
500 or more students	4	6.25
Total	64	100.00

The participants were asked to enter their institution’s total student enrollment. The majority of middle colleges/early colleges represented in the study enrolled between 100–199 students (31.25%). The enrollment range that represented the second largest number of middle colleges/early colleges in the study was 200–299 (21.88%). The enrollment range that represented the smallest number of middle colleges/early colleges in the study was *500 or more students* (6.25%). Overall, the majority of the middle colleges/early colleges had enrollments under 299 students.

### *2007–2008 Graduation Rates*

Table 7 displays administrators' institutional graduation rates. The data are displayed by data range, frequencies, and percentages.

*Table 7*

#### *2007–2008 Graduation Rates by Range*

<b>2007–2008 graduation rate (%)</b>	<b>Frequency (N)</b>	<b>Percentage (%)</b>
60–69	1	1.56
70–79	7	10.94
80–89	13	20.31
90–100	43	67.19
Total	64	100.00

The majority of administrators in the study reported institutional graduation rates between 90–100 % ( $n = 43$ ). The next largest group of institutions reported graduation rates between 80–89% ( $n = 13$ ). The smallest number of institutions reported graduation rates between 60–69% ( $n = 1$ ). Overall, the majority of administrators reported graduation rates of 80% or higher.

#### *Average Number of Accumulated College Credits*

Table 8 displays the average number of college credits accumulated per enrolled student. The average number of accumulated college credits includes only 43 of the

study's 64 participants because 21 participants did not enter accumulated college credit data.

*Table 8*

*Average Number of Accumulated College Credits Per Enrolled Student*

<b>Total number of accumulated college credits</b>	<b>Total 2007–2008 student enrollment</b>	<b>Average number of college credits earned per student</b>
38464	9762	3.94

The average number of college credits earned per enrolled student was calculated by dividing the number of college credits reported by the total student enrollment. The average number of college credits earned by middle college/early college students, as reported by the administrators, was 3.94 credits.

*Summary of Demographic Data*

In general, administrators in this study were predominately female ( $n = 35$ ) and Caucasian ( $n = 36$ ). Most study administrators were employed in middle colleges/early colleges with enrollments between 100–199 students ( $n = 20$ ). Most administrators reported graduation rates between 90–100% ( $n = 43$ ). The average number of college credits per enrolled student was 3.94 credits.

## Research Question One

Research question one asked the following: What are middle college/early college administrators' perceptions regarding the occurrences of academic support strategies in their institutions? Research question one was answered by providing the (a) means and standard deviations for academic support strategies, and (b) the means and standard deviations for overall academic support strategies scores.

### *Location Strategies*

Table 9 provides the means (*M*) and standard deviations (*SD*) for location survey strategies in the survey. Table 9 also provides the mean (*M*) and standard deviation (*SD*) for the overall location strategies score.

*Table 9*

### *Means and Standard Deviations for Location Strategies*

<b>Location strategies</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Item 17	3.36	.74
Item 29	3.52	.71
Item 30	3.41	.81
Item 33	3.06	.75
Overall location strategies score	3.34	.61

The location strategy with the highest mean was noted in item 29 ( $M = 3.52$ ). Item 29 referenced the location strategy of *aligning school and college calendars to facilitate college course enrollment*. Administrators perceived the occurrences of this strategy close to the survey response of *frequently, if not always*. The location strategy with the lowest mean was noted in item 33 ( $M = 3.06$ ). Item 33 referenced the location strategy of *offering high school courses on a college campus*. Administrators perceived the occurrences of this strategy *once in a while*. The mean for the overall location strategies score ( $M = 3.34$ ) indicated that administrators perceived location strategies occurred *fairly often* in their institutions.

#### *Partnership Strategies*

Table 10 provides the means ( $M$ ) and standard deviations ( $SD$ ) for survey items under partnership strategies. Table 10 also provides the mean ( $M$ ) and standard deviation ( $SD$ ) for the overall partnership strategies score.

*Table 10*

#### *Means and Standard Deviations for Partnership Strategies*

<b>Partnership strategies</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Item 18	2.42	.77
Item 19	3.41	.58
Item 24	2.30	.74
Overall partnership strategies score	2.70	.61

The partnership strategy with the highest mean was item 19 ( $M = 3.41$ ). Item 19 referenced the partnership strategy of *teachers discussing student performance with parents*. Administrators perceived the occurrences of this strategy *fairly often* in their institutions. The partnership survey item with the lowest mean was item 24 ( $M = 2.30$ ). Item 24 addressed the partnership strategy of *businesses providing career opportunities for students*. Administrators perceived the occurrences of this strategy *once in a while* in their institutions. The mean for overall partnership strategies score ( $M = 2.70$ ) indicated that administrators reported partnership strategies occurred very close to the survey response of *fairly often*.

### *Teaching and Learning Strategies*

Table 11 displays the means ( $M$ ) and standard deviations ( $SD$ ) for all survey items referencing teaching and learning academic support strategies. Table 11 also displays the mean ( $M$ ) and standard deviation ( $SD$ ) for the overall teaching and learning strategies score.

Table 11

*Means and Standard Deviations for Teaching and Learning Strategies*

<b>Teaching and learning strategies</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Item 9	3.41	.79
Item 10	3.61	.55
Item 11	3.06	.71
Item 12	2.80	.61
Item 25	2.48	.75
Item 32	2.98	.67
Overall teaching and learning strategies score	3.12	.44

The teaching and learning academic support strategy with the highest mean was item 10 ( $M = 3.61$ ). Item 10 addressed the teaching and learning strategy of *integrating higher order thinking skills in instruction*. Administrators in this study perceived the occurrences of this strategy closer to the survey response of *frequently, if not always*. The teaching and learning survey item with the lowest mean was item 25 ( $M = 2.48$ ). Item 25 addressed the teaching and learning strategy of *adjusting the daily bell schedule when more instructional time was needed*. Administrators perceived the occurrences of this strategy *once in a while*. The mean for the overall teaching and learning strategies score ( $M = 3.12$ ) indicated that administrators perceived location strategies occurred *fairly often* in their institutions.

### *Student Support Strategies*

Table 12 provides the means (*M*) and standard deviations (*SD*) for survey items referencing student support strategies. Table 12 also provides the mean (*M*) and standard deviation (*SD*) for the overall student support strategies score.

*Table 12*

#### *Means and Standard Deviations for Student Support Strategies*

<b>Student support strategies</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Item 6	3.88	.33
Item 7	3.50	.78
Item 8	3.86	.56
Item 31	3.56	.73
Item 34	3.64	.76
Overall student support strategies score	3.73	.38

The highest mean noted among student support survey items was  $M = 3.88$  for item 6. Item 6 referenced the student support strategy of *providing extra help for students in high school courses*. Administrators perceived the occurrences of this strategy very close to the survey response of *frequently, if not always*. The lowest mean noted was  $M = 3.50$  for item 7. Item 7 referenced the student support strategy of *providing extra help for students enrolled in college courses*. Administrators perceived the occurrences of this strategy close to the survey response of *frequently, if not always*. The mean for the



overall student support strategies score ( $M = 3.73$ ) indicated that administrators perceived student support strategies occurred very close to the survey response of *frequently, if not always*.

### *Assessment Strategies*

Table 13 provides the means ( $M$ ) and standard deviations ( $SD$ ) for survey items under assessment strategies. Table 13 also provides the mean ( $M$ ) and standard deviation ( $SD$ ) for the overall assessment strategies score.

*Table 13*

*Means and Standard Deviations for Assessment Strategies*

<b>Assessment strategies</b>	<b><math>M</math></b>	<b><math>SD</math></b>
Item 13	3.58	.61
Item 14	2.66	.40
Item 15	3.23	.75
Item 16	3.44	.69
Overall assessment strategies score	3.23	.52

The assessment academic support strategy with the highest mean was noted for item 13 ( $M = 3.58$ ). Item 13 referenced the assessment strategy of *exhibiting subject mastery in ways besides paper and pencil tests*. Administrators perceived the occurrences of this strategy close to the survey response of *frequently, if not always*. The assessment survey

item with the lowest mean was item 14 ( $M = 2.66$ ). Item 14 referenced the assessment strategy of *retaking classroom tests for higher grades*. Administrators perceived the occurrences of this strategy closer to the survey response of *fairly often*. The mean for the overall assessment strategies score ( $M = 3.23$ ) indicated that administrators perceived assessment strategies occurred *fairly often* in their institutions.

#### *Democratic School Governance Strategies*

Table 14 provides the means ( $M$ ) and standard deviations ( $SD$ ) for democratic school governance survey items. Table 14 also provides the mean ( $M$ ) and standard deviation ( $SD$ ) for the overall democratic school governance strategies score.

*Table 14*

#### *Means and Standard Deviations for Democratic School Governance Strategies*

<b>Democratic school governance strategies</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Item 26	2.77	.77
Item 27	2.72	.77
Item 28	3.73	.45
Overall democratic school governance strategies score	3.07	.54

The democratic school governance strategy with the highest mean was noted in item 28 ( $M = 3.73$ ). Item 28 referenced the democratic school governance strategy of

using classroom and school data to inform school-level decision making. Administrators perceived the occurrences of this strategy very close to the survey response of *frequently, if not always*. The democratic school governance strategy with the lowest mean was represented by item 27 ( $M = 2.72$ ). Item 27 referenced the strategy of *student participation in school-level decision making*. Administrators perceived the occurrences of this strategy very close to the survey response of *fairly often*. The mean for the overall democratic school governance strategies score ( $M = 3.07$ ) indicated that administrators perceived democratic school governance strategies occurred *fairly often* in their institutions.

#### *Professional Development Strategies*

Table 15 provides the means ( $M$ ) and standard deviations ( $SD$ ) for professional development academic support strategies in the survey. Table 15 also provides the mean ( $M$ ) and standard deviation ( $SD$ ) for the overall professional development strategies score.

