

Copyright
by
Kelly Streams Hudson
2022

THE INFLUENCE OF SOCIAL CAPITAL ON ECONOMICALLY DISADVANTAGED
STUDENTS' ENROLLMENT IN ADVANCED MATHEMATICS COURSES

by

Kelly Streams Hudson, M. Ed.

DISSERTATION

Presented to the Faculty of
The University of Houston-Clear Lake
In Partial Fulfillment
Of the Requirements
For the Degree

DOCTOR OF EDUCATION

in Educational Leadership

THE UNIVERSITY OF HOUSTON-CLEAR LAKE

MAY, 2022

THE INFLUENCE OF SOCIAL CAPITAL ON ECONOMICALLY DISADVANTAGED
STUDENTS' ENROLLMENT IN ADVANCED MATHEMATICS COURSES

by

Kelly Streams Hudson

APPROVED BY

Antonio Corrales, Ed. D., Chair

Michelle Peters, Ed. D., Committee Member

Kent A. Divoll, Ed. D., Committee Member

Tina Farrell, Ed. D., Committee Member

RECEIVED/APPROVED BY THE COLLEGE OF EDUCATION:

Felix Simieou, Ed. D., Associate Dean

Joan Y. Pedro, Ph. D., Dean

Dedication

This work is dedicated to the giants to whom I stand on, next to, and because of: Venessa, my mother – the outstanding model of excellence I will continue to chase; Lanessa, my sister – the standard of unmatched strength; Kelsir, Jr., my brother – the exemplar lesson for reflection and the subsequent growth; Leah, my niece – the book I have always understood and been proud of; Kailee, my daughter – the promise every mother needs to go forward; Mason, my son – the epitome of empathy, consistency, and love; Maxximus, my son – the sweetest reminder to go slow to move fast; Marcus, my husband – the peace I find when the confusion is louder than what we have prayed for.

Acknowledgments

I am eternally grateful for the support and encouragement from my family, Marcus, Kailee, Mason, and Maxximus. The allowances of quiet spaces, the agreement to not so many homecooked meals, the laundry pile that has lasted for four years - their patience and understanding made this journey possible. I love you to life. Next, thank you to my incredible father, to whom I owe my relentless will and work ethic as he so graciously modeled. I work hard because he first showed me it was possible. Also, thank you to my friends who have defied the definition of friendship truly being family even when I disappeared to make this work possible.

Finally, none of this would have been possible without the commitment and support of my dissertation committee – Dr. Antonio Corrales, Dr. Michelle Peters, Dr. Kent Divoll, and Dr. Tina Farrell. Each with their unique approach created the best committee and mentors for me. I will never be able to thank them enough for their consistent guidance, patience, and reality checks that kept me focused when I needed it the most. I am abundantly thankful for their presence and support throughout this process.

ABSTRACT

THE INFLUENCE OF SOCIAL CAPITAL ON ECONOMICALLY DISADVANTAGED STUDENTS' ENROLLMENT IN ADVANCED MATHEMATICS COURSES

Kelly Streams Hudson
University of Houston-Clear Lake, 2022

Dissertation Chair: Antonio Corrales, Ed. D.

An indicator of college readiness is the participation in advanced courses in junior high school. The purpose of this mixed methods study is to examine the social capital of 7th and 8th grade students enrolled in advanced mathematics courses. This study examined junior high student perspectives in the areas of attitude toward college, teacher expectations and interactions, college readiness, school-wide support, and parental engagement. Additionally, interviews were conducted to examine the impact of social capital on their advanced mathematics course experience related to post-secondary readiness and support from school faculty. Data were collected from a purposefully matched sample of 7th and 8th grade students enrolled in advanced mathematics. The participants were individually matched by economic status, gender, and ethnicity. The matched sample consisted of 66 economically disadvantaged students in advanced mathematics courses and 66 non-economically disadvantaged students in advanced mathematics courses. Twenty-four students participated in a focus group session to better understand junior high school experiences. The findings in this study indicate that, overall, advanced mathematics students in both socioeconomic groups have comparable perspectives of their junior high school experiences related to attitude towards college,

teacher expectations and interactions, college readiness, school-wide support, and parental engagement. Economically disadvantaged students do not feel less prepared than their counterparts enrolled in advanced mathematics courses. The focus group data revealed students felt their teachers were instrumental in assisting them with the course selection process. The students in the focus group spoke about the influence of their peers in selecting courses. The students also pointed to the importance of participating in extracurricular activities as a way to round out their junior high school experiences.

TABLE OF CONTENTS

List of Tables	x
CHAPTER I: INTRODUCTION.....	1
Research Problem	2
Significance of the Study	6
Research Purpose and Questions	7
Definition of Key Terms.....	8
Conclusion	12
CHAPTER II: REVIEW OF THE LITERATURE	13
Economically Disadvantaged Junior High Students.....	13
Attitude Towards College	17
Teacher Expectations and Interactions	19
College Readiness	24
School Wide Support	28
Parental Engagement	30
Summary of Findings.....	33
Theoretical Framework.....	34
Conclusions.....	34
CHAPTER III: METHODOLOGY	36
Overview of the Research Problem	36
Operationalization of Theoretical Constructs	37
Research Purpose and Questions	38
Research Design.....	39
Population and Sample	39
Participant Selection	41
Instrumentation	42
Data Collection Procedures.....	43
Quantitative.....	43
Qualitative.....	44
Data Analysis	45
Quantitative Analysis.....	45
Qualitative Analysis.....	45
Qualitative Validity.....	46
Privacy and Ethical Considerations	47
Research Design Limitations	47
Conclusion	48
CHAPTER IV: RESULTS.....	49
Participant Demographics	49
Research Question One.....	53
Research Question Two	57
Question Three.....	61
Research Question Four.....	65

Research Question Five	71
Research Question Six	75
Advanced Courses	76
Course Selection and Planning	85
Skills Supporting High School & College Readiness.....	94
Summary of Findings.....	105
Conclusion	108
CHAPTER V: SUMMARY, IMPLICATIONS, AND FUTURE RESEARCH	
RECOMMENDATIONS	110
Summary	111
Implications.....	127
Recommendations for Future Research	132
Conclusion	134
REFERENCES	136
APPENDIX A: ASSENT OF MINOR TO PARTICIPATE IN EDUCATION RESEARCH	
(7-12).....	164
APPENDIX B: A MODIFIED HIGH SCHOOL FOLLOW-UP SURVEY	166
APPENDIX C: FOCUS GROUP QUESTIONS	171
APPENDIX D: SURVEY PERMISSION EMAIL	173

LIST OF TABLES

Table 3.1: District Student Demographic Data: 2019 - 2020	40
Table 3.2: Student Enrollment for the District and Junior High Schools	41
Table 4.1: Participant Demographics (%).....	51
Table 4.2: Education Level of Participant’s Mother and Father (%).....	52
Table 4.3: Expanded Responses to Students’ Perceptions of Attitude Toward College (%)	55
Table 4.4: Collapsed Responses to Students’ Perceptions of Attitude Toward College (%)	56
Table 4.5: Attitude Toward College	57
Table 4.6: Expanded Responses to Students’ Perceptions of Teacher Expectations and Interactions (%).....	59
Table 4.7: Collapsed Responses to Students’ Perceptions of Teacher Expectations and Interactions (%).....	60
Table 4.8: Teacher Expectations and Interactions	61
Table 4.9: Expanded Responses to Students’ Perceptions of College Preparation (%) ...	63
Table 4.10: Collapsed Responses to Students’ Perceptions of College Preparation (%) .	64
Table 4.11: College Preparation	65
Table 4.12: Expanded Responses to Students’ Perceptions of School Wide Support (%)	67
Table 4.13: Collapsed Responses to Students’ Perceptions of School-Wide Support (%)	69
Table 4.14: School-Wide Support.....	71
Table 4.15: Expanded Responses to Students’ Perceptions of Parental Engagement (%)	73
Table 4.16: Collapsed Responses to Students’ Perceptions of Parental Engagement (%)	74
Table 4.17: Parental Engagement	75

CHAPTER I: INTRODUCTION

In the United States of America, the South-Central region experienced the second-largest increase in public school enrollment between 2004 to 2014, at 18.8 percent (NCES, 2016). Research illustrates that the enrollment modestly increases annually for low socioeconomic students in large urban districts. In contrast, enrollment for White students, non-low socioeconomic students, decreases affecting the socioeconomic demographic landscape of large urban school districts (Billingham, 2019). Comparatively, federal and state dollars spent each year on increasing the number of Advanced Placement (AP) classes in sizable urban school communities has been remarkable especially since AP courses have been primarily taught in wealthier school districts to affluent White students (Pierson et al., 2017). Over the last decade, the AP proliferated rapidly; however, the program's benefits continue to largely exclude economically disadvantaged students (Kolluri & Tierney 2018).

Straubhaar and Gottfried (2016) explained that large urban school districts, with more affluent student populations, have encountered an increased number of economically disadvantaged families with students previously enrolled in low-performing schools. One of the most significant criticisms cited by economically disadvantaged students in large urban school districts is that they often outperform students of similar socioeconomic status in neighboring districts; however, they often lag behind their White and Asian counterparts in academics, test scores, and the college-going rate in large urban school districts with more affluent student populations (Warren-Grice, 2017). Many families see the large urban school districts as an educational promise that economically disadvantaged students will do well; however, inequitable outcomes persist for these students (Warren-Grice, 2017).

Research supports those students participating in AP courses have an increased level of college readiness (Arce-Trigatti, 2018). College Board (2013) data reports AP course and exam exposure amongst economically disadvantaged students nationwide has proven beneficial to their post-high school academic success. However, there is a continued disproportionate representation of economically disadvantaged students in AP courses in secondary schools in large urban districts (Anderson, 2020).

Additionally, the impact of social capital – teacher and counselor interactions; parental involvement; school leadership; student perceptions – influences student participation in AP enrollment (Martinez & Welton, 2014). Examining this relationship may lead to the development of strategies to remove barriers for economically disadvantaged student participation in AP courses, as well as providing a better understanding of educational approaches to increase student achievement in large urban districts with changing socioeconomic footprints (LeBeau, 2020). This chapter will present the research problem, significance of the study, the research purpose and questions, and definitions of key terms.

Research Problem

This academic achievement discrepancy is most pronounced in urban areas (Lewis et al., 2008), and is mirrored by disparities in other educational outcomes such as low grades and high dropout rates (Denbo & Moore Beaulieu, 2002; Moore et al., 2005) that are associated in turn with ongoing inequality in future income levels, occupational opportunities, health, and a range of other social outcomes (Levine, 2005; McKown & Weinstein, 2008). Students with a low economic status may be considered especially at-risk of poor academic achievement, particularly subject to low teacher expectations, and among those least likely to be identified for advanced academic classes and gifted education services (Kitano, 2003).

Research reveals that college readiness is dependent upon the resources and support provided during a student's junior high school career (Atherton, 2014). Conley (2007) explained the cognitive and metacognitive skills students need to be prepared for entry-level college courses, beginning as early as junior high school, are provided more often in an AP course. Therefore, an increased early exposure to AP courses builds transitional strategies making the adjustment to college culture feasible (Flores & Gomez, 2011). Research suggests that success in high school and in post-secondary settings is related to the following experiences in junior high school: AP courses; extracurricular activities; positive partnerships between students and teachers (Suldo, 2018). The junior high school setting is the most productive place to develop an increased focus on productive study habits and present challenging coursework in a non-threatening manner by way of AP courses. (Griffin, 2019).

The Advanced Placement Program, administered by The College Board, allows students to participate in college-level courses while in high school and possibly earn college credit while still in high school (Klopfenstein & Thomas, 2009). The Pre-Advanced Placement Program (Pre-AP), as an entity of the Advanced Placement Program, is a program offered to schools by the College Board. Pre-AP coursework at the junior high school level prepares students for these advanced courses (Klopfenstein & Thomas, 2009). Pre-AP courses deliver grade-level appropriate instruction through focused course frameworks, instructional resources, learning checkpoints, and collaborative educator workshops (Klopfenstein & Thomas, 2009). They are designed to support all students across varying levels of abilities through focus (Klopfenstein & Thomas, 2009). The program grants educators and their students the space and time for deep engagement with content. Pre-AP classes are more challenging and stimulating, therefore they take more time and require more work (Klopfenstein & Thomas, 2009).

The AP program was developed as a collaboration of elite high schools and colleges to engage superior high school students with work aligned to university curricula (Conley, 2010).). In the 2012–13 school year, the College Board made efforts to increase access to AP courses to traditionally underserved students (College Board, 2013). The organization worked closely with secondary schools to develop and align curriculum standards. Collaborative planning ensured that traditionally underserved student populations were prepared to enroll in AP courses and successfully complete the exams. As a result of these efforts, the Texas Education Commissioner reported that more than 122,000 class of 2016 graduates took at least one AP exam during their high school careers (TEA, 2017). Texas remains ahead of the national average of students taking at least one AP exam during their high school career (TEA, 2017).

Research supports that students who participate or complete AP courses have a level of college-readiness than of their counterparts (Bersamin, 2016). AP students are likely to earn a college degree on time, granting them access to financial security and stability (Choy, 2001). To increase the college-going rates as well as college completion rates, research proves underserved students need equitable access to AP courses and other resources provided by secondary schools as early as junior high school (Martinez & Everman, 2017). Consequently, economically disadvantaged students, an underserved demographic, attending secondary schools in large urban districts often encounter challenges related to accessing AP courses (Welton & Martinez, 2014).