Table 15

*Means and Standard Deviations for Professional Development Strategies*

<b>Professional development strategies</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Item 20	3.28	.74
Item 21	2.91	.77
Item 22	3.14	.83
Item 23	3.31	.77
Overall professional development strategies score	3.16	.70

The highest mean noted was for professional development item 23 ( $M = 3.31$ ). Item 23 highlighted the professional development strategy of *providing teacher training on adapting instruction to meet student needs*. Administrators in the study perceived the occurrences of this strategy *fairly often*. The professional development survey item with the lowest mean was item 21 ( $M = 2.91$ ). Item 21 referenced the professional development strategy of *providing teacher training on developing student educational plans*. The administrators perceived the occurrences of this strategy very close to the survey response of *fairly often*. The mean for the overall professional development strategies score ( $M = 3.16$ ) indicated that administrators perceived professional development strategies occurred *fairly often* in their institutions.

### *Overall Academic Support Strategies*

Table 16 provides the means (*M*) and standard deviations (*SD*) for overall scores on the academic support strategies used in the study. Table 16 also provides the mean (*M*) and standard deviation (*SD*) for overall academic support.

*Table 16*

#### *Means and Standard Deviations for Academic Support Strategies*

<b>Academic support strategies</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Location strategies	3.34	.61
Partnership strategies	2.70	.61
Teaching and learning strategies	3.06	.49
Student support strategies	3.73	.39
Assessment strategies	3.23	.52
Democratic school governance strategies	3.07	.54
Professional development strategies	3.16	.69
Overall academic support	3.21	.35

The academic support strategy with the highest mean was student support strategies ( $M = 3.73$ ). The academic support strategy with the lowest mean was partnership strategies ( $M = 2.70$ ). The mean for overall academic support was  $M = 3.21$ . The

administrators perceived student support strategies as occurring *frequently, if not always* in their institutions.

### Research Question Two

Research question two asked the following: Do relationships exist between administrators' perceptions regarding the occurrences of academic support strategies and graduation rates? Research question two used Pearson's product-moment correlation coefficients to determine if relationships existed between (a) academic support strategies and graduation rates, and (b) overall academic support strategies variable scores and graduation rates. Pearson's product-moment correlation coefficients ( $r$ ) reported values between a positive one and a negative one, with zero indicating no relationship.

Correlation coefficients were interpreted using the framework provided by Henkl, Wiersma, and Jurs (1998) in Table 17. Both positive and negative correlations were interpreted using this framework.

Table 17

*Pearson's Product–Moment Correlation Coefficient Interpretation*

<b>Correlation coefficient</b>	<b>Relationship interpretation</b>
.90 to 1.00 (-.90 to -1.00)	Very high positive (negative) correlation
.70 to .90 (-.70 to -.90)	High positive (negative) correlation
.50 to .70 (-.50 to -.70)	Moderate positive (negative) correlation
.30 to .50 (-.30 to -.50)	Low positive (negative) correlation
.00 to .30 (-.00 to -.30)	Little if any correlation

This study used statistical significance values of  $p < .05$  and  $p < .01$  to reduce the likelihood of Type I error. Babbie (1990) stated that statistical significance “indicated the likelihood that the relationship observed between variables in a sample could be attributed to a sampling error” (p. 379). An asterisk (\*) denoted statistical significance in study tables.

*Location Strategies and Graduation Rates*

Table 18 provides the Pearson product–moment correlation coefficients ( $r$ ) and significance values for survey items in the location strategies variable and graduation rates. Table 18 also provides the Pearson product–moment correlation coefficient and significance value for overall location strategies and graduation rates.

Table 18

*Correlation Coefficients for Location Strategies and Graduation Rates*

Location strategies	<i>r</i>	Significance (2-tailed)
Item 17	.107	.400
Item 29	.043	.734
Item 30	-.177	.163
Item 33	.183	.147
Overall location strategies	.080	.531

\* $p < .05$  Correlation is significant at the .05 level (2-tailed).

\*\* $p < .01$  Correlation is significant at the .01 level (2-tailed).

The analysis revealed little if any correlation between perceptions of location strategies and graduation rates, and overall location strategies and graduation rates. Positive relationships were noted between item 17 (*student use of college services*) and graduation rates ( $r = .107$ ), item 29 (*aligning school and college calendars*) and graduation rates ( $r = .043$ ), and item 33 (*offering high school classes on a college campus*) and graduation rates ( $r = .183$ ). One negative relationship was reported between item 30 (*using the school bell schedule to facilitate enrollment in college courses*) and graduation rates. The  $r = -.177$  value indicated that little if any relationship existed between perceived occurrences of this strategy and graduation rates. The  $r = .080$  correlation coefficient for overall location strategies and graduation rates also indicated that little if any relationship existed between these variables.



*Partnership Strategies and Graduation Rates*

Table 19 provides the Pearson product–moment correlation coefficients ( $r$ ) and significance values for academic support strategies in the partnership variable and graduation rates. Table 19 also provides the Pearson product–moment correlation coefficient and significance value for overall partnership strategies and graduation rates.

*Table 19*

*Correlation Coefficients for Partnership Strategies and Graduation Rates*

<b>Partnership strategies</b>	<b><math>r</math></b>	<b>Significance (2-tailed)</b>
Item 18	-.010	.750
Item 19	.079	.536
Item 24	-.069	.586
Overall partnership strategies	-.014	.710

\* $p < .05$  Correlation is significant at the .05 level (2-tailed).

\*\* $p < .01$  Correlation is significant at the .01 level (2-tailed).

Analysis revealed little if any correlation between perceptions of partnership strategies and graduation rates, and overall partnership strategies and graduation rates. One positive relationship was noted between item 19 (*teachers discussing student performance with parents*) and graduation rates. The  $r = .079$  value indicated a weak positive relationship between perceived occurrences of this strategy and graduation rates. Two negative relationships were reported between item 18 (*teachers discussing student performance with college instructors*) and graduation rates ( $r = -.010$ ), and item 24 (*businesses*

providing student career opportunities) and graduation rates ( $r = -.010$ ). The relationship between overall partnership strategies and graduation rates was  $r = -.014$  and indicated a weak inverse relationship between the variables.

*Teaching and Learning Strategies and Graduation Rates*

Table 20 provides the Pearson product–moment correlation coefficients ( $r$ ) and significance values for teaching and learning strategies and graduation rates. Table 20 also provides the Pearson product–moment correlation coefficient and significance value for overall teaching and learning strategies and graduation rates.

Table 20

*Correlation Coefficients for Teaching and Learning Strategies and Graduation Rates*

<b>Teaching and learning strategies</b>	<b><math>r</math></b>	<b>Significance (2-tailed)</b>
Item 9	.032	.805
Item 10	-.027	.830
Item 11	-.063	.621
Item 12	.044	.730
Item 25	-.383**	.002
Item 32	-.054	.674
Overall teaching and learning strategies	-.155	.220

\* $p < .05$  Correlation is significant at the .05 level (2-tailed).

\*\* $p < .01$  Correlation is significant at the .01 level (2-tailed).

The analysis revealed one statistically significant relationship at the .01 level between item 25 and graduation rates ( $r = -.383$ ). Item 25 referenced the teaching and learning strategy of *daily bell schedule adjustments when more instructional time was needed*. The  $r$  value indicated a low negative correlation between perceived occurrences of this strategy and graduation rates. Weak positive relationships were noted between item 9 (*providing instruction on notetaking strategies*) and graduation rates ( $r = -.032$ ), and item 12 (*student participation in career activities*) and graduation rates ( $r = -.063$ ). Negative relationships were noted between item 10 (*integration of higher order thinking skills into instruction*) and graduation rates, and item 32 (*scheduling small class size*) and graduation rates ( $r = -.054$ ). The relationship between occurrences of overall teaching and learning strategies and graduation rates ( $r = -.155$ ) indicated an inverse relationship between these variables.

#### *Student Support Strategies and Graduation Rates*

Table 21 provides the Pearson product–moment correlation coefficients ( $r$ ) and significance values for survey items referencing student support strategies and graduation rates. Table 21 also provides the Pearson product–moment correlation coefficient and significance value for overall student support strategies and graduation rates.

Table 21

Correlation Coefficients for Student Support Strategies and Graduation Rates

Student support strategies	<i>r</i>	Significance (2-tailed)
Item 6	-.047	.711
Item 7	.108	.395
Item 8	-.008	.749
Item 31	-.147	.246
Item 34	.254*	.043
Overall student support strategies	.077	.543

\* $p < .05$  Correlation is significant at the .05 level (2-tailed).

\*\* $p < .01$  Correlation is significant at the .01 level (2-tailed).

The analysis revealed one statistically significant relationship at the .05 level between survey item 34 and graduation rates ( $r = .254$ ). Item 34 referenced the student support strategy of *heterogeneously mixing high school classes by ability levels*. The  $r$  value indicated little if any correlation between perceived occurrences of this strategy and graduation rates. Little if any correlation existed between item 7 (*providing extra help for students in college classes*) and graduation rates ( $r = .108$ ). Little if any correlation was also noted between item 6 (*providing extra help for students in high school classes*) and graduation rates ( $r = -.047$ ), item 8 (*providing free college tuition*) and graduation rates ( $r = -.008$ ), and item 31 (*small group advisory sessions for students*) and graduation rates ( $r = -.147$ ). The relationship between overall student support strategies and graduation

rates was weak ( $r = .077$ ) and indicated little if any correlation between perceived occurrences of student support strategies and graduation rates.

*Assessment Strategies and Graduation Rates*

Table 22 provides the Pearson product–moment correlation coefficients ( $r$ ) and significance values for academic support assessment strategies and graduation rates.

Table 22 also provides the Pearson product–moment correlation coefficient and significance value for overall assessment strategies and graduation rates.

*Table 22*

*Correlation Coefficients for Assessment Strategies and Graduation Rates*

<b>Assessment strategies</b>	<b><math>r</math></b>	<b>Significance (2-tailed)</b>
Item 13	-.023	.860
Item 14	-.101	.426
Item 15	-.027	.831
Item 16	.096	.453
Overall assessment strategies	-.028	.825

\* $p < .05$  Correlation is significant at the .05 level (2-tailed).

\*\* $p < .01$  Correlation is significant at the .01 level (2-tailed).

The analysis revealed little if any correlation between perceptions of assessment strategies and graduation rates, and overall assessment strategies and graduation rates.

One weak positive relationship was noted between item 16 and graduation rates

( $r = .096$ ). Item 16 referenced the assessment strategy of *providing instruction on test taking skills*. The  $r$  value indicated a positive direct relationship between perceived occurrences of this strategy and graduation rates. Three negative correlations were noted for item 13 (*exhibition of mastery in ways besides paper and pencil tests*) and graduation rates ( $r = -.023$ ), item 14 (*retaking classroom tests for a higher grade*) and graduation rates ( $r = -.101$ ), and item 15 (*providing instruction on self-assessing individual progress*) and graduation rates ( $r = -.027$ ). The  $r = -.028$  correlation coefficient revealed little if any relationship between perceived occurrences of overall assessment strategies and graduation rates.

#### *Democratic School Governance Strategies and Graduation Rates*

Table 23 provides the Pearson product–moment correlation coefficients ( $r$ ) and significance values for democratic school governance survey items and graduation rates. Table 23 also provides the Pearson product–moment correlation coefficient and significance value for overall democratic school governance strategies and graduation rates.

Table 23

*Correlation Coefficients for Democratic School Governance Strategies and Graduation Rates*

<b>Democratic school governance strategies</b>	<b><i>r</i></b>	<b>Significance (2-tailed)</b>
Item 26	-.164	.194
Item 27	-.039	.757
Item 28	-.140	.269
Overall democratic school governance strategies	-.135	.288

\* $p < .05$  Correlation is significant at the .05 level (2-tailed).

\*\* $p < .01$  Correlation is significant at the .01 level (2-tailed).

The analysis revealed little if any correlation between perceptions of democratic school governance strategies and graduation rates, and little if any correlation between overall democratic school governance strategies and graduation rates. Negative correlation coefficients were noted for item 26 (*student participation in school decision making*) and graduation rates ( $r = -.164$ ), item 27 (*parental participation in school decision making*) and graduation rates ( $r = -.039$ ), and item 28 (*administrative use of classroom and school data*) and graduation rates ( $r = -.140$ ). The relationship between overall democratic school governance strategies and graduation rates was weak ( $r = -.135$ ).

*Professional Development Strategies and Graduation Rates*

Table 24 provides the Pearson product–moment correlation coefficients ( $r$ ) and significance values for professional development survey items and graduation rates.

Table 24 also provides the Pearson product–moment correlation coefficient and significance value for overall professional development strategies and graduation rates.

Table 24

*Correlation Coefficients for Professional Development Strategies and Graduation Rates*

<b>Professional development strategies</b>	<b><math>r</math></b>	<b>Significance (2-tailed)</b>
Item 20	-.044	.729
Item 21	.069	.588
Item 22	.031	.809
Item 23	.173	.171
Overall professional development strategies	.069	.586

\* $p < .05$  Correlation is significant at the .05 level (2-tailed).

\*\* $p < .01$  Correlation is significant at the .01 level (2-tailed).

The analysis revealed little if any correlation between professional development survey items and graduation rates, and overall professional development strategies and graduation rates. One inverse relationship was noted between item 20 and graduation rates ( $r = -.044$ ). Item 20 referenced the professional development strategy of *offering teacher training on how to provide academic support in the classroom*. The  $r$  value



indicated little if any correlation between perceived occurrences of this strategy and graduation rates. Weak positive relationships were noted between item 21 (*providing training on developing student educational plans*) and graduation rates ( $r = .069$ ), item 22 (*providing training on using technology in the classroom*) and graduation rates ( $r = .031$ ), and item 23 (*providing teacher training on adapting instruction to meet student needs*) and graduation rates ( $r = .173$ ). The relationship between the overall professional development strategies and graduation rates was weak ( $r = .069$ ), and indicated little if any correlation between perceived occurrences of professional development strategies and graduation rates.

#### *Overall Academic Support Strategies and Graduation Rates*

Table 25 provides the Pearson product–moment correlation coefficients ( $r$ ) and significance values for all academic support strategies variables and graduation rates.

Table 25 also provides the Pearson product–moment correlation coefficient and significance value for overall academic support strategies and graduation rates.

Table 25

*Correlation Coefficients for Overall Academic Support Strategies and Graduation Rates*

<b>Overall academic support strategies</b>	<b>r</b>	<b>Significance (2-tailed)</b>
Location	.080	.531
Partnership	-.014	.710
Teaching and learning	-.155	.220
Student support	.077	.543
Assessment	-.028	.825
Democratic school governance	-.135	.288
Professional development	.069	.586
Overall academic support strategies	-.022	.865

\*p < .05 Correlation is significant at the .05 level (2-tailed).

\*\*p < .01 Correlation is significant at the .01 level (2-tailed).

The analysis revealed little if any relationship between academic support strategies and graduation rates. Weak positive relationships were noted between overall location strategies and graduation rates ( $r = .080$ ), overall student support strategies and graduation rates ( $r = .077$ ), and overall professional development strategies and graduation rates ( $r = .069$ ). Negative relationships were found between overall partnership strategies and graduation rates ( $r = -.014$ ), overall teaching and learning strategies and graduation rates ( $r = -.155$ ), overall assessment strategies and graduation rates ( $r = -.028$ ), and overall

democratic school governance strategies and graduation rates ( $r = -.135$ ). Little if any correlation was noted between overall academic support strategies and graduation rates.

### Research Question Three

Research question three asked the following: Do relationships exist between administrators' perceptions regarding the occurrences of academic support strategies and accumulated college credits? Pearson's product-moment correlation coefficients were used to determine if relationships existed between (a) academic support strategies and accumulated college credits, and (b) overall academic support strategies variable scores and accumulated college credits. Pearson's product-moment correlation coefficients ( $r$ ) reported values between a positive one and a negative one, with zero indicating no relationship. As stated earlier, the Pearson correlation coefficient interpretation framework presented by Henkl, Wiersma, and Jurs (1998) will be used to interpret the data. This study used statistical significance values of  $p < .05$  and  $p < .01$  to reduce the likelihood of Type I error.

Analysis for research question three included only 43 of the study's 64 participants because 21 participants did not enter values for accumulated college credits. All values used to determine Pearson's product-moment correlation coefficients involving accumulated college credits were calculated on 43 participants' survey responses.

*Location Strategies and Accumulated College Credits*

Table 26 provides Pearson product–moment correlation coefficients ( $r$ ) and significance values for academic support strategies referencing location and accumulated college credits. Table 26 also provides the Pearson product–moment correlation coefficient and significance value for overall location strategies and accumulated college credits.

*Table 26*

*Correlation Coefficients for Location Strategies and Accumulated College Credits*

<b>Location strategies</b>	<b><math>r</math></b>	<b>Significance (2-tailed)</b>
Item 17	.297	.053
Item 29	-.291	.059
Item 30	-.391**	.010
Item 33	.020	.899
Overall location strategies	-.117	.456

\* $p < .05$  Correlation is significant at the .05 level (2-tailed).

\*\* $p < .01$  Correlation is significant at the .01 level (2-tailed).

The analysis revealed one statistically significant relationship at the .01 level for item 30 and accumulated college credits ( $r = -.391$ ). Item 30 referenced the location strategy of *using the school bell schedule to facilitate enrollment in college courses*. The  $r$  value indicated that perceived occurrences of this strategy had little if any correlation with accumulated college credits. Weak positive relationships were noted between item 17

(*student use of college services*) and accumulated college credits ( $r = .297$ ), and item 33 (*offering high school classes on a college campus*) and accumulated college credits ( $r = .020$ ). One inverse relationship was noted between item 29 (*aligning school and college calendars to facilitate enrollment*) and accumulated college credits ( $r = -.291$ ). The  $r = -.117$  correlation coefficient for overall location strategies and graduation rates indicated that little if any relationship existed between the variables.

#### *Partnership Strategies and Accumulated College Credits*

Table 27 provides the Pearson product–moment correlation coefficients ( $r$ ) and significance values for survey items under partnership strategies and accumulated college credits. Table 27 also provides the Pearson product–moment correlation coefficient and significance value for overall partnership strategies and accumulated college credits.

*Table 27*

*Correlation Coefficients for Partnership Strategies and Accumulated College Credits*

<b>Partnership strategies</b>	<b><math>r</math></b>	<b>Significance (2-tailed)</b>
Item 18	.061	.695
Item 19	-.166	.288
Item 24	-.018	.911
Overall partnership strategies	-.031	.843

\* $p < .05$  Correlation is significant at the .05 level (2-tailed).

\*\* $p < .01$  Correlation is significant at the .01 level (2-tailed).

The analysis revealed little if any correlation between partnership strategies and accumulated college credits, and overall partnership strategies and accumulated college credits. One positive correlation coefficient was reported by item 18 and accumulated college credits ( $r = .061$ ). Item 18 referenced the partnership strategy of *teachers discussing student performance with college instructors*. The  $r$  value indicated that there was a weak positive relationship between perceived occurrences of this strategy and accumulated college credits. Two weak negative relationships were reported between item 19 (*teachers discussing student performance with parents*) and accumulated college credits ( $r = -.166$ ), and item 24 (*businesses providing student career opportunities*) and accumulated college credits ( $r = -.018$ ). The relationship between overall partnership strategies and accumulated college credits was weak ( $r = -.031$ ) and indicated little if any correlation between the variables.

#### *Teaching and Learning Strategies and Accumulated College Credits*

Table 28 provides Pearson product–moment correlation coefficients ( $r$ ) and significance values for survey items in the teaching and learning strategies variable and accumulated college credits. Table 28 also provides the Pearson product–moment correlation coefficient and significance value for overall teaching and learning strategies and accumulated college credits.

Table 28

*Correlation Coefficients for Teaching and Learning Strategies and Accumulated College Credits*

<b>Teaching and learning strategies</b>	<b><i>r</i></b>	<b>Significance (2-tailed)</b>
Item 9	.097	.535
Item 10	-.211	.175
Item 11	.151	.333
Item 12	-.075	.633
Item 25	-.215	.166
Item 32	.014	.930
Overall teaching and learning strategies	-.074	.638

\* $p < .05$  Correlation is significant at the .05 level (2-tailed).

\*\* $p < .01$  Correlation is significant at the .01 level (2-tailed).