The Texas Education Agency (2017-18) enrollment report indicated that economically disadvantaged students accounted for 58.7% of the total enrollment in Texas. Similar reports indicated economically disadvantaged students earning an AP course credit was the lowest, reported at 23%, while White students were reported at 40% and Asian students at 72%, the highest percentage (NCES, 2016). In large urban school

districts, AP courses are filled with students not requiring free and reduced lunch, Asian students with White students (Martinez & Welton, 2014). This separation of student groups shapes the academic culture of secondary schools (Martinez & Welton, 2014). Martinez and Welton (2014) explained that separation of student groups manipulates student expectations of the academic on-level courses. In large urban districts, the campus culture dictates that students who are economically disadvantaged are less likely to attain academic success. In contrast, White and Asian students are challenged academically gaining an elite level of college readiness in the AP courses. Kerr (2014) cited this separation as an unintended segregation that is harmful for students.

Kerr (2014) discussed this problem, situated in a northern suburban school, recounting – “they do not feel like they belong” and the need for college readiness. One of the biggest criticisms highlighted in the study was the large majority of the AP courses were “overly white”, indicating to the non-White students that the advanced courses were geared toward White students only (Kerr, 2014). This specific criticism is related to the overall negative perception of AP courses for students not enrolled in these courses. Klopfenstein & Thomas (2009) reported the opposite experience as AP courses generate strong relationships between educational success and positive exposure to high expectations.

Hemelt (2019) reported that AP courses provide educational promise and opportunity for students. The most significant damage in this instance, in the form of lost future opportunities, occurred for economically disadvantaged students not enrolled in AP courses (Nichols & Islas, 2016). Furthermore, all students who participate in advanced classes are far more likely to graduate from high school, and they are often far more successful in college after graduation. Kerr (2014) included the top reasons for low enrollment in Advanced Placement courses for students of low socioeconomic status:

poverty issues, peer relationships/pressure, and absence of parental support. Therefore, economically disadvantaged students' social capital contributes to an increased level of college readiness leading to greater student success.

Social capital refers to the social connections or networks between people in a social setting that assist people and is often defined by the functions of social capital itself (Winkle-Wagner, 2010). Often, student success is a reflection of the knowledge, resources and support provided by the stakeholders (Winkle-Wagner, 2010). Students are more likely to attend college if they are exposed to these opportunities (Winkle-Wagner, 2010). Successful exposure is granted by way of AP courses along with parent teacher communications and student interactions with counselors and administrators (Winkle-Wagner, 2010). Social capital serves as a network to promote academic success and college readiness (Winkle-Wagner, 2010).

Significance of the Study

LeBeau (2020) expressed that an indicator for college readiness is the participation in AP courses as early as junior high school. Yet, there is limited research investigating benefits of early access to AP courses for economically disadvantaged junior high school students. There is a call for research that addresses the influences of the social capital theoretical framework related to early access to AP courses for economically disadvantaged secondary students. The purpose of this mixed methods study is to examine the social capital of economically disadvantaged 7th and 8th grade students enrolled in mathematics courses and the impact on college readiness. Research supports the promotion of college readiness for students as early as junior high school through the access of rigorous curriculum (McClafferty-Jarsky et al., 2009). Advanced Placement courses are linked to positive college and career opportunities. Therefore, large urban school districts must intentionally work to navigate the course selection

process in junior high school to increase the enrollment of economically disadvantaged students in AP courses (Holland, 2015). Positive academic outcomes are derived from students being offered a demanding curriculum and interacting with teachers who have high educational expectations for them (Epstein, 2018). While the premise of the AP program was to provide elite high school students the opportunity to take college-level classes, the evidence shows that a demanding curriculum has intellectual and practical benefits for students of all backgrounds, races, and ethnicities across secondary settings (Epstein, 2018). Research highlights the need for students to access high-quality and well-crafted curricula to ensure post high school readiness and success as college and career expectations increase (Malin et al., 2017). Participation in AP courses prevents lost opportunities for economically disadvantaged students while affording a chance to be competitive in the college admissions process (Kerr, 2014). The unintentional exclusion of economically disadvantaged students in AP courses will have global consequences. Economically disadvantaged students will lack a reasonable level of post high school education creating non-contributing positive individuals in society.

Research Purpose and Questions

The purpose of this mixed methods study was to examine the social capital of economically disadvantaged 7th and 8th grade students enrolled in advanced mathematics courses. The research questions guiding this study are:

1. Does economic status influence attitude towards going to college for 7th and 8th grade students in advanced mathematics courses?
2. Does economic status influence teacher expectations and interactions for 7th and 8th grade students in advanced mathematics courses?
3. Does economic status influence college readiness for 7th and 8th grade students in advanced mathematics courses?

4. Does economic status influence school-wide support for 7th and 8th grade students in advanced mathematics courses?
5. Does economic status influence parent engagement for 7th and 8th grade students in advanced mathematics courses?
6. How do economically disadvantaged students enrolled in 7th and 8th advanced mathematics courses perceive their educational experiences in terms of attitude towards going to college, teacher expectations and interactions, college readiness, school wide support, and parent engagement?

Definition of Key Terms

Academic Achievement: Successful attainment of cognitive demands, possibly including social, cultural, and affective skills, necessary to complete the curriculum requirements established by content disciplines (Carlin, 2008).

Advanced Mathematics: For the purposes of this study, the student participants are enrolled in advanced mathematics courses which is synonymous to AP coursework. In the large urban school district, the location of this study, seven of 31 campus are junior high schools. One of the AP course offerings within these seven junior high schools is advanced mathematics, which is designed to deliver grade-level appropriate instruction one to two grade levels ahead - an accelerated rigorous learning framework. For example, 6th grade students can be enrolled in 8th grade mathematics; the following school year, these students are enrolled in advanced Algebra I; during their 8th grade school year, these students are enrolled in advanced Geometry.

Advanced Placement (AP) Program: The AP program was created in 1955 and consists of courses and tests allowing high school students the opportunity to take more rigorous courses and earn college credit. Students receive credit by passing a standardized AP

exam with a designated score. AP is implemented by high schools in every state (College Board, 2013). Advanced Placement courses at the junior high school level are often referred to as Pre-AP courses. These classes that are meant to prepare high school students for AP classes (college-level classes taken in high school) as well as college classes themselves. Pre-AP classes are typically taken by high school freshman and sophomore, but some of the courses can begin as early as 8th grade such as mathematics and biology.

At-risk Students: Traditionally underrepresented students can be identified as at-risk for not completing high school with their cohort. Some indicators of students who are at-risk are poor attendance or number of credits earned (U. S. Department of Education, 2008).

College Board: A non-profit organization that has continued to develop and maintain the AP program, support high schools, colleges and universities, and coordinate the administration of annual AP examinations since 1955 (College Board, 2013).

College-going Culture: A culture of high expectations where behaviors of staff are focused on student preparation for college as well as the college application process (Martinez & Everman, 2017).

College Readiness: The engagement in college coursework needs specific skills to navigate the rigorous expectations of college courses. These skills include the ability to think independently and be self-reliant. Additionally, to be college ready, students should possess the ability to assimilate to college culture (Richardson et al., 2016).

Detracking: Detracking refers to the process of eliminating barriers that sort students by ability. Those barriers can be instructional, organizational, or institutional (LaPrade, 2011).

Economically Disadvantaged: A family or individual that is eligible for family aid or food stamps. (U. S. Department of Education, 2013).

Economically Disadvantaged Student: An economically disadvantaged student is defined as one who is eligible for free or reduced-price meals under the National School Lunch and Child Nutrition Program (Ralston et al., 2008).

Free and Reduced Lunch Program: A federal program designed to provide breakfast and lunch to students whose household income falls below a certain level as determined by the federal government (U.S. Department of Agriculture, 2000).

High School Follow Up Survey: A survey developed to determine the relationship between students' perceptions of their high school experience and their readiness for college (Leal, 2008).

Junior High School: Often referred to as middle school; A campus that serves students in the sixth through eighth grade.

Minority Students: The terms African American and minority are used interchangeably throughout this study. The term was sometimes used to refer to racially, ethnically, linguistically, or culturally diverse students. These students are typically underserved in programs for advanced learners (U.S. Department of Commerce, 2001).

Opportunity Gap: The differences in access to resources that support and provide educational experiences for students (Darling-Hammond, 2010).

Parental involvement: The activities and time parents spend with their children in both home and school-based settings to promote a positive impact on student achievement (Doetterer & Wehrspann, 2015).

Post-Secondary Readiness: A measure of preparedness for college level coursework (TEA, 2017).

Pre-Advanced Placement Courses: The Pre-Advanced Placement Program (Pre-AP), as an entity of the Advanced Placement Program, is a program offered to schools by the College Board. Pre-AP coursework at the junior high school level prepares students for

these advanced courses. Pre-AP courses deliver grade-level appropriate instruction through focused course frameworks, instructional resources, learning checkpoints, and collaborative educator workshops (College Board, 2013).

Racial Opportunity Cost: The expense of lost opportunities students of color encounter when they pursue academic achievement (Chambers & Huggins, 2014).

School Connectedness: A student's ability to access school resources and participate in extra-curricular activities in an effort to be involved in aspects of school other than academics (Chapman et al., 2014).

Social Capital: Students' relationships with institutional agents such as teachers, administrators, and support personnel who have the capacity to convey necessary norms and expectations that facilitate academic progress (Stanton-Salazar, 1997).

State of Texas Assessments of Academic Readiness (STAAR)- Standardized test based on the Texas Essential Knowledge and Skills to measure knowledge and skills based on specific content areas along with career and college readiness standards (TEA, 2017).

Student Achievement: The level of success students attained on the mathematics and reading *State of Texas Assessment of Academic Readiness (STAAR)* performance (TEA, 2017).

Teacher Beliefs: Created from experiences that shape behavior and action (Bernhardt, 2014b).

Teacher Perspectives: Reflect the interactions of beliefs about experiences and the interpretations of experiences, which drives teacher actions. It is perspectives that give meaning to beliefs (Bernhardt, 2014b).

Teacher-Student Relationships: A relationship with a teacher is said to influence a child's social and emotional well-being and academic performance (Toste et al., 2015).

Tracking: An instructional arrangement where students are grouped academically in high- or low-tracks based on student needs (Kelly & Price, 2011).

Underrepresented Students: Students who are potentially affected by achievement gaps. These students may be identified as a racial or ethnic minority, from a low- income family, or both. Students from minority groups or who are economically disadvantaged potentially have limited access to AP courses. (National Education Agency, 2015).

Urban School: The term urban school used throughout this study refers to schools located in metropolitan areas that are characterized by high ethnic and linguistic diversity enrollment and by high low-income enrollment. The number of students eligible for free and reduced-price school lunch is used as a proxy measure of low-income (Welsh & Swain, 2020).

Conclusion

This chapter provides an overview of the importance of the study, significance of the problem, research purpose and questions, and key definitions pertaining to this study. This research study sought to examine the social capital of economically disadvantaged 7th and 8th grade students enrolled in mathematics courses as well secondary course enrollment practices in large urban school districts. The next chapter will be a literature review of the major topics that will encapsulate this study.

CHAPTER II: REVIEW OF THE LITERATURE

Research supports those students who participate or complete at least one Advanced Placement (AP) course have a higher level of college-readiness than their counterparts (Kerr, 2014). Consequently, economically disadvantaged students in secondary urban schools often encounter challenges related to accessing AP courses. The purpose of this study was to examine the social capital of economically disadvantaged students and the students' perceptions of their junior high school experiences related to college readiness. To address these areas, this literature review focused on: (a) economically-disadvantaged junior high students, (b) attitude towards college, (c) teacher expectations and interactions, (d) college readiness, (e) school wide support, and (f) parental engagement.

Economically Disadvantaged Junior High Students

There is strong evidence regarding the relationship between advanced level achievement in mathematics courses and a junior high students' economic status. Economic status has become one of the most prevalent indicators of academic achievement in secondary schools as well as post-secondary success (Farooq et al., 2011). A students' economic status is measured by their family's income. Research classifies an individual as economically disadvantaged if his or her income level falls below some minimum level necessary to meet basic needs (Hagenaars, 2017). This minimum level is usually called the "poverty line" (Goedhart et al., 1977). The poverty lines vary in time and place, and each country uses lines that are appropriate to its level of development, societal norms and values (Goedhart et al., 1977).

In public education, the students' economic status determines their eligibility for free or reduced-price meals under the National School Lunch and Child Nutrition

Program (Mirtcheva & Powell, 2009). The Free and Reduced Lunch Program is a federal program designed to provide breakfast and lunch to students whose household income falls below a certain financial threshold as determined by the federal government (U.S. Department of Agriculture, 2000). The Free and Reduced-Price Lunch program is frequently used as a proxy indicator of poverty (Domina et.al., 2018). Micheltore and Dynarski (2017) illustrated that children whose families have an income of 130% or less of the Federal poverty guideline can receive free meals at school, and those whose families have incomes from 131% to 185% of the poverty guideline are eligible for reduced price meals.

Greenman and Duffy (2018) demonstrated in a study that underrepresented secondary students, those who are economically disadvantaged, in many urban communities do not have access to AP courses. The researchers identified advanced mathematics and physics as “gatekeeper” courses to entry into physical science, technology, engineering and mathematics (STEM) careers and academic programs. Lacking opportunity to access rigorous courses, economically disadvantaged students have a difficult time competing in STEM related fields and academic programs with their peers from more affluent communities. Greenman and Duffy (2018) studied Project Accelerate, which is a partnership program between Boston University and the secondary schools. Project Accelerate’s model included a combination of supportive systems for students’ attending a traditional secondary school (Greenman & Duffy 2018). The participants enrolled in a highly interactive online Physics 1 course provided by the College Board as their school was not offering this course opportunity (Greenman & Duffy 2018). During the 2015-16 academic year, Boston University piloted this model with four Boston Public School (BPS) schools and three small suburban schools (Greenman & Duffy, 2018). The findings revealed after the first year of the pilot,

students enrolled in Project Accelerate outperformed their peer groups enrolled in traditional AP Physics 1 classrooms (Greenman & Duffy 2018).

Finn and Scanlan (2020) conducted a mixed methods study examining the role of AP courses as they serve to support economically disadvantaged secondary students achieve the highest level of academic success. The study reviewed data from College Board, Applied Education, Incorporated, the National Center for Education Statistics, the Civil Rights Data Collection, the United States Census Bureau, and interviews (Finn & Scanlan, 2020). The study closely analyzed the differences in AP participation and exam success by geography, race/ethnicity, and socioeconomic status, as well as AP's contribution to and potential for narrowing troubling gaps (Finn & Scanlan, 2020). Socioeconomic status was a large indicator especially considering the Advanced Placement Programs once focused on top students in elite private and public high schools (Finn & Scanlan, 2020). As referenced by the researchers within the study, low-income students enrolled in AP classes at less than a third of the rate of their middle and high-income peers attending the same school (Finn & Scanlan, 2020). The study presented Texas as an example that reflected gains in AP access and participation between 2003 and 2013 (Finn & Scanlan, 2020). The results were truly staggering, with the number of students from low-income backgrounds who earned at least one qualifying score rising from 5,700 to 22,900 (Finn & Scanlan, 2020). At the same time, however, the rate of low-income students earning a qualifying score actually fell, from 51 to 45 percent (Finn & Scanlan, 2020). Nationwide, according to the College Board (2013), 275,864 low-income graduates had taken at least one AP exam during high school; 131,911 earned at least one qualifying score or more, meaning that 48 percent of all AP exam-taking low-income graduates earned at least one qualifying score. Finn and Scanlan (2020) noted this as a respectable gain. The findings concluded that students from economically

disadvantaged communities do enroll in AP courses and achieve a score of 3 or higher on the AP exam and continue on with post-secondary success not limited to completing university studies (Finn & Scanlan, 2020). The results suggest that it is beneficial to open the AP door to more students because the academic gains are immediate, but also because its implications should reverberate through what precedes and follows it as students' progress on their educational journeys (Finn & Scanlan, 2020). Finn and Scanlan (2020) noted that not expanding access, regardless of the AP exam pass rates, would perpetuate social inequalities.

College Board (2013) reported in recent decades it has sought to help capable economically disadvantaged secondary students master college-level coursework before graduating. Although economically disadvantaged students are still underrepresented, there has been a dramatic increase in their AP participation. A similar study analyzed AP courses as highly accelerated interventions for economically disadvantaged students, but accessibility is not equally available to all students (LeBeau, 2020). LeBeau (2020) conducted a study to explore trends in AP participation and achievement in a mid-western state. The mid-western state introduced online AP coursework in a strategic effort to provide equal opportunities and access to AP for schools and students (LeBeau, 2020). This study assessed the effect of the online program on statewide AP enrollment and AP passing rates as a pathway to academic acceleration and achievement for economically disadvantaged students (LeBeau, 2020). The researcher acknowledges the lack of access to AP courses may contribute to documented disparities in AP participation between economically disadvantaged students and their counterparts (LeBeau, 2020). The findings of the study indicated that increased availability of AP coursework in the schools in the mid-western state increased access to AP in small to middle sized schools (LeBeau, 2020). However, the increased availability did not result

in increased AP exam participation (LeBeau, 2020). Exam-passing rates for students who took the AP exam were higher for schools that participated in the online program. The researcher recommended building pathways to academic acceleration and achievement for economically disadvantaged students through AP coursework as an option (LeBeau, 2020).

Research studies on student success often focus on the impact of discrete elements such as race, culture, ethnicity, gender, language, or school location on high achievement (Burney & Beilke, 2008). However, the condition of poverty, those who are economically disadvantaged, is not discrete, as it is an easily identifiable variable. In fact, research illustrates the increased difficulty in identifying high-achieving students who are living in poverty (Burney & Beilke, 2008).

Attitude Towards College

When schools create an expectation of attending college coupled with college conversations from various staff members students have a positive attitude toward college (Kuh, Kinzie, Schuh, et al., 2011). Schaefer and Rivera (2020) conducted a study of nine secondary students in urban school settings. Using narrative inquiry methods, conversations from nine students were examined to uncover how students' perception of their current school setting merged with their attitude towards college (Schaefer & Rivera, 2020). All nine students highlighted an engagement of self-awareness, the development of relationships with school personnel, frequent thoughts about the future, embraced school as a place of learning, and experienced school as "family" (Schaefer & Rivera, 2020). Powerful experiences unique to each student were also highlighted (Schaefer & Rivera, 2020). The findings were clear that preparing underrepresented students, like economically disadvantaged students, in urban settings for college and career is influenced by their attitude towards college (Schaefer & Rivera, 2020). While

students demonstrated agency and readiness for their next steps in life, the themes were also infused with students' ideas of the importance of forming critical relationships in school (Schaefer & Rivera, 2020). Relationships mattered to students and showed the greatest influence on the nine students' attitudes toward college (Schaefer & Rivera, 2020).

Research shows the importance of obtaining a postsecondary education in terms of accessing job opportunities, higher salaries, and improved benefits for a better quality of life in the United States (Knight-Diop, 2010). A 2010 study brings together literature on school-based caring for unrepresented students and the college preparation process (Knight-Diop, 2010). The study analyzed underrepresented students' perspectives and the complexities of caring embedded within the academic expectations, the school counseling structure, and students' participation in extracurricular activities (Knight-Diop, 2010). The findings provide insight into the ways secondary educators can create and sustain a college-going school culture focusing on the quality and alignment of institutional and interpersonal structures of care that improve the underrepresented students' educational experiences and attitude towards college (Knight-Diop, 2010).

A research study explored college-going cultures in high schools across the United States and the impact the college-going culture had on students' postsecondary choices (Bryan et al., 2017). The authors analyzed data from the Educational Longitudinal Study (ELS) of 2002 outlining students who completed the baseline survey while in 10th grade, the follow up survey in 12th grade, and the additional follow up survey two years after graduation. (Bryan et al., 2017). To analyze the data, they identified students with the intention to attend a post-secondary institution as the dependent variable with demographics and prior achievement as the control variables (Bryan et al., 2017). The independent variables were college expectations, which represented the students' view of

attending college, and the exposure to college talk in their high schools (Bryan et al., 2017). The authors analyzed the data using logistic regressions to establish patterns and make predictions about outcomes of the participants (Bryan et al., 2017). The findings showed that 70% of the participants in the sample attended college based on results of the second follow up survey (Bryan et al., 2017). Additionally, approximately 28% of the students either took or planned to take AP courses in high school to prepare for their post-secondary goals (Bryan et al., 2017). The findings further revealed that when schools create an expectation of attending college coupled with college conversations from various staff members students have a positive attitude toward college (Bryan et al., 2017). The study found, however, even with schools that establish a college-going culture through high expectations and reinforcement from staff, there were no supports in place to assist students in the college application process (Bryan et al., 2017).

Teacher Expectations and Interactions

According to Bandura (1977, 1989, 1993, 1997), the key to student success is based on teachers' belief expectation that they can impact student achievement on a campus regardless of circumstances surrounding students. In connection, Maslow's (1968) hierarchy of needs emphasized belonging as a necessity for students in a classroom community. Belonging as related to motivation and comfort is linked to the premise of academic achievement because students are able to fulfill the demands of a rigorous course when the classroom community is shaped by positive student teacher relationships (Maslow, 1968). A sense of belonging relates to the theory described as a "sense of fit" that a student feels to the classroom community (Allen et al., 2018). To this end, a classroom community that intentionally includes a reciprocal caring relationship between the teacher and students can improve students' attitudes towards academics (Tosolt, 2009). Similarly, Goodenow (1993) described school belongingness as a sense of

being accepted, valued, and encouraged by others and a feeling of inclusion in the life and school. Further research has provided evidence of the association between a sense of school community and a variety of motivational and academic benefits (Anderman & Freeman, 2004; Irvin et al., 2011). The overall consensus of school community research indicates that students who feel a sense of belonging to their school environments are more likely to develop positive psychological, academic, and social outcomes and better overall health and well-being when compared to students who feel unsupported and disconnected from their school (Juvonen, 2006).

In a study conducted in 2009 (Wang & Holcombe, 2010), the researcher examined the benefits and perceptions of a caring teacher as it relates to social and academic outcomes amongst middle school students. The purpose of this research was to examine how students perceive a caring teacher's actions based on the student's minority status (Wang & Holcombe, 2010). The study's sample consisted of minority students in a single county in a midwestern state in a predominately White school district with 54.5% females, 41.9% males and 3.5% of students not identifying their sex (Wang & Holcombe, 2010). The researchers designed a survey to assess a wide range of caring teacher behaviors to include interpersonal caring, academic caring and fairness caring (Wang & Holcombe, 2010). Additionally, the researchers used the analysis of variance (ANOVA) tests to analyze the types of minority groups amongst the student participants (Wang & Holcombe, 2010). The findings of this study indicate that junior high school students perceive caring teacher behaviors based on their minority group (Wang & Holcombe, 2010). Caring behaviors are perceived in relation to one's identified minority groups (Wang & Holcombe, 2010). While the minority groupings contributed to the study's limitations, the findings acknowledge culture as the method of recognition and connection to classroom experiences with teachers (Wang & Holcombe, 2010). While

teachers may intend to form caring relationships with their students, good intentions are not enough (Tosolt, 2009). If students do not perceive a teacher's actions as caring, then a relationship exists without the social and academic benefits. Howard (2001) suggested establishing mutual communication patterns to cultivate a positive classroom community in which students respond to a caring teacher's high expectations. For students to take advantage of high expectations and more advanced curricula, they require support from the people with whom they interact in their school community (Klem & Connell, 2004).

A supportive teacher student relationship positively influences student engagement as it relates to rigorous course work (Hughes et al., 2017). Further research suggests the teacher's role is important for quality of student learning experiences (Wubbels et. al., 2016). Teachers exert their influence on students through a variety of meaningful actions, such as providing assignments and homework; assessing students; collaborating with parents and other teachers; providing instructional, emotional and organizational support in their school and classroom community (Wubbels et al., 2016). Additional research supports a positive classroom community fostered by teacher student relationships contributes to academic motivation and an increase in self-regulatory skills for students (Shats & Solomon, 2002). In their 2018 study, Hughes and Cao investigated teacher perceived teacher-student relationship quality. The researchers used longitudinal trajectory analysis to investigate reported teacher warmth and conflict with students four years prior to and three years following the transition to junior high school (Hughes & Cao, 2017). The participant sample included 550 academically at-risk students. The researchers highlighted teacher support and connectedness as especially valuable as students transition to and through middle school (Hughes & Cao, 2017). Hughes and Cao (2017) acknowledged the difficult transitions occurring for students in middle school and associate the decline in student academic motivation, mental stability and academic

achievement. The findings illustrated an above average decline in teacher warmth; however, both warmth and conflict declined during the junior high school year (Hughes & Cao, 2017). Structural equation modeling (SEM) tested effects of the shifts in intercept and the post-transition slopes on reading and math achievement, teacher-rated engagement, and student-reported school belonging three years post-transition (Hughes & Cao, 2017). The data suggest that a supportive relationship with teachers at the beginning of junior high school develops a positive barrier for academically at-risk youth from declining school engagement and math achievement (Hughes & Cao, 2017). Effective schools provide at-risk students with a community of support that encourages school connectedness and educational engagement (Croninger & Lee, 2001).

Liou and Rotheram-Fuller (2019) investigated teachers with the highest performance rates in high poverty schools that had not yet achieved high performing status. The research highlighted that teachers with the highest scores used direct instruction in an engaging, well-paced respectful format (Liou & Rotheram-Fuller, 2019). The findings suggested that students felt a strong sense of positive identity with their classroom (Liou & Rotheram-Fuller, 2019). Moreover, teachers should express high expectations with corresponding support measures as well as work to create a caring classroom community (Liou & Rotheram-Fuller, 2019). Prior research relates perceptions of a caring, supportive relationship with a teacher and a positive classroom environment to school satisfaction and connectedness (Baker, 1999).

Similarly, the expressed underrepresentation of ethnic minority and economically disadvantaged students in gifted education must be understood in terms of broader school contexts and practices (Tomlinson & Jarvis, 2014). Recognizing and nurturing academic potential in ethnic minority and economically disadvantaged students is not a concern singular to the field of gifted education, but has roots in and implications for the broader

field of education (Tomlinson & Jarvis, 2014). Students identified as gifted most often receive instructional services by way of the College Board AP Program (VanTassel-Baska, 2005). Tomlinson and Jarvis (2014) conducted a qualitative study that investigated how teachers contributed to the academic success of minority students of high potential from economically disadvantaged backgrounds. The researchers collected observation, interview, and documentary data for two years at each of three case study sites (Tomlinson & Jarvis, 2014). The study sites consisted of three schools in the United States assigned the pseudonyms of Sunnydale High School, Flagstaff School, and Lionel Elementary School (Tomlinson & Jarvis, 2014). The selection of three schools in different locations and serving different student populations was intended to facilitate the investigation of common patterns across diverse cases (Tomlinson & Jarvis, 2014). The study sites had demonstrated effectiveness in supporting the academic success of minority students from low-income backgrounds (Tomlinson & Jarvis, 2014). The researchers recounted that the intention of this research was to study three different sites in which teachers were effective in supporting the academic success of students from minority, economically-disadvantaged backgrounds, including those with high academic potential (Tomlinson & Jarvis, 2014). However, over the course of the study, the researchers discovered only two school sites fit the desired school profile (Tomlinson & Jarvis, 2014). Furthermore, the findings indicated that teachers can positively affect achievement even if they have not mastered every aspect of teaching pedagogy (Tomlinson & Jarvis, 2014). To this end, further conclusions indicated a teachers' definitions of success shape students' opportunities for achievement (Tomlinson & Jarvis, 2014). Through challenging curriculum such as advanced mathematics, economically disadvantaged students with high potential can develop the capacities needed to comfortably navigate society.