The analysis revealed little if any correlation between teaching and learning strategies and accumulated college credits, and overall teaching and learning strategies and accumulated college credits. Three positive correlations were reported for item 9 (*instruction on notetaking strategies*) and accumulated college credits ( $r = .097$ ), item 11 (*integrating career exploration into coursework*) and accumulated college credits ( $r = .151$ ), and item 32 (*scheduling small class size*) and accumulated college credits ( $r = .014$ ). Three negative correlations were also reported for item 10 (*integration of higher order thinking skills into instruction*) and accumulated college credits ( $r = -.211$ ),

item 12 (*student participation in career activities*) and accumulated college credits ( $r = -.075$ ), and item 25 (*adjusting the daily bell schedule when more instructional time was needed*) and accumulated college credits ( $r = -.215$ ). The relationship between overall teaching and learning strategies and accumulated college credits was weak ( $r = -.074$ ), and indicated little if any correlation between perceived occurrences of teaching and learning strategies and accumulated college credits.

#### *Student Support Strategies and Accumulated College Credits*

Table 29 provides the Pearson product–moment correlation coefficients ( $r$ ) and significance values for survey items referencing student support strategies and accumulated college credits. Table 29 also provides the Pearson product–moment correlation coefficient and significance value for overall student support strategies and accumulated college credits.



Table 29

*Correlation Coefficients for Student Support Strategies and Accumulated College Credits*

<b>Student support strategies</b>	<b><i>r</i></b>	<b>Significance (2-tailed)</b>
Item 6	-.036	.819
Item 7	.230	.137
Item 8	.119	.449
Item 31	.107	.493
Item 34	.040	.800
Overall student support strategies	.162	.298

\*p < .05 Correlation is significant at the .05 level (2-tailed).

\*\*p < .01 Correlation is significant at the .01 level (2-tailed).

The analysis reported little if any correlation between student support strategies and accumulated college credits, and overall student support strategies and accumulated college credits. Weak positive relationships were noted between item 7 (*providing extra help for students enrolled in college courses*) and accumulated college credits ( $r = .230$ ), item 8 (*providing free college tuition*) and accumulated college credits ( $r = .119$ ), item 31 (*small group advisory sessions for students*) and accumulated college credits ( $r = .107$ ), and item 34 (*heterogeneously mixing high school classes by ability levels*) and accumulated college credits ( $r = .040$ ). One negative relationship was noted between item 6 and accumulated college credits. The  $r = -.036$  value indicated that little if any correlation existed between perceived occurrences of this strategy and accumulated

college credits. The correlation coefficient for overall student support strategies and accumulated college credits ( $r = .162$ ) also indicated little if any relationship between these variables.

*Assessment Strategies and Accumulated College Credits*

Table 30 provides the Pearson product–moment correlation coefficients ( $r$ ) and significance values for items in the assessment strategies variable and accumulated college credits. Table 30 also provides the Pearson product–moment correlation coefficient and significance value for overall assessment strategies and accumulated college credits.

*Table 30*

*Correlation Coefficients for Assessment Strategies and Accumulated College Credits*

<b>Assessment strategies</b>	<b><math>r</math></b>	<b>Significance (2-tailed)</b>
Item 13	-.315*	.040
Item 14	-.131	.401
Item 15	-.007	.963
Item 16	.136	.383
Overall assessment strategies	-.096	.540

\* $p < .05$  Correlation is significant at the .05 level (2-tailed).

\*\* $p < .01$  Correlation is significant at the .01 level (2-tailed).

The analysis revealed a statistically significant relationship at the .05 level between item 13 and accumulated college credits ( $r = -.315$ ). Item 13 referenced the student support strategy of *exhibiting subject mastery in ways besides paper and pencil tests*. The  $r$  value indicated a low negative correlation between perceived occurrences of this strategy and accumulated college credits. One weak positive relationship was noted between item 16 (*providing instruction on test taking skills*) and accumulated college credits ( $r = .096$ ). One weak negative relationship was noted between item 14 (*retaking classroom tests for a higher grade*) and accumulated college credits ( $r = -.131$ ). One very weak negative relationship was noted between item 15 (*providing instruction on self-assessing individual progress*) and accumulated college credits ( $r = -.007$ ). The relationship between overall assessment strategies and accumulated college credits ( $r = -.096$ ) indicated little if any relationship between the variables.

#### *Democratic School Governance Strategies and Accumulated College Credits*

Table 31 provides the Pearson product–moment correlation coefficients ( $r$ ) and significance values for democratic school governance survey items and accumulated college credits. Table 31 also provides the Pearson product–moment correlation coefficient and significance value for overall democratic school governance strategies and accumulated college credits.

Table 31

*Correlation Coefficients for Democratic School Governance Strategies and Accumulated College Credits*

<b>Democratic school governance strategies</b>	<b><i>r</i></b>	<b>Significance (2-tailed)</b>
Item 26	-.074	.632
Item 27	-.183	.239
Item 28	.024	.879
Overall democratic school governance strategies	-.121	.438

\* $p < .05$  Correlation is significant at the .05 level (2-tailed).

\*\* $p < .01$  Correlation is significant at the .01 level (2-tailed).

Democratic school governance strategies were found to have little if any correlation to accumulated college credits. The correlation coefficient for the relationship between item 26 (*student participation in school decision making*) and accumulated college credits ( $r = -.074$ ) denoted little if any correlation between these variables. Similarly, little if any correlation was noted between item 27 (*parental participation in school-level decision making*) and accumulated college credits ( $r = -.183$ ). Although the correlation coefficient for item 28 (*using classroom and school data to inform school-level decision making*) and accumulated college credits was positive ( $r = .024$ ), it was very weak. The relationship between overall democratic school governance strategies and accumulated college credits was weak ( $r = -.121$ ) and indicated that perceived occurrences of

democratic school governance strategies had little if any correlation with accumulated college credits.

*Professional Development Strategies and Accumulated College Credits*

Table 32 provides the Pearson product–moment correlation coefficients ( $r$ ) and significance values for items in the professional development strategies variable and accumulated college credits. Table 32 also provides the Pearson product–moment correlation coefficient and significance value for overall professional development strategies and accumulated college credits.

*Table 32*

*Correlation Coefficients for Professional Development Strategies and Accumulated College Credits*

<b>Professional development strategies</b>	<b><math>r</math></b>	<b>Significance (2-tailed)</b>
Item 20	-.009	.956
Item 21	-.013	.932
Item 22	.233	.133
Item 23	.118	.451
Overall professional development strategies	.097	.538

\* $p < .05$  Correlation is significant at the .05 level (2-tailed).

\*\* $p < .01$  Correlation is significant at the .01 level (2-tailed).

The analysis revealed little if any correlation between professional development survey items and accumulated college credits, and overall professional development strategies and accumulated college credits. Two weak positive correlations were reported for item 22 (*providing teacher training on using technology in the classroom*) and accumulated college credits ( $r = .233$ ), and item 23 (*providing teacher training on adapting instruction to meet student needs*) and accumulated college credits ( $r = .118$ ). Two weak negative correlations were also reported for item 20 (*offering teacher training on how to provide academic support in the classroom*) and accumulated college credits ( $r = -.009$ ), and item 21 (*providing training on developing student educational plans*) and accumulated college credits ( $r = -.013$ ). The relationship between overall professional development strategies and accumulated college credits was also weak ( $r = .097$ ).

#### *Overall Academic Support Strategies and Accumulated College Credits*

Table 33 provides the Pearson product–moment coefficients ( $r$ ) and significance values for all academic support strategies variables and accumulated college credits.

Table 33 also provides the Pearson product–moment correlation coefficient and significance value for overall academic support strategies and accumulated college credits.

Table 33

*Correlation Coefficients for Academic Support Strategies and Accumulated College Credits*

<b>Academic support strategies</b>	<b><i>r</i></b>	<b>Significance (2-tailed)</b>
Location	-.117	.456
Partnership	-.031	.843
Teaching and learning	-.074	.638
Student support	.162	.298
Assessment	-.096	.540
Democratic school governance	-.121	.438
Professional development	.097	.538
Overall academic support strategies	.065	.662

\* $p < .05$  Correlation is significant at the .05 level (2-tailed).

\*\* $p < .01$  Correlation is significant at the .01 level (2-tailed).

The analysis revealed little if any correlation between academic support variables and accumulated college credits. Weak positive relationships were noted between student support and accumulated college credits ( $r = .162$ ), and professional development and accumulated college credits ( $r = .097$ ). Negative relationships were noted between location and accumulated college credits ( $r = -.117$ ), partnership and accumulated college credits ( $r = -.031$ ), teaching and learning and accumulated college credits ( $r = -.074$ ), assessment and accumulated college credits ( $r = -.096$ ), and democratic school

governance and accumulated college credits ( $r = -.121$ ). Little if any correlation was noted between overall academic support strategies and accumulated college credits ( $r = .065$ ).

### Chapter Summary

Participants in this study were predominately female ( $p = 54.69\%$ ) and Caucasian ( $p = 56.25\%$ ). Most study participants were employed in schools with enrollments between 100–199 students ( $p = 31.25\%$ ). Participants most often reported graduation rates between 90–100% ( $p = 67.19\%$ ). The average number of college credits earned per enrolled student was 3.94 credits.

Within each academic support variable, means and standard deviations represented administrators' perceptions regarding the occurrences of academic support strategies in their institutions. The academic support strategies perceived most often by administrators were (a) *aligning school and college calendars to facilitate college course enrollment* ( $M = 3.52$ ), (b) *teachers discussing student performance with parents* ( $M = 3.41$ ), (c) *integration of higher order thinking skills into instruction* ( $M = 3.61$ ), (d) *providing extra help for students in high school courses* ( $M = 3.88$ ), (e) *exhibiting subject mastery in ways besides paper and pencil tests* ( $M = 3.58$ ), (f) *using classroom and school data to inform school-level decision making* ( $M = 3.73$ ), and (g) *providing teacher training on adapting instruction to meet student needs* ( $M = 3.31$ ).

Analysis revealed little if any correlation between academic support variables and student performance variables. Two statistically significant relationships were, however, reported between item 25 and graduation rates, and item 34 and graduation rates. The



analysis revealed a statistically significant relationship at the .01 level between item 25 and graduation rates ( $r = -.383$ ). Item 25 referenced the teaching and learning strategy of *adjusting the daily bell schedule when more instructional time was needed*. The  $r$  value indicated that perceived occurrences of this strategy had a low correlation with graduation rates.

Another statistically significant relationship was noted at the .05 level between survey item 34 and graduation rates ( $r = .254$ ). Item 34 referenced the student support strategy of *heterogeneously mixing high school classes by ability levels*. The  $r$  value indicated that perceived occurrences of this strategy had little if any correlation with graduation rates.

Two statistically significant relationships were also reported between survey item 13 and accumulated college credits, and survey item 30 and accumulated college credits. The analysis revealed one statistically significant relationship at the .05 level between item 13 and accumulated college credits ( $r = -.315$ ). Item 13 referenced the student support strategy of *exhibition of subject mastery in ways besides paper and pencil tests*. The  $r$  value indicated little if any correlation between perceived occurrences of this strategy and accumulated college credits. The analysis revealed another statistically significant relationship at the .01 level between item 30 and accumulated college credits ( $r = -.391$ ). Item 30 referenced the location strategy of *using the school bell schedule to facilitate college course enrollment*. The  $r$  value indicated little if any correlation between perceived occurrences of this strategy and accumulated college credits.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Chapter Five begins with an overall summary of the study. The chapter continues with a discussion of study conclusions and limitations. Chapter Five ends with a discussion of general recommendations and recommendations for further research.

#### Study Summary

The purpose of this study was to investigate administrators' perceptions regarding academic support strategies and the relationships between academic support strategies and student performance measures in middle college/early college institutions. The predictor variables in the study were (a) location strategies, (b) partnership strategies, (c) teaching and learning strategies, (d) student assessment strategies, (e) student support strategies, (f) democratic school governance strategies, and (g) professional development strategies. The criterion variables in the study were 2007–2008 graduation rates and accumulated college credits. The following research questions guided the study:

1. What are middle college/early college administrators' perceptions regarding occurrences of academic support strategies in their institutions?
2. Do relationships exist between administrators' perceptions regarding occurrences of academic support strategies and graduation rates?
3. Do relationships exist between administrators' perceptions regarding occurrences of academic support strategies and accumulated college credits?

The study was conducted to address issues associated with the high school dropout phenomenon. The study also sought to investigate middle college/early college academic support assertions related to student performance and academic support.

The literature review found that graduation rates and accumulated college credits were often cited as measures of student performance. Graduation rates were also noted as components of state and federal accountability measures and widely accepted measures of secondary student performance. Secondary student enrollment in college courses, primarily associated with the College Board's AP Program, was found to positively impact high school and college graduation rates.

The literature review also provided study context. The literature revealed that effective dropout prevention programs used academic support, school membership, and student postsecondary aspiration to decrease the dropout rate. Studies noted the use of varying academic support strategies to improve student performance and encourage persistence to graduation. A review of the Middle College National Consortium's Design Principles provided a continuum of academic support strategies to increase graduation rates and to encourage the accumulation of college credits. Laura Rendón's Validation Theory (1994) provided additional study context by explaining the impact validating practices had on student performance and persistence to graduation.

This study used a cross-sectional survey design to collect demographic and academic support data from purposively sampled administrators of public, diploma-granting middle college/early college institutions. The *Middle College/Early College Academic Support Survey* instrument was developed based on procedures by Dillman

(2000) and Patten (1998). The content of the survey focused on academic support strategies noted in the literature review as positively affecting the dropout phenomenon. Survey content also reflected academic support strategies included in the Middle College National Consortium Design Principles. Academic support variables were based on the six categories found in the Middle College National Consortium Design Principles. Expert group review, peer review, and dissertation committee review confirmed study validity. Cronbach's alpha on pilot study data and survey data confirmed study reliability. Cronbach's alpha for study data was .854.

There were 64 participants in the study. Participants were predominately female (54.69%) and Caucasian (56.25%). Most study participants were employed in schools with enrollments between 100–199 students (31.25%). The majority of participants reported graduation rates between 90%–100% (67.19%).

Descriptive analysis on each academic support item in the survey answered research question one. The location academic support strategy perceived most often by administrators was the *alignment of school and college calendars to facilitate course enrollment* ( $M = 3.52$ ). The partnership academic support strategy perceived most often by administrators was *teachers discussing student performance with parents* ( $M = 3.41$ ). The teaching and learning academic support strategy perceived most often by administrators was the *integration of higher order thinking skills into instruction* ( $M = 3.61$ ). The student support strategy perceived most often by administrators was *providing extra help for students in high school courses* ( $M = 3.88$ ). The assessment academic support strategy perceived most often by administrators was the *exhibition of*

*subject mastery in ways besides paper and pencil tests* ( $M = 3.58$ ). The democratic school governance academic support strategy perceived most often by administrators was *using classroom and school data to inform school decisions* ( $M = 3.73$ ). The professional development academic support strategy perceived most often by administrators was *teacher training on adapting instruction to meet student needs* ( $M = 3.31$ ).

Correlational analysis revealed little if any relationship between academic support survey items and graduation rates. However, two statistically significant relationships were reported between academic support items and graduation rates. A statistically significant relationship was noted at the .01 level between item 25 and graduation rates ( $r = -.383$ ). Item 25 referenced the teaching and learning strategy of *adjusting the daily bell schedule when more instructional time was needed*. The  $r$  value indicated a low negative correlation between perceived occurrences of this strategy and graduation rates.

The analysis revealed another statistically significant relationship at the .05 level between item 34 and graduation rates ( $r = .254$ ). Item 34 referenced the student support strategy of *heterogeneously mixing high school classes by ability levels*. The  $r$  value indicated little if any correlation between perceived occurrences of this strategy and graduation rates.

Two statistically significant relationships between academic support strategies and accumulated college credits were also reported. A statistically significant relationship at the .05 level was noted between item 13 and accumulated college credits ( $r = -.315$ ). Item 13 referenced the student support strategy of *exhibition of subject mastery in ways besides paper and pencil tests*. The  $r$  value indicated a low negative relationship between

perceived occurrences of this strategy and accumulated college credits. The analysis revealed another statistically significant relationship at the .01 level between item 30 and accumulated college credits ( $r = -.391$ ). Item 30 referenced the location strategy of *using the school bell schedule to facilitate student enrollment in college courses*. The  $r$  value also indicated a low negative relationship between perceived occurrences of this strategy and accumulated college credits.

### Conclusions

This research study offers 27 research study conclusions. These conclusions are based on *Middle College/Early College Academic Support Survey* data analysis. Conclusions are provided for student performance variables, and study research questions.

*Conclusion 1: The majority of administrators in the study reported graduation rates from 90–100%.*

Most participating administrators reported institutional graduation rates between 90%–100%. The most recent data available to provide context for this conclusion is NCES' (2007) averaged freshman graduation rate. The averaged freshman graduation rate is the percentage of students who start school in August of their 9<sup>th</sup> grade year and graduate four years later with a high school diploma (NCES, 2007). In 2005–2006 NCES reported that the national averaged freshman graduation rate was 73.4% (NCES, 2007).

*Conclusion 2: Middle college/early college administrators reported 38,464 accumulated college credits.*

Middle college/early college administrators reported 38,464 accumulated college credits. These data did not exceed the number of accumulated college credits most recently reported by the Middle College National Consortium (MCNC). In 2006–2007, the MCNC reported that students in its consortium of schools earned 49,787 credits during the 2006–2007 school year (Kim & Barnett, 2008).

#### *Research Question One*

Research question one sought to determine administrators' perceptions regarding the occurrences of academic support strategies in their institutions. Conclusions for research question one were based on findings reported in Chapter Four.

*Conclusion 3: Administrators perceived that location strategies occurred fairly often in their institutions.*

The overall mean response to survey items involving location strategies was  $M = 3.34$ . Administrators reported they *fairly often* noted the occurrences of strategies in this variable including *student use of college campus services, alignment of high school and college calendars to facilitate enrollment in college courses, alignment of high school and college schedules to facilitate enrollment in college courses, and offering high school courses on college campuses*. Berger & Adelman (2007) noted that most early college high schools were located on or near college campuses.

*Conclusion 4: Administrators perceived that partnership strategies occurred closer to the survey response of fairly often in their institutions.*

The overall mean response to survey items involving partnership strategies was  $M = 2.70$ . Lieberman (1998) stated that middle colleges/early colleges must work in concert with collegiate partners on issues regarding student performance, use of campus services, and program sustainability. Early collaboration between the partners during the planning phase, Lieberman noted, was critical to a successful partnership. The most frequently noted partnership strategy was *teachers discussing student performance with parents* ( $M = 3.41$ ). Dropout prevention literature noted that discussing student performance with parents was an effective strategy because students at risk of dropping out were most influenced by persons in their families and peer groups (Rumberger, 2004a).

*Conclusion 5: Administrators perceived that teaching and learning strategies occurred fairly often in their institutions.*

The overall mean response to survey items involving teaching and learning strategies was  $M = 3.12$ . Huebner, Corbett, and Phillippo (2006) noted that students in dropout prevention programs benefited from an instructional program that made learning relevant, offered challenging material, explored career opportunities, and provided a student-centered approach to learning. The Early College High School Initiative's (ECHSI) focus on rigorous instruction also supported this finding. The ECHSI asserted that a focus on teaching students how to synthesize, evaluate, and assess knowledge equipped them to handle challenging coursework in high school and college (Berger &



Adelman, 2007). Validation theory also encouraged the use of validating classroom practices like culturally relevant instruction, active engagement, and student projects/presentations to increase academic efficacy and improve student performance (Rendòn, 1994).

*Conclusion 6: Administrators perceived that student support occurred closer to the survey response of frequently, if not always in their institutions.*

The overall mean response to survey items involving student support strategies was  $M = 3.73$ . Jordan et al. (2006), in a case study of five middle colleges/early colleges, found that student support was prevalent in middle colleges/early colleges and offered in many forms. Student support was delivered through assistance classes offered during the school day, access to college labs and tutoring centers, and individualized academic support from middle college/early college teachers. A case study of Georgia Early College reported that students who received extra help in high school courses improved their performance on state mandated assessments (Newton, 2008). Extra help provided in the Georgia Early College included tutoring during and after school, mentoring, and career preparation. Other student support strategies noted in the literature review were the assignment of career mentors, the participation of students in study groups, and the annual review of student educational plans (Bailey & Karp, 2003; Barnett, 2006; Cunningham & Wagonlander, 2000; Grier & Peterson, 2007).