College Readiness

The United States Bureau of Labor Statistics (BLS) (2015) reported that in 2024, total employment will reach 160.3 million, an increase from 2014 of almost 9.8 million jobs which will most likely be filled by workers with some post-secondary education. This finding continues to bring college readiness to the top of nation's list of efforts to close the gap between high school achievement and postsecondary expectations. Farrell (2009) stated post-secondary education is critical to success in today's economy and the changing requirements for a savvier and information-literate work force. As defined, college readiness refers to the set of skills, habits, and knowledge that students need to enter college with the capacity to succeed (Arnold et al., 2012). To this end, secondary education must continue to rely on AP courses as a college readiness model to create post-secondary options for economically disadvantaged students (Reid & Moore, 2008). Educators must be focused on aligning the counseling, academic, social, and emotional expectations for college and ensure that students receive this information assessing their level of readiness while they are completing high school (Farrell, 2009; Kirst & Venezia, 2001). Establishing the inclusion of constructs beyond academic readiness alone in the definition of "ready," such as emotional and social readiness, can help to contribute to high school expectations that lead to more students entering college ready to be successful (Conley, 2007; Farrell, 2009).

Research adds that one of the major reasons that students are not successful in college is the gap between their high school experiences and college expectations (Barnett, 2006; Born, 2006; Byrd & McDonald, 2005; Conley, 2005; Farrell, 2009). According to a national study utilizing statistics from the U.S. Department of Education, approximately 70% of all students who are enrolled in public high schools graduate and from those graduates as few as 32% complete high school with the qualifications to

attend four-year colleges (Greene & Forrester, 2003). Graduating with high school credits alone has not provided the readiness foundation students need to be successful in college (Roderick et al., 2009). Similarly, few junior high schools and high schools have successfully and intentionally implemented all the elements necessary to align their programs for college success (Martinez & Klopott, 2005).

Access to AP courses has been identified as an indicator of college readiness (Kettler & Hurst, 2017; Roderick et al., 2009). Kettler and Hurst's (2017) study acknowledged that the participation in advanced academic programs increases college readiness. The study addressed the ethnicity gaps in advanced academic programs in suburban schools (Kettler & Hurst, 2017). Additionally, the study found that in suburban schools, there was a disproportionate enrollment of underrepresented students in advanced academic programs as compared to White students (Kettler & Hurst, 2017). White students are benefitting from AP and International Baccalaureate (IB) courses as they heavily support the transition to college (Kettler & Hurst, 2017). The study demonstrated that underrepresented students participate in advanced academic programs at an abbreviated rate as compared to White students (Kettler & Hurst, 2017).

In comparison, Flores and Gomez (2011) examined increased equity concerns in the last two decades related to the efforts from the College Board, state education agencies, and educational leaders to increase advanced academic participation among underrepresented groups. Flores and Martinez (2011) focused on underrepresented student participation gaps in AP and IB programs, two widely implemented advanced academic opportunities in the United States. This study used experimental research design based on the terms used in the data analysis section such as multiple regression (Flores & Martinez, 2011). The study analyzed two regression models: White-Black participation gap and the White-Hispanic participation gap. Also mentioned, there were

seven predictor variables used in multiple regression analysis (Flores & Martinez, 2011). This research collected data in Texas from 117 suburban high schools. Of the schools reviewed, 79 of the schools were in close proximity to low income neighborhoods and schools. This longitudinal analysis occurred over a 10-year period magnifying the multiple regression analysis of the ethnicity gap in AP/IB participation. The research supports those underrepresented students do not participate in advanced academic courses at the same rate at the same school as their White peers participate (Flores & Martinez, 2011). Similarly, other studies report an achievement gap at the college level as measured by college GPAs. The achievement gap persisted but did not increase even though participation rates rose over ten years for all subgroups (Flores & Martinez, 2011).

Similarly, Morgan, Sinatra, and Eschenauer (2014) described a four-year study for academically and economically disadvantaged students. The purpose of the study was to analyze how a college readiness program helped academically and economically disadvantaged students complete high school, prepare them for college, and showed them that adults were invested in their future (Morgan et al., 2014). Gaining Early Awareness and Readiness for Undergraduate Program (GEAR UP), the college readiness program, offered to 294 academically and economically disadvantaged students during school and out of school time activities through partnerships forged with school personnel and community-based agencies (Morgan et al., 2014). The study's urban schools reported annual graduation rates fall below 60% with the graduation rate of the GEAR UP students of whom 60% were Hispanic and African American was 95%, while 58% enrolled in a postsecondary institution soon after graduation (Morgan et al., 2014). The researchers implemented a mixed-methods approach that incorporated both quantitative and qualitative components, which served to strengthen the validity of the study (Morgan et al., 2014). Focus groups provided a qualitative methodology for gaining insights into

the beliefs and perceptions of the participating students (Rabiee, 2004) and individual interviews conducted with former GEAR UP participants provided insights into both the program's impact and understanding of how engagement may have assisted youth of low-income status (Wikeley et al., 2009). The findings highlighted that despite the time spent in the program's activities, students commonly believed that the program significantly helped to prepare them for college (Morgan et al., 2014). Additionally, a five-item survey completed by parents also corroborated and supported the student's reflection (Morgan et al., 2014).

Research projected that 10% of eighth graders are on course to graduate from high school without the need to take a remedial course in college (Wimberly & Noeth, 2005). In 2001, colleges required nearly one-third of all first-year students to enroll in remedial courses, costing public universities over one billion dollars annually (Bettinger & Long, 2009). Remedial courses at the college level reflect a lack of academic knowledge and those students are generally not prepared for college in other ways (Goldrick-Rab, 2010). In a similar statistical analysis report, remedial courses were described as courses designed to strengthen academic skills, and specifically concentrated among students with limited academic preparation (NCES 2016). The report illustrated remedial course enrollment at two-year and four-year collegiate institutions. Among those beginning at public two-year institutions, 75 percent of unprepared students, compared with 48 percent of strongly prepared students, took remedial courses during their college years (NCES, 2016). Among those beginning at public four-year institutions, the remediation rate for unprepared students was more than four times than for strongly prepared students, 77 percent versus 18 percent (NCES, 2016). These findings reflect misalignment between high school and college academic standards (Dillon & Smith, 2013; Hughes & Scott-Clayton, 2011; Kurlaender & Howell, 2012).

Participation in remediation courses was more common among several demographic groups, including Blacks and Hispanics at both types of institutions; students from low income backgrounds at both types of institutions, first-generation students at public four-year institutions; and female students at public two-year institutions (Perna & Kurban, 2013; Price, 2005). To this end, as 8th grade students transition to high schools, high schools have relied on the AP Program as a method to increase the rigor of the curriculum to produce more college-ready students (Conley, 2010).

Novak (2017) conducted a study to determine if completion of AP courses has a relationship to college readiness as defined by enrolling in a postsecondary remedial course. This research study used a quantitative research methodology (Novak, 2017). Data utilized in this study were taken from the restricted dataset of the ELS:2002, a longitudinal study that collected data pertaining to the academic behaviors of students in the Class of 2004 (Novak, 2017). The data models also indicated students who completed one or more AP Carnegie units in high school had 1.56 times lower odds of taking a remedial course as compared to their peers who completed no AP courses (Novak, 2017). The results support researchers' claims regarding AP courses enhancing the production of a more college-ready student, and completion of such courses should lessen the likelihood of enrollment in postsecondary remedial education courses (Kim & Hargrove, 2013; Dougherty et al., 2016).

School Wide Support

As essential school stakeholders who build trusting, supportive relationships with economically disadvantaged students, the outcome of these relationships help foster independence and self-esteem amongst students while protecting them from the deleterious effects of poverty (Foster, 2013). Bell et al. (2014) recounted that principals, teachers and counselors are essential school stakeholders who provide opportunities that

will help students overcome the barriers of poverty by way of a high-quality education and enrichment courses. Students who feel a connection with school have increased academic achievement rates (Bell et. al., 2014). Solomon and Battistich (1993) conducted a study to examine school wide connectedness. The study outlined community as it was perceived by students and teachers in 24 elementary schools in six school districts (Solomon & Battistich, 1993). Results indicated that students and teachers favored an inclusive school community where belonging was synonymous for all students (Solomon & Battistich, 1993). Students recounted feeling supported by their teachers, which lead to a greater sense of connection to their school (Solomon & Battistich, 1993). Students also indicated a high level of caring from their teacher which was illustrated by collaborative decision making with teachers and peers (Solomon & Battistich, 1993). As a highlight, the research results reveal that teachers were committed to building positive school community to promote student achievement (Solomon & Battistich, 1993). Student connectedness is developed through a caring and supportive culture. Through school wide support, the expectation of college-going can be strongly encouraged (Solomon & Battistich, 1993).

Research supports school wide approaches to increase college-going can potentially improve postsecondary education outcomes for all students (Bosworth et al., 2014). A 2014 study reviews the ongoing process and challenges to establish school wide approaches using qualitative analysis (Bosworth et al., 2014). Interviews were conducted with school leaders at five public high schools in the Southwest region of the United States (Bosworth, 2014). This study described how school leaders define college-going culture and identified the key approaches to promote college-going in their schools (Bosworth, 2014). The school leaders developed a common college-going culture definition, but each cited different approaches and resources to achieve the purpose of

supporting college-going in their own schools (Bosworth et al., 2014). The study cites that the aspiration to attend college is strong in high school students of all backgrounds (McWhirter et al., 2007). For example, in a subset of low-income secondary students, 73% planned to enter college after high school graduation (Berzin, 2010). Because aspiration is the first step in the college-planning process, numerous programs have focused on raising student aspirations (Lozano et al. 2009). Research into access for underrepresented groups, has, however, uncovered several potential obstacles to the college-going aspirations of those students (Kimura-Walsh et al., 2009). They may have limited knowledge of or access to the information that is needed to make informed choices about college and to navigate the process of actually attending college (McDonough & Calderone, 2006). A school culture conducive to college-going can also promote postsecondary aspirations among students (Engberg & Wolniak, 2010). Some research indicates that college-promoting structures and processes that are available to all students in a school may prove to be the most effective means of increasing college attendance rates among minority, urban, and low-income students (Amaro- Jiménez & Hungerford-Kresser, 2013).

The findings indicated overlapping definitions for a college-going culture by the interviewed school leaders yet cited a range of different activities and programs at their schools. These multiple activities at a particular school were generally subsumed under the name of one signature program or activity. This signature program, different for each school, offered at least a rudimentary framework organizing the school's various college-going activities and goals.

Parental Engagement

Dietel (2006) explained parents who demonstrate they value education positively impact their children's academic performance on standardized tests (Dietel, 2006).

Students' academic and postsecondary choices are often shaped by their own parents' experiences, and the information they receive about processes, deadlines, and requirements (Tornatzky et al., 2002). A 2020 study focused on the impact of college access explained the influence of parents' and families' efforts (Amaro-Jimenez et al., 2020). The study reviewed college awareness and outreach programs meant to inform parents about college and career readiness, especially for parents of first-generation college students, those who are the first in their families to go to college (Amaro-Jimenez et al., 2020). Parents took part in day-long conferences with educational stakeholders, including high school counselors, community college and university admission counselors, as well as nonprofit organization staff. The researchers identified the positive impact of the program on all parents, regardless of background or educational level, and the ways in which they benefit from participating in career and college outreach programs (Amaro-Jimenez et al., 2020). Moreover, parents who have ongoing discussions with their children about short- and long-term educational goals can help shape their future academic lives (Jeynes, 2007).

The findings were positive in that parents who participated in the conferences made gains in their college readiness knowledge, regardless of ethnicity or educational background (Amaro-Jimenez et al., 2020). The researchers reported this as an important finding because the original assumption was that gains would only be evident in the parents of prospective first-generation college students and those with lower education levels (Tornatzky et al., 2002). However, as the data showed, these gains were consistent across groups, though the gains from those with graduate degrees were smaller than the rest (Tornatzky et al., 2002). Additionally, the findings seem to indicate that college access and educational initiatives that prepare and support families in their information gathering about educational paths after high school are necessary, regardless of the

education level and socioeconomic status (Tornatzky et al., 2002). Steinberg et al. (1992) determined that parents having high expectations for their children can positively impact achievement and college enrollment outcomes. Jeynes (2007), in considering the notion that voluntary parental involvement is substantially important for college-going aspirations, suggested that parental involvement programs are effective even for parents who appear to be uninvolved. Hill & Wang (2015) conducted a longitudinal study to determine if underrepresented students and White American students, along with their parents' parenting practices, had significant effects on their college enrollment. This study analyzed the influences of parental involvement on college-readiness and postsecondary success (Hill & Wang, 2015). Parental involvement was documented as equally beneficial for supporting aspirations, engagement and achievement across ethnicity (Hill & Wang, 2015). The study defines parenting practices as monitoring, warmth and autonomy support (Hill & Wang, 2015). The study also included a comparison of student aspirations and school engagement (Hill & Wang, 2015). To this end, the study began its examination at the middle school level to determine the early benefits of positive parenting practices related to college enrollment (Hill & Wang, 2015). Hill and Wang (2015) cited the participants of the study as underrepresented students, African American students, and White American students with similar socioeconomic status. Additionally, the study identified the following as measures: post high school enrollment; school engagement; educational aspirations; parenting practices; demographic variables (Hill & Wang, 2015). The research explained the data were analyzed with a structural analysis equation with respect to students within 23 schools (Hill & Wang, 2015).

Hill and Wang (2015) revealed that parenting practices during middle school are positively associated with college enrollment post high school. Specifically, they explained that three parenting practices – parental warmth; autonomy support; monitoring

matter – were connected to students’ aspirations, GPA and engagement (Hill & Wang, 2015). Students reported positive day-to-day interactions and the ability to manage tasks respectively (Hill & Wang, 2015). Another important highlight mentioned in this study’s results was students’ emotional management (Hill & Wang, 2015). Schools are complex social settings which at times do not foster a culture of belonging. However, Hamlin and Flessa (2018) explained students with positive parental monitoring affirmed their identities and associations with peers. Hamlin and Flessa (2018) boasted that in order to gain postsecondary success such as a college degree, which is necessary to earn a living wage, parental involvement is vital to college readiness. Parents remain the most important sources of information for junior high students (Hamlin & Flessa, 2018).

Summary of Findings

A purposeful focus on the access to AP courses in junior high school is critically important to economically disadvantaged students as it is an avenue to completing high school and having a viable path to and through postsecondary education (Grigal et al., 2019). Although most junior high school students report a desire to pursue postsecondary education or training, a significant proportion are not actively engaged in AP courses in junior high school (Kettler et al., 2006). Research studies highlight the importance of early exposure to AP courses for junior high school students with an economically disadvantaged background (Tomlinson & Jarvis, 2014). Enrollment has increased in AP courses though economically disadvantaged students still are significantly underrepresented. Nationwide, one in ten students from low-income families will take an AP course, compared to one in four students from middle or high-income homes (Ruiz Alvarado et al., 2020). Continuously, the increases in AP enrollment have done little to close these large disparities. The gains that have been made among historically

overlooked students have been concentrated in a minimal number of school districts (Ruiz-de-Velasco & Fix, 2000).

Theoretical Framework

The theoretical framework that provides a structure for this research is Coleman's (1988) theory of social capital. Social capital refers to the social connections or networks between people in a social setting that assist people and is often defined by the functions of social capital itself (Winkle-Wagner, 2010). Education is an investment in individuals and thereby, by society, in terms of earnings and economic growth. Through education, ways for individuals to gain more social mobility and contribute to national economic growth are created. Education thereby increases individuals' opportunities for employment (Tan, 2014). Social capital works to provide individuals increased access to resources and information throughout their life (Aziz, 2015). However, individuals with limited amounts of human capital often meet institutional resistance when attempting to access resources that lead to better educational opportunities (Aziz, 2015).

Conclusions

Students identified as economically disadvantaged who do not participate in at least one AP course at the junior high school level lack the college readiness necessary for post-secondary success (Cisneros et al., 2014). However, there is limited research investigating implications of junior high school early access to AP courses for economically disadvantaged students. There is a call for research that addresses the social capital theoretical framework related to secondary education. The social capital theoretical framework demonstrates the benefits of participating AP courses for students at the junior high school level. AP courses are linked to positive college and career opportunities. This chapter presented a review of literature relating to the purpose of this study, which was to examine the social capital of economically disadvantaged students

and the students' perceptions of their middle school experiences related to college readiness. In Chapter III, methodological aspects of this dissertation are detailed to include the operationalization of theoretical constructs, research purpose and questions, research design, population and sampling selection, data collection procedures, data analysis techniques, privacy and ethical considerations, and the research design limitations for this study.

CHAPTER III: METHODOLOGY

The purpose of this mixed methods study was to examine the social capital of 7th and 8th grade students enrolled in advanced mathematics courses. This study includes survey data collected from an individually matched sample of 7th and 8th grade students enrolled in advanced mathematics courses in a large urban school district in southeast Texas. Additionally, interviews were conducted to provide a more in-depth understanding of the potential impact of social capital on advanced mathematics course enrollment which is related to college readiness. The quantitative data were analyzed using frequencies, percentages and independent t-tests. The qualitative data were analyzed by an inductive coding method using data collected from the student interview transcripts. This chapter presents an overview of the research problem, operationalization of theoretical constructs, research purpose and questions, hypothesis, research design, population and sampling selection, data collection procedures, data analysis, privacy and ethical considerations, and the research design limitations for this study.

Overview of the Research Problem

According to the College Board (2013), Advanced Placement (AP) courses were designed to be a rigorous curriculum meant to develop college readiness skills amongst secondary students. In similar research, Bernhardt (2014a) explained that students exposed to the AP curricula are more prepared for entry level college course work or similar post-secondary course work. Positive post-secondary outcomes such as increased graduation rates, job security, and community involvement are accessible for students who complete one or more AP courses (Mathers, 2019). As seen in enrollment rates amongst economically disadvantaged students, unequal access to AP courses persist despite national and local improvement efforts (Garland & Rapaport, 2018). The strong

negative correlation suggests that post-secondary educational attainment remains a constant challenge for economically disadvantaged students (Considine & Zappala, 2002). Economically disadvantaged students, traditionally underrepresented students, Hispanic, or African American, enrollment in Advanced Placement courses is not comparable to their white and Asian counterparts (College Board, 2013).

Nicholas (2016) highlighted the exposure to rigorous curriculum as the single most important predictor of college readiness. As an added benefit for future success, College Board (2013) reports indicated students enrolled in AP courses have a commitment to life-long learning and access to opportunity. Considering these benefits, the role of AP courses in the junior high school setting becomes paramount as early exposure equates to an increased level of college and career readiness. In the last decade, much attention has been placed on factors such as course availability, extracurricular activities, and academic tracking as well as overall school connectedness for junior high school students (Kowski, 2013). An emphasis on AP course enrollment amongst junior high school students serve as a positive solution set to barriers such as lack of parental involvement and the influences of low socioeconomic status (Suldo, 2018).

Operationalization of Theoretical Constructs

This study consists of two constructs: (a) social capital and (b) socioeconomic status. Social capital refers to a framework of relationships between students and schools in terms of college readiness. This construct was measured using a modified *High School Follow-Up Survey* focusing on the following areas: (a) attitude toward college, (b) teacher expectations and interactions, (c) college readiness, (d) school wide support and (e) parent engagement (Leal, 2008). The socioeconomic status of a student is measured by their eligibility for free or reduced-price meals under the National School Lunch and Child Nutrition Program (U.S. Department of Agriculture, 2012). The Free and Reduced

Lunch Program is a federal program designed to provide breakfast and lunch to students whose household income falls below a certain financial threshold as determined by the federal government (U.S. Department of Agriculture, 2012).

Research Purpose and Questions

The purpose of this study is to examine the social capital 7th and 8th grade students enrolled in advanced mathematics courses. The research questions guiding this study are:

1. Does economic status influence attitude towards going to college for 7th and 8th grade students in Advanced Placement mathematics courses?
2. Does economic status influence teacher expectations and interactions for 7th and 8th grade students in Advanced Placement mathematics courses?
3. Does economic status influence college readiness for 7th and 8th grade students in Advanced Placement mathematics courses?
4. Does economic status influence school-wide support for 7th and 8th grade students in Advanced Placement mathematics courses?
5. Does economic status influence parent engagement for 7th and 8th grade students in Advanced Placement mathematics courses?
6. How do economically disadvantaged students enrolled in 7th and 8th advanced mathematics courses perceive their educational experiences in terms of preparation for college, including academic readiness and college career readiness?

Research Design

For the purposes of this study, a mixed methods study was designed to examine the social capital of 7th and 8th grade students enrolled in advanced mathematics courses. This study consisted of two phases: a quantitative phase and a qualitative phase. A mixed methods study was appropriate for this study as it allowed the researcher to thoroughly examine the problem by adding a descriptive context to the quantitative data. The qualitative data provided clarity and a deeper understanding of the quantitative data. A matched sample of 7th and 8th grade students enrolled in advanced mathematics courses were selected to complete a modified *High School Follow-Up Survey* and participate in interviews. The participants' demographic and course information (i.e. gender, race, grade level, socioeconomic status, and course selection) were obtained through the schools' information data system. Quantitative data were analyzed using descriptive statistics and independent t-tests, while qualitative data were analyzed using an established inductive coding process.

Population and Sample

The population of this study consisted of a large urban school district in southeast Texas. This school district is composed of 31 campuses: three high schools, one academic alternative school, one behavior alternative school, seven junior high schools, 18 elementary schools, and employs 1,771.4 teachers (TEA, 2017). Table 3.1 provides the student district data obtained from the 2019-2020 Texas Academic Performance Report. At the time of study, the school district had a total enrollment of 26,885 students with 49.2% of the population identified as economically disadvantaged, 16.5% of the population identified as English Language Learners (ELL), and 45.5% of the population identified as Title I.

Table 3.1:

District Student Demographic Data: 2019 - 2020

	Frequency (n)	Percentage (%)
Female	13,057	48.6
Male	13,828	51.4
African American	5,857	21.8
Hispanic	11,320	42.1
White	6,322	23.6
American Indian	55	0.2
Asian	2,590	9.6
Pacific Islander	19	0.1
Two or More Races	712	2.6
Economically Disadvantaged	13,200	49.2
English Language Learners	4,424	16.5
Title I	12,236	45.5

A purposeful sample of junior school students (7th – 8th grade) in the participating district were solicited to participate in this study. The four junior high schools within this study are comprehensive grade 6-8 campuses with student enrollment ranging from 989 to 811. Each campus has only one principal and two full-time assistant principals. Table 3.2 presents the district and junior high student enrollment data.

Table 3.2:

Student Enrollment for the District and Junior High Schools

	District	A	B	C	D
Grade 6	2,189	286	295	314	314
Grade 7	2,114	271	251	312	314
Grade 8	2,105	270	265	284	361
Student Total (n)	6,408	827	811	910	989

Overall, the district serves 6,408 students in the junior high schools. The enrollment of students in sixth grade ranges from 314 to 286, seventh grades range from 314 to 251, and eighth grade enrollment ranges from 361 to 265 students. For the purpose of this study, 7th and 8th grade students in advanced mathematics courses were selected from each of the four campuses to participate in the study based on its campus demographics and locations within the school district. Junior High School A and C are on the district's west side. Junior High School B and D are on the district's far east side. The four selected junior high schools have an economically disadvantaged student population underrepresented in advanced mathematics courses as well as one race appearing to be more dominant than the others. An individually matched sampling technique was used to compare economically disadvantaged students to non-economically disadvantaged students enrolled in Advanced Placements courses. The students were individually matched using the following criterion: course selection, gender, race/ethnicity, grade level, and economic status as defined by the student's free and reduced lunch coding.

Participant Selection

The participants for the qualitative portion of the study were selected from participants who completed the modified *High School Follow-Up Survey*. There were two

focus groups per junior high school campus: one economically disadvantaged student group and the other non-economically disadvantaged student group. Each focus group consisted of four students. The students for the focus groups were selected to balance advanced mathematics enrollment, economic status, race, ethnicity, gender, grade level, and at-risk indicators. The two types of focus groups were designed to distinguish the possibility of varied responses as they relate to their socioeconomic status.

Instrumentation

The High School Follow-Up Survey was created by Leal (2008) and examines the unique student populations' school experiences related to college preparation. A panel of experts used their experience and knowledge with the socioeconomic and cultural environment of the issues associated with the study to validate the instrument. The panel included doctorate level professionals as well as high school administrators and counselors who worked with low socioeconomic students and sought to improve the level of college readiness for these students. Leal conducted a pre-test to aid in assessing reliability. The final section of open-ended response items allows for a better understanding of the students' high school experiences. A group of 15 students were given the survey as a pilot group on two separate occasions. A correlation coefficient of 0.70 or greater was used to determine reliability among the two administrations of the pilot group (Leal, 2008).

The completed version of the *High School Follow-Up Survey* consists of 64 items divided into nine sections: (a) family background information (14 items); (b) attitude toward college (6 items); (c) academic achievement (7 items); (d) teacher expectations and interaction (5 items); (e) college readiness (7 items); (f) school-wide support (9 items); (g) guidance and counseling (10 items); (h) parent engagement (5 items); and (i) open-ended questions (4 items). Section one provides background information about the

participants. This information consists of family demographics, college plans, and home language. In sections two through eight participants are asked to rate their high school experience on a 5-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Disagree) on a total of 49 items.

For the purpose of this study, the *High School Follow-Up Survey* was modified to accommodate junior high school students in the 10 to 14-year-old age range. For example, “In high school, I worked hard to learn as much as I could in class” was changed to “In junior high school, I work hard to learn as much as I can in class.” Additionally, in order to reduce fatigue and maximize engagement, the *High School Follow Up Survey* excluded the open-ended questions (4 items).