*Conclusion 7: Administrators perceived that assessment strategies occurred fairly often in their institutions.*

The overall mean response to survey items involving assessment strategies was

$M = 3.23$ . This finding is supported by theory. Validation Theory encouraged the use of alternate instructional and assessment activities to increase student motivation and provide opportunities for early academic success (Rendòn, 1994). Validation Theory asserted that students from underrepresented demographic groups needed to develop a sense of academic self-efficacy and see themselves as capable learners. Strategies that allowed students to display mastery in alternate ways, retake tests, and self-assess progress would accomplish this goal.

*Conclusion 8: Administrators perceived that democratic school governance strategies occurred fairly often in their institutions.*

The overall mean response to survey items involving democratic school governance strategies was  $M = 3.07$ . Rumberger (2004a) noted that successful dropout prevention programs developed relationships with parents that engaged them in multiple areas of school operation and in the academic performance of their student.

Administrators also noted they *fairly often* used classroom and school data to inform school decisions ( $M = 3.73$ ). Marsh, Pane, and Hamilton (2006), in a study of data driven decision making in education, noted that using data to guide school decisions “improved the success of students and schools” (p. 1).

*Conclusion 9: Administrators perceived that professional development strategies occurred fairly often in their institutions.*

The overall mean response to survey items involving professional development strategies was  $M = 3.16$ . Professional development was noted in dropout prevention literature as critical to ensuring that teachers meet student needs (West, 1991). A

professional development focus on adapting instruction to address student academic deficiencies was also supported by Validation Theory. Rendón (1994) stated that adjusting instruction to meet the needs of students was mandatory for teachers interacting with students from underrepresented demographic groups. The use of performance-based assessments, use of varying instructional techniques, and use of active engagement strategies were examples of adapting instruction to validate students and improve academic performance.

#### *Research Question Two*

Research question two sought to determine if relationships existed between administrators' perceptions regarding the occurrences of academic support strategies and graduation rates. Conclusions for research question two were based on study findings reported in Chapter Four.

*Conclusion 10: A very weak relationship existed between administrators' perceptions regarding the occurrences of location strategies and graduation rates.*

The Pearson correlation coefficient reported for the relationship between overall location strategies and graduation rates was  $r = .080$ . Literature reviewed for this study did not indicate that the use of college services, alignment of school/college calendars, and alignment of school/college schedules influenced secondary graduation rates. However, instruction of high school courses on college campuses was noted as a motivating factor for middle college/early college students to graduate from high school. Lerner and Brand (2006), in a case study of Middle College High School at San Joaquin

Delta College, found that location on the college campus was integral to the institution's success. The school's 2007–2008 graduation rate was 81%. Of the school's 2007 graduates, 39% enrolled in a 4-year college and 51% enrolled in a community college. Moreover, Klekotka (2005) noted "the campus location facilitated student access to the range of opportunities on campus, increased student motivation, and allowed students to accelerate their education" (p. 5).

*Conclusion 11: Little if any relationship existed between administrators' perceptions regarding the occurrences of partnership strategies and graduation rates.*

The Pearson correlation coefficient reported for the relationship between overall partnership strategies and graduation rates was  $r = -.014$ . Studies on reducing the dropout rate indicated that partnerships, particularly those involving parents, improved student academic performance and graduation rates (Hickman, Bartholomew, Mathwig, & Heinrich, 2008; Rumberger, 2004a; Rumberger & Larson, 1998). The impact of career training was also noted as positively impacting student persistence and graduation. Career and technology education courses, career mentoring, internships, and apprenticeships also served to encourage student persistence and secondary/postsecondary goal attainment (Barnett, 2006).

*Conclusion 12: A weak relationship existed between administrators' perceptions regarding the occurrences of teaching and learning strategies and graduation rates.*

The Pearson correlation coefficient reported for the relationship between overall teaching and learning strategies and graduation rates was  $r = -.155$ . The Early College High School Initiative (ECHSI) noted that its focus on rigorous and relevant instruction

positively impacted student persistence (Smerdon & Means, 2005). The Middle College National Consortium (MCNC) also asserted that the implementation of strategies included in the Middle College National Consortium Design Principles positively impacted graduation rates (AYPF, 2004; Born, 2006; Grier & Peterson, 2007; Hoffman, 2006; Lieberman, 1986, 1998, 2004). Newton (2008), noted that teaching and learning activities in the classroom prepared students for high school accountability exams, for graduation, and for the rigors of college instruction.

*Conclusion 13: A statistically significant relationship existed between the occurrences of daily bell schedule adjustments when more instructional time was needed and graduation rates.*

A statistically significant relationship at the .01 level was noted between the occurrences of *daily bell schedule adjustments when more instructional time was needed* and graduation rates ( $r = -.383$ ). The  $r$  value indicated a low negative correlation existed between the occurrences of *bell schedule adjustments when more instructional time was needed* and graduation rates. However, middle college/early college literature asserted that flexibility of school schedule and format allowed administrators to adjust school operation to fit student needs (Cunningham & Wagonlander, 2000; Grier & Peterson, 2007; Huebner et al., 2006; Kisker, 2006; Wechsler, 2001). Flexibility of program design and operation were found to positively impact student persistence to graduation (Kim & Barnett, 2008; Lieberman, 1986; Spence & Barnett, 2007, 2008). The negative  $r$  value may be influenced by the availability of middle college/early college academic support structures throughout the school day and after school. Case studies on the Georgia Middle

College, California Academy of Liberal Studies Early College High School, and Community College Puente all noted multiple options for additional time devoted to instruction/tutoring during class, after school and via college campus services (Goldberger & Haynes, 2005; Newton, 2008; Rendòn, 2002).

*Conclusion 14: A very weak relationship existed between administrators' perceptions regarding the occurrences of student support strategies and graduation rates.*

The Pearson correlation coefficient reported for the relationship between overall student support strategies and graduation rates was  $r = .077$ . Students traditionally recruited to middle colleges/early colleges were predominately underperforming or at risk of dropping out. Strategies to increase high school and college course performance, students taking college classes for free, small group advisory sessions, and heterogeneously mixed classes were noted in middle college/early college literature as strongly impacting student performance and graduation rates (Born, 2006; Cunningham & Wagonlander, 2000; Jordan et al., 2006; Lieberman, 1986, 1998; MCNC, 2001e, 2007; Newton, 2008; Wechsler, 2001).

*Conclusion 15: A statistically significant relationship existed between the occurrences of heterogeneously mixed high school classes by ability levels and graduation rates.*

A statistically significant relationship at the .05 level was noted between the occurrences of *heterogeneously mixed high school classes by ability levels* and graduation rates ( $r = .254$ ). The  $r$  value indicated a low relationship between perceived

occurrences of this strategy and graduation rates. Burris, Heubert, and Levin (2006) asserted that heterogeneous grouping increased student potential to deal with complex topics and disciplines. Burris et al. also noted that heterogeneously grouping students by ability level had a positive impact on student performance for both high and low achievers.

*Conclusion 16: A very weak relationship existed between administrators' perceptions regarding the occurrences of assessment strategies and graduation rates.*

The Pearson correlation coefficient reported for the relationship between overall assessment strategies and graduation rates was  $r = -.028$ . Students exhibiting mastery in ways besides paper and pencil tests, students re-taking tests for higher grades, students self-assessing their own progress, and instruction on test taking skills were examples of strategies used to support academic performance and increase graduation rates (Jordan et al., 2006; Klekotka, 2005; Knesting, 2008; Lerner & Brand, 2006; Newton, 2008).

*Conclusion 17: A weak relationship existed between administrators' perceptions regarding the occurrences of democratic school governance strategies and graduation rates.*

The Pearson correlation coefficient reported for the relationship between overall democratic school governance strategies and graduation rates was  $r = -.135$ . The  $r$  value indicated little if any correlation between the variables. Middle college/early college literature reviewed for this study did not address relationships between democratic school governance and graduation rates. The relationship between governance and student performance was, however, noted in educational research. Literature on administrator use

of data-driven decision making highlighted a positive relationship between data-driven decision making and student performance (Marsh, Pane, & Hamilton, 2006; Steinberg & Almeida, 2008).

*Conclusion 18: A weak relationship existed between administrators' perceptions regarding the occurrences of professional development academic support strategies and graduation rates.*

The Pearson correlation coefficient reported for the relationship between overall professional development strategies and graduation rates was  $r = .069$ . Marshall (1997) stated "the development of a high performing school required the staff to continually update their knowledge so they could competently engage in the essential processes of schooling (p. 150). One universal process in secondary education is preparing students for graduation. Professional development is essential to that goal (West, 1991).

### *Research Question Three*

Research question three sought to determine if relationships existed between administrators' perceptions regarding the occurrences of academic support strategies and accumulated college credits. Conclusions for research question three were based on findings presented in Chapter Four.

*Conclusion 19: A weak relationship existed between administrators' perceptions regarding the occurrences of location strategies and accumulated college credits.*

The Pearson correlation coefficient reported for the relationship between overall location strategies and accumulated college credits was  $r = -.117$ . Studies on the middle



college/early college initiative noted that location on the college campus facilitated the accumulation of college credits. The literature on middle colleges/early colleges also stated that proximity to college classrooms, access to college staff and resources, and alignment of instructional schedules and calendars facilitated the accumulation of college credits (AYPF, 2004; Azinger, 2000; Lerner & Brand, 2006; Lieberman, 2004; Kisker, Wechsler, 2001). Student use of college campus services, alignment of school/college calendar and schedule, and instruction of high school courses on college campuses were also found to positively impact the accumulation of college credits.

*Conclusion 20: A statistically significant relationship existed between the occurrences of using the school bell schedule to facilitate enrollment in college courses and accumulated college credits.*

The analysis revealed a statistically significant relationship at the .01 level between accumulated college credits and item 30 ( $r = -.391$ ). Item 30 referenced the location strategy of *using the school bell schedule to facilitate college course enrollment*. The  $r$  value indicated that perceived occurrences of this strategy had a low correlation with accumulated college credits. This finding may be the result of appropriate program planning. Program planning and design may have previously accounted for possible schedule discrepancies and eliminated the need to even consider bell schedule alignments. Any incongruence between high school and college schedules would have thwarted participation and, thereby, the accumulation of college credits noted in this conclusion.

*Conclusion 21: A weak relationship existed between administrators' perceptions regarding the occurrences of partnership strategies and accumulated college credits.*

The Pearson correlation coefficient reported for the relationship between overall partnership strategies and accumulated college credits was  $r = -.031$ . Literature on middle college/early college partnerships reported that the ease of secondary/higher education partners interaction increased the likelihood that students would enroll and earn college credits (Jobs for the Future, 2007; Huebner et al., 2006). Teacher communication with parents and college instructors was also encouraged by the Middle College National Consortium as a strategy to increase student performance in college courses and, thereby, the accumulation of college credits (Barnett, 2006; MCNC, 2001b).

*Conclusion 22: Little if any relationship existed between administrators' perceptions regarding the occurrences of teaching and learning strategies and accumulated college credits.*

The Pearson correlation coefficient reported for the relationship between overall teaching and learning strategies and accumulated college credits was  $r = -.074$ . Instruction on notetaking skills, integration of higher order thinking skills in instruction, participation of students in career activities, and small class sizes were noted in the literature as supports for the accumulation of college credits (Barnett, 2006; MCNC, 2007; Spence & Barnett, 2008).

*Conclusion 23: A weak relationship existed between administrators' perceptions regarding the occurrences of student support strategies and accumulated college credits.*

The Pearson correlation coefficient reported for the relationship between overall student support strategies and accumulated college credits was  $r = .162$ . Student support strategies, including reduced college tuition, tutoring, and support classes were noted by Bailey and Karp (2003) as strongly promoting success in structures that awarded college credit while in high school. The authors noted that student supports often extended into the first year of full-time college enrollment. The ECHSI also promoted the extension of student supports into the first year of college enrollment (Berger & Adelman, 2007).

*Conclusion 24: A weak relationship existed between administrators' perceptions regarding the occurrences of assessment strategies and accumulated college credits.*

The Pearson correlation coefficient reported for the relationship between overall assessment and accumulated college credits was  $r = -.096$ . Teachers teaching students to self-assess progress was noted in the literature as positively impacting the accumulation of college credits (Hoffman, 2003, 2006). Re-taking tests for a higher grades and exhibiting subject mastery in ways besides paper and pencil tests were strategies aligned with validating actions that Rendòn (1994) also asserted improved academic efficacy and improved student performance in college courses.

*Conclusion 25: A statistically significant relationship existed between the occurrences of students exhibiting mastery in ways besides paper and pencil tests and accumulated college credits.*

The analysis revealed a low statistically significant relationship at the .05 level between the occurrences of students *exhibiting subject mastery in ways besides paper and pencil tests* and accumulated college credits ( $r = -.315$ ). The  $r$  value indicated an inverse

relationship between perceived occurrences of this strategy and accumulated college credits. This finding may be impacted by the use of more traditional assessment methods in college courses. Bowen and Shuster (1996) asserted that college assessments largely consisted of summative paper and pencil tests, laboratory assignments, and field studies. Use of fewer alternate assessments by teachers preparing students to succeed in college courses that use more traditional assessments may have been impacted by this trend.

*Conclusion 26: A weak relationship existed between administrators' perceptions regarding the occurrences of democratic school governance strategies and accumulated college credits.*

The Pearson correlation coefficient reported for the relationship between overall democratic school governance and accumulated college credits was  $r = -.121$ . Literature reviewed for this study did not indicate that student and parent participation in school decision making impacted the accumulation of college credits.

*Conclusion 27: A weak relationship existed between administrators' perceptions regarding the occurrences of professional development strategies and accumulated college credits.*

The Pearson correlation coefficient reported for the relationship between overall professional development and accumulated college credits was  $r = .097$ . Teachers receiving training on providing academic support in the classroom, training on developing educational plans, and adapting instruction to meet student needs were noted in the literature as supporting student performance in high school and college classes (Fenske et al., 1997; Lieberman, 1998; MCNC, 2007).

## Limitations

Limitations associated with this study involved the data collection time period, sample size, response rate, and items/topics included in the survey. The data collection period was from May 21, 2009, to June 5, 2009. The data collection phase began immediately after expert review and pilot study phases, but coincided with high school graduation preparations and routine school closing activities. The data collection period was extended once, but few additional surveys were returned during that period. Further, because many middle colleges/early colleges have yet to graduate a senior class, the size of this study's sample was small. Although the response rate was 56%, only 64 administrators participated in the survey. Babbie (1990) noted that a response rate of at least 50% is, however, appropriate for analysis. The *Middle College/Early College Academic Support Survey* did not capture all strategies institutions used to encourage graduation and the accumulation of college credits. Moreover, this study's findings revealed little if any relationships between administrators' perceptions of academic support variables and student performance variables. Therefore, generalizations cannot be made to other groups of middle college/early college administrators or institutions.

## General Recommendations

This study provides several recommendations for practice. Recommendations are applicable to local, state, federal, higher education, and secondary partners involved in developing new middle colleges/early colleges or developing existing institutions. These recommendations for practice assume a foundational level of support for the middle

college/early college initiative. Recommendations are applicable to diploma-granting and non-diploma granting institutions.

1. States and districts should support the establishment and development of programs like the middle college/early college that focus on dropout prevention.
2. Middle colleges/early colleges should continue to provide academic support for students.
3. Data on middle college/early college graduation rates and accumulated college credits should inform decisions regarding expansion of the middle college/early college initiative.
4. Continual efforts should be devoted to areas in which this study noted statistically significant findings. A focus on early alignment of school and college calendars, the use of heterogeneously mixed high school classes by ability level, and multiple options for extra help for students enrolled in high school and college courses are advised.

This study also provides several policy recommendations. Policy recommendations are applicable to local, state, federal, higher education, and secondary partners involved in developing new middle colleges/early colleges or developing existing institutions. These recommendations assume a foundational level of support for the middle college/early college initiative and the political will to support initiative goals.

1. Stakeholders should develop policies that facilitate enrollment and transfer of college credits for students participating in middle colleges/early colleges or other secondary/postsecondary bridge to college programs.
2. Stakeholders should require mandatory benchmark assessments that assess dropout prevention program student performance.
3. States should create policies for secondary education that address student underperformance through early identification of students at risk of dropping out.
4. Policies should be developed that require dropout prevention programs to provide academic support for enrolled students.

#### Recommendations for Future Research

This study provides several recommendations for future research.

Recommendations are applicable to local, state, federal, higher education, and secondary researchers interested in middle colleges/early colleges, student support, Middle College National Consortium Design Principles and dropout prevention. These recommendations for future research assume a foundational level of support for the middle college/early college initiative.

1. This study should be replicated within the next five years when a full complement of middle colleges/early colleges graduate senior classes. Future assessments may yield larger sample sizes. Also, the response rate may be increased by administering the survey earlier during the school year.

2. Additional academic support strategies should be added to the *Middle College/Early College Academic Support Survey* without consideration of the Middle College National Consortium Design Principles' framework. The revised survey should also be administered to teachers and administrators.
3. The *Middle College/Early College Academic Support Survey* should be expanded to include free response questions that allow for administrator comments.
4. The *Middle College/Early College Academic Support Survey* should be administered to teachers to obtain another perspective on academic support in middle colleges/early colleges.
5. Additional research on the academic support variables in middle colleges/early colleges should include mixed methods studies involving parent and student perspectives.



## APPENDICES

## Appendix A

### Middle College National Consortium Design Principles

#### DESIGN PRINCIPLES

*"Design principles transcend local contexts and cultures."*

#### POWER OF THE SITE

##### Design Principle # 1.1: Location & Organizational Structure

Locating schools on a college campus is integral to student motivation and success and to an enduring collaborative partnership. It is a visible symbol to the community of dual accountability for student outcomes and academic success. Students are treated as college students and see themselves as college completers. The organizational structure reflects the shared responsibility of the high school, college and school district.

##### Evidence of Mature Implementation

- School and all of its students are located on a college campus.
- A written document is in place that includes agreed understandings with regard to facilities, resources, finances and other matters.
- Schools display the following characteristics:
  - Student schedules and school calendar are aligned with the college to permit students to take college classes at convenient times.
  - Students regularly use college services such as tutoring programs, theater facilities, labs, gym, etc.
  - The high school principal has a role in the college's governance structure.
  - A collaboration committee of college and high school personnel advises on school implementation.
  - The committee may include a "college liaison" who is highly placed in the college administration.
  - All students take college classes for dual enrollment. Early College students earn 30 credits by the end of the 12<sup>th</sup> grade and an Associates degree by the end of the 13<sup>th</sup> grade.

At the advanced level of implementation there is evidence that schools use college students as tutors and role models, high school students have a role in student government at the college and get priority enrollment for college courses.

#### POWER OF THE SITE

##### Design Principle # 1.2: Partnerships

High schools depend on the formation of strong partnerships and collaborations in order to develop schools that minimize the boundary between high school and college and lead to high quality educational and employment opportunities. These require the development of relationships among administrators, faculty and staff at the secondary and postsecondary levels, as well as business representatives, parents and community members.

#### **Evidence of Mature Implementation**

- Opportunities exist for the college and school district to work with the school on planning for the future.
- College and high school faculty, counselors and administrators meet and communicate regularly with their counterparts.
- Parents belong to a membership/association group.
- Partnerships are formed with community members and businesses that can contribute to student achievement.
- Information-sharing systems have been created between the college and the high school regarding individual students.
- Educational outcomes of students are recognized as the joint responsibility of the high school and the college.

At the advanced level of implementation there is evidence that faculty and staff from the high school and the college participate in joint in-service training, business partners offer students internship and/or job opportunities, parents actively and enthusiastically participate in the life of the school.

## **TEACHING AND LEARNING**

#### **Design Principle # 2:**

Schools regularly engage students in rigorous, in-depth academic work, use active intellectual inquiry and sustained writing and revision in all classes. High standards are set for all students and teachers. Developing students' literacy skills is a priority.

#### **Evidence of Mature Implementation**

- High expectations and standards for all students are established and publicized in an educational plan developed by high school and college faculty.
- Curricula emphasize literacy, numeracy, communication, analysis and application in all disciplines.
- Curricula, projects and assessments emphasize student-centered intellectual inquiry and ask students to make meaning of knowledge, apply it and create or construct new knowledge.
- Real-world learning experiences such as career oriented classes, internships, community service, help students build their own bridges between school and the world of work.
- Students are comfortable using technology and a variety of media to gather information and are expected to present their learning and make their work public.
- Classes are small and heterogeneously grouped and class time is lengthened for in-depth exploration of topics and sustained learning.
- The school meets the needs of challenging learners.