Data Collection Procedures

Quantitative

Prior to the data collection, the researcher gained approval from the school district where the study took place, and the University of Houston - Clear Lake (UHCL) Committee for Protection of Human Subjects (CPHS) before any data were collected. Following CPHS approval, the junior high school principals of the selected schools were contacted to discuss the purpose of the study, the process for collecting the student survey data, and conducting the individual interviews. The researcher and principal met with the students to explain the survey and the data collection process. A letter of parental consent and student assent explaining the survey, with space for a parent signature, was provided to each student identified to participate in the study. The parental consent forms included the purpose of the study, that participation in the study was strictly voluntary, the survey administration procedures, interview procedures, that students’ identities would be protected by codes or pseudonyms, and participation can stop at any time. All students

were given an Adolescent Participation Assent forms which required a parent signature of approval. Appendix A contains the informed consent form with the parent signature line.

The survey was administered to the students in advanced mathematics courses. The principal and teachers had access to the survey link to provide to the students. Students returned their consent forms to the teacher, who then provided access to the survey. Students were allowed to stop at any time if they did not want to complete the survey and their data were removed from the study. The data from the survey responses were transferred to an Excel spreadsheet and then to a SPSS database for further analysis.

Qualitative

Focus group sessions were conducted with students who completed the survey used in this study. There were two groups per junior high school campus. The focus groups were separated by economic status: one focus group for economically disadvantaged students and the other for non-economically disadvantaged students. The two types of focus groups were designed to distinguish the possibility of varied responses as they related to their socioeconomic status. There were nine focus group questions providing the qualitative data source for this portion of the research study. Each focus group session did not exceed forty-five minutes and were conducted in classroom of the school or through a virtual meeting space. In order to ensure the junior high school participants understood the questions, the student participants were provided the questions prior to the focus group session. The researcher established a focus group protocol for the session to make student participants aware of process as well as to maintain timely focus group sessions. The student participants represent a diverse balance of students based on race and ethnicity as well as a balance of male and female students. Each session was recorded, and the recordings were downloaded to a protected file. The researcher transcribed the recordings for the purpose of analysis. All data were secured in

a password-protected folder on the researcher's computer and in the researcher's office within a locked file cabinet at all times. At the culmination of the study, the data will be maintained by the researcher for five years, which is the time required by CPHS and district guidelines. The researcher will destroy the contents of the file once the deadline expires.

Data Analysis

Quantitative Analysis

IBM SPSS was used to analyze the quantitative survey data. To answer research questions one through five, a two-tailed independent t-test was conducted to determine if there is a statistically significant mean difference in the social capital of 7th and 8th grade students enrolled in AP mathematics courses. The independent variable was divided into two groups: (a) economically disadvantaged students enrolled AP mathematics courses and (b) non-economically disadvantaged students enrolled in AP mathematics courses. The dependent variable, social capital, was measured by: (a) attitude toward college; (b) teacher expectations and interactions; (c) college readiness; (d) school wide support; and (e) parental engagement. To determine effect size, Cohen's d and the coefficient of determination (r^2) was used (Cohen, 1998). A significant value of 0.05 was used.

Qualitative Analysis

Considering the quantitative data findings, student focus groups were developed in an attempt to provide more in-depth understanding, and provide a rich narrative surrounding the phenomena of the relationship between advanced mathematics course enrollment and economic status. To answer research question six, qualitative data were gathered from the student focus groups, analyzed, and coded for themes. The data were sorted and categorized by themes. Obtaining additional data allowed the researcher to further study the constructs in greater detail. The open-ended questions were designed to

provide an in-depth understanding of the general themes that emerges from the quantitative of the study. The interview data were analyzed using a constant comparative inductive coding process in order to create an understanding of the students' perceptions of their experiences in advanced mathematics course in junior high school as it relates to college readiness (Coffey & Atkinson, 1996).

The data analysis included a process of data reduction, display, conclusions, and verifications (Berg, 2001). Data reduction allows for data to be more accessible and coherent and allowed for the extraction of relevant themes and patterns. This process took place through the transcription of the audio recordings, the organization of the data into recurring themes, and the translation of the data into written summaries. The coding process began by recognizing in-vivo codes (Belotto, 2018). After identifying the appropriate codes, an emphasis was placed on the search for themes and patterns from the data (Coffey & Atkinson, 1996). Once the categories were established, codes were again organized into subcategories and findings recorded. Conclusions were made based upon the findings, which included major themes that emerged from the data.

Qualitative Validity

The qualitative analysis process included validation through the triangulation of individual student responses by campus. The data obtained from the surveys and student focus groups were compared amongst participating campuses to ensure validity. The data collected during the student interview sessions were subject to member-checking. Member checking included a review of the preliminary results and transcripts by the student participants, which allowed an enhanced validation of the responses provided (Candela, 2019). Through the member checking process, the researcher hosted a review session with the audio recording and transcripts with the focus group participant. Additionally, the interview questions and results were peer reviewed by experienced

educators and campus administrators in order to ensure questions are valid. The purpose of the focus groups was to obtain valuable feedback related to the interview questions related to their perceptions of college readiness.

Privacy and Ethical Considerations

The researcher gained approval from the UHCL's Committee for Protection of Human Subjects (CPHS) and the school district in which the study took place prior to any data collection. Adolescent Participation Assent forms explaining the study, the data collection procedures, and the survey and individual student interview procedures were given to each student identified to participate in the study. The Adolescent Participation Assent forms outlined that participation in the study is voluntary, student identities are confidential, and they can stop participating at any time. Students' ages 10 – 14 years old at the time of data collection were given Adolescent Participation Assent forms that required parental consent. For students participating in the individual interviews, the researcher provided reassurance that information discussed was confidential and should not be discussed outside of the interview. However, there is no method to ensure no further conversation continues beyond the interview session. The data will be kept secure in the researcher's office. The faculty sponsor will keep all data for five years before destroying the data.

Research Design Limitations

The research design consisted of several limitations. First, the researcher depended on the student's ability to evaluate their perceptions of college readiness and explain the opinions related to this concept. However, the students' ability to reflect and self-report is only as accurate as the students' honesty. Skewed data derives from dishonest students' answers which may not be intentional; however, it is not an accurate representation of their perceptions of college readiness. Second, the age and grade level

of the student participants is considered a limitation. Provided that the survey and student interviews were administered to 7th and 8th students, their level of understanding and depth of responses is limited by their experiences. Their answers can be considered generalized or borrowed language. Finally, considering there are seven junior high schools within the school district, the researcher included four junior high schools for this study. While the demographics are comparable to the three schools excluded, the insight available in an inclusive study could provide a more complete picture for district level administrators. Decision-making could be more informed if all seven schools were included in this research study.

Conclusion

The purpose of this mixed methods study was to examine the social capital of 7th and 8th grade students enrolled in advanced mathematics courses. This chapter provided an overview of the research problem, operationalization of the theoretical constructs, research purpose, questions, hypotheses, research design, population and sampling selection, instrumentation to be used, data collection procedures, data analysis, privacy and ethical considerations, and the research design limitations of the study. Chapter IV discusses survey and individual interview data and analysis in further detail.

CHAPTER IV:

RESULTS

The purpose of this mixed methods study was to examine the social capital of economically-disadvantaged 7th and 8th grade students enrolled in advanced mathematics courses in the areas of attitude toward college, teacher expectations and interactions, college readiness, and school wide support and the students' perceptions of their junior high school experiences related to college readiness. This chapter presents the findings of quantitative and qualitative data analysis of the study. First, an explanation of the participants' demographics are presented, followed by results of the data analysis. This chapter presents the data analysis for each of the six research questions. This chapter concludes with a summary of the findings.

Participant Demographics

In February 2021, 285 parents consented to having their student participate in the survey and focus group sessions. The participants in advanced mathematics courses were individually matched by gender, race, at-risk, and economic status to create a group of economically disadvantaged students and non-economically disadvantaged students enrolled in advanced mathematics courses. The final sample consisted of 66 economically disadvantaged students enrolled in advanced mathematics and 66 non-economically disadvantaged students enrolled in advanced mathematics. Table 4.1 shows the participant's gender and race demographics for the matched data used for data analysis. Of the 132 matched student participants, 66 students indicated they were female (50.0%), while 66 students indicated they were male (50.0%). Of the 132 matched

student participants, 30 students (22.2%) indicated they were African American, 58 students (43.0%) indicated they were Hispanic, 14 students (10.4%) indicated they were White, 18 students (13.3%) indicated they were Asian, and 12 students (8.9%) indicated they were Two or more races. Of the matched student participants, six focus groups were developed in an attempt to provide more in-depth understanding of the relationship between advanced mathematics course enrollment and economic status. Table 4.2 includes background demographics on the participants in the matched groups. The background demographics provide more information on the students' families, parental education level, and the participants' post high school plans. The education level of the participants' fathers is similar in each group. The education level of the participants' mothers varies in three categories: high school graduate, associate's or bachelor's degree, and master's degree.

Of the non-economically disadvantaged students in advanced mathematics classes, 7.6% indicated their mothers completed high school compared to 21.2% of economically disadvantaged students in advanced mathematics classes. Similarly, 36.4% of non-economically disadvantaged students in advanced mathematics classes indicated their mothers earned an associate's or bachelor's degree compared to 22.7% of economically disadvantaged students in advanced mathematics classes. Interestingly, 27.3% of non-economically disadvantaged students in advanced mathematics classes indicated their mothers earned a master's degree compared to 15.2% of economically disadvantaged students in advanced mathematics classes. Additionally, 3.0% of economically disadvantaged students in advanced mathematics classes selected

professional degree for mother's level of education whereas 7.6% of non-economically disadvantaged students in advanced mathematics classes selected the same level for their mothers' education.

Table 4.1:

Participant Demographics (%)

Demographic	Economically Disadvantaged	Non-Economically Disadvantaged
Male	50.00 (n = 33)	50.00 (n = 33)
Female	50.00 (n = 33)	50.00 (n = 33)
African American	22.7 (n = 15)	22.7 (n = 15)
Hispanic	43.9 (n = 29)	43.9 (n = 29)
White	10.6 (n = 7)	10.6 (n = 7)
Asian	13.6 (n = 9)	13.6 (n = 9)
Two or More Races	9.1 (n = 6)	9.1 (n = 6)

Table 4.2:

<i>Education Level of Participant's Mother and Father (%)</i>		
Demographic	Economically Disadvantaged	Non-Economically Disadvantaged
1. Mother's education level		
Did not finish high school	9.1 (n = 6)	4.5 (n = 3)
I do not know	28.8 (n = 19)	16.7 (n = 11)
High school graduate	21.2 (n = 14)	7.6 (n = 5)
Associate's or bachelor's degree	22.7 (n = 15)	36.4 (n = 24)
Master's degree (2 – 3 Years)	15.2 (n = 10)	27.3 (n = 18)
Professional graduate degree	3.0 (n = 2)	7.6 (n = 5)
2. Father's education level		
Did not finish high school	13.6 (n = 9)	9.1 (n = 6)
I do not know	30.3 (n = 20)	24.2 (n = 16)
High school diploma or GED	16.7 (n = 11)	12.1 (n = 8)
Some college or no degree	9.1 (n = 6)	9.1 (n = 6)
Associate's or bachelor's degree	18.2 (n = 12)	22.7 (n = 15)
Master's degree (2 – 3 Years)	9.1 (n = 6)	15.2 (n = 10)
Professional graduate degree	9.1 (n = 6)	7.6 (n = 5)

Of the 132 matched student participants, 24 students participated in the focus group sessions. There were two focus group sessions per junior high school campus (six total). Each focus group consisted of four participants who were 7th and 8th grade advanced mathematics students enrolled at the junior high schools within a large

suburban school district in southeast Texas. The junior high schools are located within a large school district that contains seven junior high school campuses. Of the 24 student participants, 12 students indicated they were female (50.0%), while 12 students indicated they were male (50.0%). Of the 24 students, four students (16.6%) indicated they were White, 10 students (41.6%) indicated they were Hispanic, and eight students (33.3%) indicated they were African American.

Research Question One

Research question one, Does economic status influence attitude towards going to college for 7th and 8th grade students in advanced mathematics courses?, was answered by using descriptive statistics and an independent t-test. The descriptive statistics examined the frequencies and percentages regarding students' perceptions of their attitude toward college. Table 4.3 shows the frequency and percentage data for the students' responses to the section of the survey Attitude Toward College. Table 4.4 shows the collapsed results of the endpoints of the survey to examine the frequency percentages.

In terms of students' perceptions of their attitude toward college, a few of the survey items emerged. Approximately 3.0% of economically disadvantaged students in advanced mathematics courses *Strongly Disagree/Disagree* compared to 1.5% of non-economically disadvantaged students in advanced mathematics courses who answered *Strongly Disagree/Disagree* to the item, "Most of my friends in junior high school plan to go college." Additionally, 77.3% of economically disadvantaged students in advanced mathematics courses *Agree/Strongly Agree* compared to 87.9% of non-economically disadvantaged students in advanced mathematics courses answering *Agree/Strongly Agree* to the item, "I believe college is important to get a good job." Similarly, 87.9% of economically disadvantaged students in advanced mathematics courses responded *Agree/Strongly Agree* to the item, "I think continuing my education after high school is

important.” This couples closely with 86.3% of non-economically disadvantaged students in advanced mathematics courses answering *Agree/Strongly Agree* to the same item. Interestingly, 21.4% of the total matched participants *Strongly Disagree/Disagree* compared to 56.0% participants answering *Agree/Strongly Agree* to the item, “I think everyone has the opportunity to go to college if they want to.”