At the advanced level of implementation there is evidence of higher order thinking reflected in student work, of creative, excitement-generating curricula and of regular interdisciplinary teaching.

## STUDENT ASSESSMENT

### Design Principle # 3:

Schools design a system of assessment that provides multiple opportunities for students to publicly exhibit what they know and can do. Assessments grow out of classroom work and provide on-going feedback to the school community, the teacher, the student and the parent on a student's progress toward achieving academic proficiency.

#### Evidence of Mature Implementation

- Assessment is continuous, on-going and interwoven with classroom activities.
- Student outcomes are measured using multiple assessments, including performance-based assessment.
- Assessments may be determined by teachers, student peers, self and local/state/national measures.
- Assessment information is useful to the school, teachers, students and parents. Students use assessment information to measure their progress toward meeting standards of college readiness.
- Assessments inform school-based decisions regarding pedagogy, school structures and systems.
- Projects and assignments are scaffolded, providing structure, feedback and support in progressive stages so that all students achieve at higher levels.

At the advanced level of implementation there is evidence that students receive feedback that leads to better performance, that technology is used to enhance the assessment process, that exit portfolios or oral defenses provide opportunities for students to publicly demonstrate learning and that assessment strategies are regularly reviewed and improved.

## STUDENT SUPPORT

### Design Principle # 4:

"Smallness," less than 100 students per grade level, helps to create a learning community for students and teachers and provides opportunities for flexible and innovative structures to support students academically, socially and emotionally. All students are known well not only because the school is small but is also guidance-focused. Students know that adults care.

#### Evidence of Mature Implementation

- Schools are orderly and safe.
- All adults see themselves as counselors and mentors.
- All administrators and teachers meet at least once a week with the same small group of students (house/advisory/focus) for one to four years. Informal conversations cover academic and family, and social concerns.
- Classes are small and meet for a lengthened period of time.

- Instruction and assignments are scaffolded to provide structure, feedback and support in progressive stages so that all students achieve at higher levels and are helped to meet college expectations.
- Daily seminar for concurrently enrolled students is provided to help them “unpack” college-level work, navigate college systems and provide personal and social support.
- Mixed-ability student groupings and classes enable the academically “stronger” to help the less prepared.
- The school’s guidance office includes at least one professional school counselor; counseling is structured for small groups as well as for individuals.
- Help is provided for students with special needs including English language learners.
- Student progress and needs is regularly communicated to parents.

At the advanced level of implementation there is evidence that students are trained and serve as peer mediators or mentors, that parent voice is heard through the P(T)A, that parent-support groups meet to discuss teen rearing issues and challenges, and that students have multiple adults they can count on for help including one-on-one mentoring to help students prepare for their graduation oral defense.

## **DEMOCRATIC SCHOOL GOVERNANCE**

### **Design Principle # 5:**

Purposefully designed structures provide for everyone’s voice to be heard and respected in the decision-making process with regard to hiring personnel, managing budgets, determining curriculum and pedagogy, developing students’ activities and any other policies that affect the daily life of students and faculty.

### **Evidence of Mature Implementation**

- There are clear written descriptions of staff roles, responsibilities and expectations.
- School committees (e.g. student activities, curriculum and assessment, personnel) include administrators, teachers, counselors, parents, students and college and community representatives.
- Shared decision-making supports the intellectual quality of instruction and strengthens the professional community of the school.
- Using the peer review process, a ‘personnel committee’ assumes the responsibility for mentoring and supporting staff.
- Teachers are members of instructional teams or committees that create program designs, develop curricula and select classroom materials. Issues of teaching and learning are at the center of all discussions and decisions.
- Professional development is offered to help staff gain knowledge of governance practices and issues.
- Students represent their schools at Consortium-sponsored annual student conferences to discuss significant social issues with students from across the country.

At the advanced level of implementation there is evidence that high levels of trust exist among all school staff, that positive outcomes associated with democratic school governance (high morale, low turnover) exist and that collaborative relationships are developed with local educational unions,

## PROFESSIONAL DEVELOPMENT

### Design Principle # 6:

Staff participates in on-going, embedded professional development that focuses on student success and provides training for unfamiliar roles they play as counselors/mentors and as school leaders/decision-makers. Reflective practice is seen as the center of professional development. New teachers are helped to understand and implement the goals of the community.

### Evidence of Mature Implementation

- Every five years schools participate in the Consortium's Critical Friends Review (CFR) process.
- Professional development goals are set by the school staff based on student assessment data, school needs and 'questions for consideration' raised by the CFR team.
- Meeting time for professional teacher groups/learning communities is built into the school's weekly schedule. Working in small groups, teachers focus on their instructional practice and offer mutual assistance, regularly reviewing and giving feedback to each other with regard to teacher constructed class projects, assignments, and assessment tools.
- New hires participate in a formal mentoring system designed by the school.
- Faculty members are involved in local and national conferences and associations.

At the advanced level of implementation there is evidence that each staff member has a written professional development plan based on personal and school needs, that teachers regularly review each others' teaching and student work, and that staff express high levels of satisfaction and engagement with their professional development opportunities, see themselves as a learning community involved in reflective practice and demonstrate ways that they have applied new knowledge and skills.

Rev.2/07



Note. From [http://www.mcnc.us/downloads/Deisgn\\_Principles.pdf](http://www.mcnc.us/downloads/Deisgn_Principles.pdf), by the Middle College National Consortium, 2008, New York, NY: Middle College National Consortium. Copyright 2007 by the Middle College National Consortium. Reprinted with permission.

## Appendix B

### Middle College-Early College Academic Support Survey

#### School and Administrator Questions

**1. What is your gender?**

Female

Male

**2. What is your race?**

African American

Asian

Caucasian

Hispanic

Other

Other (please specify)

**3. What was your school's total enrollment during the 2007-2008 SCHOOL YEAR?**

(Enter enrollment number)

**4. What was your school's graduation rate for the 2007-2008 SCHOOL YEAR?**

(Do NOT use % sign.)

**5. How many cumulative college credits did SENIORS earn upon graduation from high school in 2007-2008?**

(Only count credits for courses in which students earned a grade of C or better.)

#### Middle College/Early College Academic Support Survey

**"In my Middle College/Early College....."**

	Frequently, if not always	Fairly often	Once in a while	Not at all
6. Extra help is provided for students in high school courses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Extra help is provided for students enrolled in college courses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Students take college courses for free.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Teachers teach notetaking strategies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Higher order thinking skills are integrated into instruction (i.e., Bloom's analysis, synthesis, or evaluation cognitive domain levels).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



**"In my Middle College/Early College....."**

	Frequently, if not always	Fairly often	Once in a while	Not at all
11. Teachers integrate career exploration into coursework.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Students participate in career activities (i.e., internships, job shadowing, etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Students exhibit mastery in ways besides paper and pencil tests (i.e., performance assessment, projects, etc).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Students re-take classroom tests for a higher grade.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Teachers instruct students how to self-assess their own progress.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**"In my Middle College/Early College....."**

	Frequently, if not always	Fairly often	Once in a while	Not at all
16. Teachers teach test taking skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Students use college campus services (i.e. tutoring, job placement, library, counseling, etc).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Teachers discuss student performance with college instructors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Teachers discuss student performance with parents.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Teachers receive training on how to provide academic supports in the classroom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**"In my Middle College/Early College....."**

	Frequently, if not always	Fairly often	Once in a while	Not at all
21. Teachers receive training on developing student educational plans.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Teachers receive training on using technology in the classroom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Teachers receive training on adapting instruction to meet student needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Businesses provide student career opportunities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. The daily bell schedule is adjusted when more time instructional time is needed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



**"In my Middle College/Early College...."**

	Frequently, if not always	Fairly often	Once in a while	Not at all
26. Students participate in school-level decision making.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Parents participate in school-level decision making.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I use classroom and school data to inform school-level decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. The school calendar makes it easy for students to enroll in college courses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. The school bell schedule makes it easy for students to enroll in college courses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**"In my Middle College/Early College...."**

	Frequently, if not always	Fairly often	Once in a while	Not at all
31. Small, group student advisory sessions are held.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. High school class sizes are small (less than 20 students).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. High school classes are taught on a college campus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. High school classes are heterogeneously mixed by ability levels.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Appendix C

### Participant Informed Consent Letter

#### **Information Concerning Participation in a Research Study Clemson University**

Research Study Title:

#### **Administrators' Perceptions Regarding Middle College/Early College Academic Support and Student Performance**

##### **Description of the research and your participation**

You are invited to participate in a research study conducted by Dr. Frankie K. Williams, Principal Investigator, and Julie Anna Hartwell, doctoral candidate, entitled: **Administrators' Perceptions Regarding Middle College/Early College Academic Support and Student Performance**. The purpose of this research is to investigate administrator perceptions regarding academic supports offered in Middle Colleges/Early Colleges and student performance outcomes.

Your participation will involve answering 34 survey questions that address the level of academic supports offered in your school, graduation rate, and participant demographic data.

**The amount of time required for your participation will be 8 minutes.**

##### **Risks and discomforts**

There are no known risks associated with this research.

##### **Potential benefits**

This research may help us to understand if there is a relationship between academic supports offered to students and graduation rates. Moreover, this research may help us to understand if there is a relationship between academic supports offered to students and the number of college credits students accumulated prior to graduation.

##### **Protection of confidentiality**

We will do everything we can to protect your privacy. Your name, email address, or school name will not be used in any way during data collection, data analysis, or writing processes. Your identity will not be revealed in any publication that might result from this study. Only raw data will be stored in a password protected computer. This raw data will be deleted 5 years after the completion of the study.

##### **Voluntary participation**

Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalized in any way should you decide not to participate or to withdraw from this study.

##### **Contact information**

If you have any questions or concerns about this study or if any problems arise, please contact Dr. Frankie K. Williams at Clemson University at 864.656.1491. If you have any questions or concerns about your rights as a research participant, please contact the Clemson University Office of Research Compliance at 864.656.6460.

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