Table 4.3:

Expanded Responses to Students' Perceptions of Attitude Toward College (%)

	Survey Item		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I believe college important to get a good job.	Low SES	3.0 (n = 2)	4.5 (n = 3)	15.2 (n = 10)	45.5 (n = 30)	31.8 (n = 21)
		Non-Low SES	0.0 (n = 0)	1.5 (n = 1)	10.6 (n = 7)	42.4 (n = 28)	45.5 (n = 30)
2.	I have expectations to go to college.	Low SES	3.0 (n = 2)	1.5 (n = 1)	6.1 (n = 4)	30.3 (n = 20)	59.1 (n = 39)
		Non-Low SES	0.0 (n = 0)	3.0 (n = 2)	6.1 (n = 4)	28.8 (n = 19)	62.1 (n = 41)
3.	I think everyone has the opportunity to go to college.	Low SES	9.1 (n = 6)	12.1 (n = 8)	24.2 (n = 16)	21.2 (n = 14)	33.3 (n = 22)
		Non-Low SES	0.0 (n = 0)	22.7 (n = 15)	21.2 (n = 14)	28.8 (n = 19)	27.3 (n = 18)
4.	Most of my friends in junior high school plan to go to college.	Low SES	1.5 (n = 1)	1.5 (n = 1)	27.3 (n = 18)	45.5 (n = 30)	24.2 (n = 16)
		Non-Low SES	0.0 (n = 0)	1.5 (n = 1)	27.3 (n = 18)	51.5 (n = 34)	19.7 (n = 13)
5.	Most of my friends in junior high school think it is important to go to.	Low SES	3.0 (n = 2)	3.0 (n = 2)	34.8 (n = 23)	39.4 (n = 26)	19.7 (n = 13)
		Non-Low SES	0.0 (n = 0)	4.5 (n = 3)	33.3 (n = 22)	43.9 (n = 29)	18.2 (n = 12)
6.	I think continuing my education after high school important.	Low SES	1.5 (n = 1)	0.0 (n = 0)	10.6 (n = 7)	31.8 (n = 21)	56.1 (n = 37)
		Non-Low SES	1.5 (n = 1)	1.5 (n = 1)	10.6 (n = 7)	24.2 (n = 16)	62.1 (n = 41)

Table 4.4:

Collapsed Responses to Students' Perceptions of Attitude Toward College (%)

Survey Item		Strongly Disagree/Disagree	Neutral	Agree/Strongly Agree
1. I believe college important to get a good job.	Low SES	7.5 (n = 5)	15.2 (n = 10)	77.3 (n = 51)
	Non-Low SES	1.5 (n = 1)	10.6 (n = 7)	87.9 (n = 58)
2. I have expectations to go to college.	Low SES	4.5 (n = 3)	6.1 (n = 4)	89.4 (n = 59)
	Non-Low SES	3.0 (n = 2)	6.1 (n = 4)	90.9 (n = 36)
3. I think everyone has the opportunity to go to college.	Low SES	21.2 (n = 14)	24.2 (n = 16)	54.5 (n = 36)
	Non-Low SES	22.7 (n = 15)	21.2 (n = 14)	56.1 (n = 37)
4. Most of my friends in junior high school plan to go to college.	Low SES	3.0 (n = 2)	27.3 (n = 18)	69.7 (n = 46)
	Non-Low SES	1.5 (n = 1)	27.3 (n = 18)	71.2 (n = 47)
5. Most of my friends in junior high school think it is important to go to.	Low SES	6.0 (n = 2)	34.8 (n = 23)	59.1 (n = 39)
	Non-Low SES	4.5 (n = 3)	33.3 (n = 22)	62.1 (n = 41)
6. I think continuing my education after high school important.	Low SES	1.5 (n = 1)	10.6 (n = 7)	87.9 (n = 58)
	Non-Low SES	3.0 (n = 2)	10.6 (n = 7)	86.3 (n = 57)

The findings of the two-tailed independent *t*-test suggested economic status does not influence students' attitude toward college, $t(132) = -.817$, $p = .374$. Whether one is economically disadvantaged enrolled in advanced mathematics or not economically disadvantaged enrolled in advanced mathematics does not necessarily influence his or her attitude toward college. The mean score of economically disadvantaged students enrolled in advanced mathematics courses ($M = 23.96$) was similar to the mean score of non-economically disadvantaged students enrolled in advanced mathematics courses ($M = 24.51$). These findings indicate that non-economically disadvantage students enrolled in advanced mathematics courses and economically disadvantage students enrolled in advanced mathematics courses perceive themselves to understand the importance of continuing their education in similarly. Table 4.5 shows the results of the two-tailed independent *t*-test.

Table 4.5:

<i>Attitude Toward College</i>							
Class Enrollment	N	M	SD	t-value	df	p-value	
1. Low SES	66	23.96	4.18	-.817	132	.374	
2 Non-Low SES	66	24.51	3.45				

*Statistically significant ($p < .05$).

Research Question Two

Research question two, Does economic status influence teacher expectations and interactions for 7th and 8th grade students in advanced mathematics courses?, was answered by using descriptive statistics and an independent *t*-test. The descriptive statistics examined the frequencies and percentages regarding students' perceptions of teacher expectations and interactions. Table 4.6 shows the frequencies and percentages

for students' responses to the Teacher Expectations and Interactions portion of the survey. Table 4.7 shows the collapsed results of the endpoints of the Teacher Expectations and Interactions portion of the survey to examine the frequencies and percentages.

In terms of students' perception of teacher expectations and interactions, a few items stood out. Non-economically disadvantaged student participants responded *Strongly Disagree/Disagree* at a rate of 3.0% to the item, "In junior high school, my teachers cared about me." This compared to 10.1 % of economically disadvantaged student participants responding *Strongly Disagree/Disagree* to the same item. Similarly, 68.1% of non-economically disadvantaged students responded *Agree/Strongly Agree* to the item "In junior high school, my teachers inspired and motivated me to do my best." Conversely, 56.1% of economically disadvantaged students responded *Agree/Strongly Agree* to the same item creating a 12% difference amongst these groups. There was a similar contrast with the item "My junior high school teachers had high expectations of me" as 86.3% of non-economically disadvantaged students responded *Agree/Strongly Agree* while 77.2% of economically disadvantaged students responded *Agree/Strongly Agree*.

Table 4.6:

Expanded Responses to Students' Perceptions of Teacher Expectations and Interactions (%)

Survey Item		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. In junior high school, my teachers cared about me.	Low SES	1.0 (n = 1)	9.1 (n = 6)	27.3 (n = 18)	34.8 (n = 23)	27.3 (n = 18)
	Non-Low SES	1.5 (n = 1)	1.5 (n = 1)	33.3 (n = 22)	33.3 (n = 22)	30.3 (n = 20)
2. In junior high school, my teachers inspired and motivated me to do my best.	Low SES	3.0 (n = 2)	4.5 (n = 3)	36.4 (n = 24)	25.8 (n = 17)	30.3 (n = 20)
	Non-Low SES	1.5 (n = 1)	9.1 (n = 6)	21.2 (n = 14)	43.9 (n = 29)	24.2 (n = 16)
3. My junior high school teachers had high expectations of me.	Low SES	0.0 (n = 0)	0.0 (n = 0)	22.7 (n = 15)	34.8 (n = 23)	42.4 (n = 28)
	Non-Low SES	0.0 (n = 0)	1.5 (n = 1)	12.1 (n = 8)	51.5 (n = 34)	34.8 (n = 23)
4. My junior high school teachers did as much as they could to help me learn.	Low SES	0.0 (n = 0)	1.5 (n = 1)	27.3 (n = 18)	28.8 (n = 19)	42.4 (n = 28)
	Non-Low SES	1.5 (n = 1)	1.5 (n = 1)	19.7 (n = 13)	37.9 (n = 25)	39.4 (n = 26)
5. My junior high school teacher did as much as they could to prepare me for college level work.	Low SES	1.5 (n = 1)	3.0 (n = 2)	22.7 (n = 15)	31.8 (n = 21)	40.9 (n = 27)
	Non-Low SES	0.0 (n = 0)	3.0 (n = 2)	18.2 (n = 12)	48.5 (n = 32)	30.3 (n = 20)

Table 4.7:

Collapsed Responses to Students' Perceptions of Teacher Expectations and Interactions (%)

Survey Item		Strongly Disagree/Disagree	Neutral	Agree/Strongly Agree
1. In junior high school, my teacher cared about me.	Low SES	10.1 (n = 7)	27.3 (n = 18)	62.1 (n = 41)
	Non-Low SES	3.0 (n = 2)	33.3 (n = 22)	63.6 (n = 42)
2. In junior high school, my teachers inspired me and motivated me to do my best.	Low SES	7.5 (n = 5)	36.4 (n = 24)	56.1 (n = 37)
	Non-Low SES	10.6 (n = 7)	21.2 (n = 14)	68.1 (n = 45)
3. My junior high school teachers had high expectations of me.	Low SES	0.0 (n = 14)	22.7 (n = 16)	77.2 (n = 51)
	Non-Low SES	1.5 (n = 1)	12.1 (n = 8)	86.3 (n = 57)
4. My junior high school did as much as they could to help me learn.	Low SES	1.5 (n = 1)	27.3 (n = 18)	71.2 (n = 47)
	Non-Low SES	3.0 (n = 2)	19.7 (n = 13)	77.3 (n = 51)
5. My junior high school teachers did as much as they could to prepare me for college level work.	Low SES	4.5 (n = 3)	22.7 (n = 23)	72.7 (n = 48)
	Non-Low SES	3.0 (n = 2)	18.2 (n = 12)	78.8 (n = 52)

The findings of the two-tailed independent *t*-test showed economic status does not influence students' perceptions of teacher expectations and interactions, $t(132) = -.245$, $p = .157$. Whether a student is enrolled in advanced mathematics courses is economically disadvantaged or not does not necessarily influence his or her perception of teacher expectations and interactions. The mean score of economically-disadvantaged students enrolled in advanced mathematics courses ($M = 19.9$) was similar to the mean score of non-economically-disadvantaged students enrolled in advanced mathematics courses ($M = 20.0$) meaning both student groups perceive their teachers want to see them succeed and encourage them to succeed. Table 4.8 shows the results of the two-tailed independent *t*-test.

Table 4.8:

<i>Teacher Expectations and Interactions</i>						
Class Enrollment	N	M	SD	t-value	df	p-value
1. Low SES	66	19.9	3.70	-.245	132	.157
2. Non-Low SES	66	20.0	3.39			

*Statistically significant ($p < .05$)

Question Three

Research question three, *Does economic status influence college readiness for 7th and 8th grade students in advanced mathematics courses?*, was answered by descriptive statistics and an independent *t*-test. The descriptive statistics examined frequencies percentages related to students' perceptions of their college readiness. Table 4.9 shows the frequency and percentage data for the College Preparation portion of the survey. Table 4.10 presents the collapsed results of the endpoints of the College Preparation portions of the survey to examine the frequency and percentage results.

In terms of students' perceptions of their preparation for college, two of the survey items stood out. Both student groups, non-economically disadvantaged students in advanced mathematics and economically disadvantaged students in advanced mathematics, responded *Agree/Strongly Agree* at a rate of 90.9% to the item, "In junior high school, I was aware of the importance of taking courses such as AP courses and dual credit courses." This compared to 68.2% of economically disadvantaged student participants responding *Agree/Strongly Agree* to the item "In junior high school, Pre AP and other advanced courses were available to everyone. Conversely, 80.3% of non-economically disadvantaged students responded *Agree/Strongly Agree* to the same item creating a 12.1% difference amongst these groups.

Table 4.9:

Expanded Responses to Students' Perceptions of College Preparation (%)

Survey Item		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. In junior high school, I was aware of the importance of taking courses such as AP courses and dual credit courses.	Low SES	0.0 (n = 0)	0.0 (n = 0)	9.1 (n = 6)	31.8 (n = 21)	59.1 (n = 39)
	Non-Low SES	0.0 (n = 0)	0.0 (n = 0)	9.1 (n = 6)	39.4 (n = 26)	51.5 (n = 34)
2. In junior high school, I was encouraged to take high level classes that could prepare me for college.	Low SES	1.5 (n = 1)	1.5 (n = 1)	13.6 (n = 9)	25.8 (n = 17)	57.6 (n = 38)
	Non-Low SES	0.0 (n = 0)	1.5 (n = 1)	7.6 (n = 5)	37.9 (n = 25)	53.0 (n = 35)
3. In junior high school, I was aware of the courses I needed to prepare for college.	Low SES	1.5 (n = 1)	6.1 (n = 4)	10.6 (n = 7)	34.8 (n = 23)	47.0 (n = 31)
	Non-Low SES	0.0 (n = 0)	3.0 (n = 2)	19.7 (n = 13)	36.4 (n = 24)	40.9 (n = 27)
4. Teachers helped me plan or select the right high school courses needed for college.	Low SES	6.1 (n = 4)	18.2 (n = 12)	34.8 (n = 23)	28.8 (n = 19)	12.1 (n = 8)
	Non-Low SES	7.6 (n = 5)	16.7 (n = 11)	33.3 (n = 22)	33.3 (n = 22)	9.1 (n = 6)
5. In junior high school, Pre AP and other advanced courses were available to everyone.	Low SES	4.5 (n = 3)	4.5 (n = 3)	22.7 (n = 15)	36.4 (n = 24)	31.8 (n = 21)
	Non-Low SES	0.0 (n = 0)	6.1 (n = 4)	13.6 (n = 9)	39.4 (n = 26)	40.9 (n = 27)

Table 4.10:

Collapsed Responses to Students' Perceptions of College Preparation (%)

Survey Item		Strongly Disagree/Disagree	Neutral	Agree/ Strongly Agree
1. In junior high school, I was aware of the importance of taking courses such as AP courses and dual credit courses.	Low SES	0.0 (n = 0)	9.1 (n = 6)	90.9 (n = 60)
	Non-Low SES	0.0 (n = 0)	9.1 (n = 6)	90.9 (n = 60)
2. In junior high school, I was encouraged to take high level classes that could prepare me for college.	Low SES	3.0 (n = 2)	13.6 (n = 9)	83.4 (n = 55)
	Non-Low SES	1.5 (n = 1)	7.6 (n = 5)	90.9 (n = 60)
3. In junior high school, I was aware of the courses I needed to prepare for college.	Low SES	7.6 (n = 5)	10.6 (n = 7)	81.8 (n = 54)
	Non-Low SES	3.0 (n = 2)	19.7 (n = 13)	77.3 (n = 51)
4. Teachers helped me plan or select the right high school courses needed for college.	Low SES	24.3 (n = 16)	34.8 (n = 23)	40.9 (n = 27)
	Non-Low SES	24.3 (n = 1)	33.3 (n = 22)	42.4 (n = 28)
5. In junior high school, Pre AP and other advanced courses were available to everyone.	Low SES	9.0 (n = 6)	22.7 (n = 15)	68.2 (n = 45)
	Non-Low SES	6.1 (n = 4)	13.6 (n = 9)	80.3 (n = 53)

The findings of the two-tailed independent *t*-test suggest economic status, does not affect students' perceptions of their college preparation, $t(132) = -.375, p = .073$. Whether a student is enrolled in advanced mathematics courses is economically disadvantaged or not does not necessarily influence his or her perception toward college preparation. The mean score of economically disadvantaged students enrolled in advanced mathematics courses ($M = 20.1$) was similar to the mean score of non-economically disadvantaged students enrolled in advanced mathematics courses ($M = 20.3$) meaning both student groups perceive their preparedness for college similarly. Table 4.11 shows the results of the two-tailed independent *t*-test.

Table 4.11:

<i>College Preparation</i>							
Class Enrollment	N	M	SD	t-value	df	p-value	
1. Low SES	66	20.1	3.34	-.375	132	.073	
2. Non-Low SES	66	20.3	2.64				

*Statistically significant ($p < .05$)

Research Question Four

Research question four, *Does economic status influence school-wide support for 7th and 8th grade students in advanced mathematics courses?* was answered using descriptive statistics and an independent *t*-tests. The descriptive statistics examined the frequencies and percentages regarding students' perceptions of school-wide support. Table 4.12 shows the frequency and percentage data on the section of the survey, School Wide Support. Table 4.13 shows the collapsed results of the endpoints of the survey to examine the frequencies and percentages.

In terms of students' perceptions of school wide support, three of the survey items stood out. Both student groups, non-economically disadvantaged students in advanced mathematics and economically disadvantaged students in advanced mathematics, responded *Agree/Strongly Agree* at a rate of 63.6% to the item, "I felt welcomed and supported at my junior high school." This is compared to 69.7% of non economically disadvantaged student participants responding *Agree/Strongly Agree* to the item "All students at school had the same opportunities to prepare for college." Conversely, 47.0% of economically disadvantaged students responded *Agree/Strongly Agree* to the item, "My junior high school helped me improve my ability to study through student workshops or advisory classes." This is compared to non-economically disadvantaged students responding to the same item at a rate of 62.1%.

Table 4.12:

Expanded Responses to Students' Perceptions of School Wide Support (%)

Survey Item		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My junior high school created a campus culture that going to college was important.	Low SES	0.0 (n = 0)	10.6 (n = 7)	31.8 (n = 21)	34.8 (n = 23)	22.7 (n = 15)
	Non-Low SES	1.5 (n = 1)	7.6 (n = 5)	36.4 (n = 24)	36.4 (n = 24)	18.2 (n = 12)
2. I felt welcomed and supported at my junior high school.	Low SES	3.0 (n = 2)	12.1 (n = 8)	21.2 (n = 14)	43.9 (n = 29)	19.7 (n = 13)
	Non-Low SES	1.5 (n = 1)	4.5 (n = 3)	30.3 (n = 20)	31.8 (n = 21)	31.8 (n = 21)
3. All students at the school had the same opportunities to prepare for college.	Low SES	4.5 (n = 3)	10.6 (n = 7)	27.3 (n = 18)	30.3 (n = 20)	27.3 (n = 18)
	Non-Low SES	3.0 (n = 2)	3.0 (n = 2)	24.2 (n = 16)	40.9 (n = 27)	28.8 (n = 19)
4. My junior high school helped me improve my ability to study through student workshops or advisory classes.	Low SES	6.1 (n = 4)	16.7 (n = 11)	30.3 (n = 20)	27.3 (n = 18)	19.7 (n = 13)
	Non-Low SES	4.5 (n = 3)	7.6 (n = 5)	25.8 (n = 17)	28.8 (n = 19)	30.3 (n = 20)
5. My junior high school provided me with a student planner to help me learn organization skills and time management.	Low SES	7.6 (n = 5)	7.6 (n = 5)	15.2 (n = 10)	47.0 (n = 31)	22.7 (n = 15)
	Non-Low SES	13.6 (n = 9)	15.2 (n = 10)	15.2 (n = 10)	33.3 (n = 22)	22.7 (n = 15)

Table 4.12 Continued:

Expanded Responses to Students' Perceptions of School Wide Support (%)

Survey Item		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
6. In junior high school, I often felt ignored. (Read carefully.)	Low SES	25.8 (n = 17)	39.4 (n = 26)	24.2 (n = 16)	9.1 (n = 6)	1.5 (n = 1)
	Non-Low SES	34.8 (n = 23)	28.8 (n = 19)	21.2 (n = 14)	6.1 (n = 4)	9.1 (n = 6)
7. In junior high school, I participated in programs such as Upward Bound or AVID.	Low SES	37.9 (n = 25)	34.8 (n = 23)	7.6 (n = 5)	10.6 (n = 7)	9.1 (n = 6)
	Non-Low SES	30.3 (n = 20)	28.8 (n = 19)	18.2 (n = 12)	13.6 (n = 9)	9.1 (n = 6)
8. I visited various college campuses while in junior high school.	Low SES	50.0 (n = 33)	28.8 (n = 19)	7.6 (n = 5)	7.6 (n = 5)	6.1 (n = 4)
	Non-Low SES	34.8 (n = 23)	24.2 (n = 16)	10.6 (n = 7)	19.7 (n = 13)	10.6 (n = 7)
9. I participated in summer college during junior high school.	Low SES	56.1 (n = 37)	33.3 (n = 22)	4.5 (n = 3)	3.0 (n = 2)	3.0 (n = 2)
	Non-Low SES	48.5 (n = 32)	30.3 (n = 20)	9.1 (n = 6)	6.1 (n = 4)	6.1 (n = 4)

Table 4.13:

Collapsed Responses to Students' Perceptions of School-Wide Support (%)

Survey Item		Strongly Disagree/ Disagree	Neutral	Agree/ Strongly Agree
1. My junior high school created a campus culture that going to college was important.	Low SES	10.6 (n = 7)	31.8 (n = 21)	57.5 (n = 38)
	Non-Low SES	9.1 (n = 6)	36.4 (n = 24)	54.6 (n = 36)
2. I felt welcomed and supported at my junior high school.	Low SES	15.1 (n = 10)	21.2 (n = 14)	63.6 (n = 42)
	Non-Low SES	6.0 (n = 4)	30.3 (n = 20)	63.6 (n = 42)
3. All students at the school had the same opportunities to prepare for college.	Low SES	15.1 (n = 10)	27.3 (n = 18)	57.6 (n = 38)
	Non-Low SES	6.0 (n = 4)	24.2 (n = 16)	69.7 (n = 46)
4. My junior high school helped me improve my ability to study through student workshops or advisory classes.	Low SES	22.8 (n = 15)	30.3 (n = 20)	47.0 (n = 31)
	Non-Low SES	12.1 (n = 8)	25.8 (n = 17)	62.1 (n = 41)
5. My junior high school provided me with a student planner to help me learn organization skills and time management.	Low SES	15.2 (n = 10)	15.2 (n = 10)	69.7 (n = 46)
	Non-Low SES	28.8 (n = 19)	15.2 (n = 10)	56.0 (n = 37)

Table 4.13 Continued:

Collapsed Responses to Students' Perceptions of School-Wide Support (%)

Survey Item		Strongly Disagree/Disagree	Neutral	Agree/ Strongly Agree
6. In junior high school, I often felt ignored. (Read carefully.)	Low SES	65.2 (n = 43)	24.2 (n = 16)	10.6 (n = 7)
	Non-Low SES	63.6 (n = 42)	21.2 (n = 14)	15.2 (n = 10)
7. In junior high school, I participated in programs such as Upward Bound or AVID.	Low SES	72.7 (n = 48)	7.6 (n = 5)	19.7 (n = 13)
	Non-Low SES	59.1 (n = 39)	18.2 (n = 12)	22.7 (n = 15)
8. I visited various college campuses while in junior high school.	Low SES	78.8 (n = 52)	7.6 (n = 5)	13.7 (n = 9)
	Non-Low SES	59.0 (n = 39)	10.6 (n = 7)	30.3 (n = 20)
9. I participated in summer college during junior high school.	Low SES	89.4 (n = 59)	4.5 (n = 3)	6.0 (n = 4)
	Non-Low SES	78.8 (n = 52)	9.1 (n = 6)	12.2 (n = 8)

The findings of the two-tailed independent *t*-test suggest economic status, does not affect students' perceptions of school wide support, $t(132) = -1.544$, $p = .393$. Whether a student is enrolled in advanced mathematics courses is economically disadvantaged or not does not necessarily influence his or her perception of school wide support. School wide supports was defined by student's feelings associated with support from school, equitable opportunities to prepare for high school and college, and programs and lessons to teach organizational skills and time management. The mean score of economically disadvantaged students enrolled in advanced mathematics courses ($M = 26.0$) was similar to the mean score of non-economically disadvantaged students enrolled

in advanced mathematics courses ($M = 27.5$) which means the economically disadvantaged students enrolled in advanced mathematics classes perceive they receive more support and feel more welcomed by school staff than those non-economically disadvantaged in advanced mathematics classes. Table 4.14 shows the results of the two-tailed independent t -test.

Table 4.14:

School-Wide Support

Class Enrollment	N	M	SD	t-value	df	p-value
1. Low SES	66	26.0	5.05	-1.544	132	.393
2. Non-Low SES	66	27.5	6.47			

*Statistically significant ($p < .05$)

Research Question Five

Research question five, *Does economic status influence parent engagement for 7th and 8th grade students in advanced mathematics courses?*, was answered by descriptive statistics and an independent t -test. The descriptive statistics examined the frequencies and percentages regarding students' perceptions of parental engagement. Table 4.15 shows the frequency and percentage data on the section of the survey, Parental Engagement. Table 4.16 shows the collapsed results of the endpoints of the survey to examine the frequencies and percentages.

In terms of students' perceptions of parental engagement, three of the survey items transcended. Both student groups, non-economically disadvantaged students in advanced mathematics and economically disadvantaged students in advanced mathematics, responded *Agree/Strongly Agree* at a high rate to the item, "When I was in junior high school, my parents encouraged me to do well in school." This compared to

90.9% of non-economically disadvantaged student participants responding *Agree/Strongly Agree* to the item “My parents were aware of ways to help me get better grades in school.” Conversely, 77.3% of economically disadvantaged students responded *Agree/Strongly Agree* to the same item. A similar response rate difference occurred for the item “As a junior high school student, my parents were aware of ways to help me get to college” with 86.4% of non-economically disadvantaged students responding next to 77.3% of economically disadvantaged students.

Table 4.15:

Expanded Responses to Students' Perceptions of Parental Engagement (%)

Survey Item		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. When I was in junior high school, my parents encouraged me to do well in school.	Low SES	0.0 (n = 0)	0.0 (n = 0)	4.5 (n = 3)	15.2 (n = 10)	15.2 (n = 53)
	Non-Low SES	0.0 (n = 0)	0.0 (n = 0)	3.0 (n = 2)	18.2 (n = 12)	78.8 (n = 52)
2. My parents were aware of ways to help me get better grades in school.	Low SES	1.5 (n = 1)	7.6 (n = 5)	13.6 (n = 9)	18.2 (n = 12)	59.1 (n = 39)
	Non-Low SES	0.0 (n = 0)	0.0 (n = 0)	9.1 (n = 6)	30.3 (n = 20)	60.6 (n = 40)
3. As a junior high school student, my parents encouraged me to go to college.	Low SES	1.5 (n = 1)	1.5 (n = 1)	4.5 (n = 3)	13.6 (n = 9)	78.8 (n = 52)
	Non-Low SES	0.0 (n = 0)	0.0 (n = 0)	4.5 (n = 3)	22.7 (n = 15)	72.7 (n = 48)
4. As a junior high school student, my parents were aware of ways to help me get to college.	Low SES	1.5 (n = 1)	10.6 (n = 7)	10.6 (n = 7)	21.2 (n = 14)	56.1 (n = 37)
	Non-Low SES	0.0 (n = 0)	1.5 (n = 1)	12.1 (n = 8)	28.8 (n = 19)	57.6 (n = 38)
5. Teachers and counselors at my junior high school communicated often with my parents.	Low SES	13.6 (n = 9)	22.7 (n = 15)	24.2 (n = 16)	21.2 (n = 14)	18.2 (n = 12)
	Non-Low SES	10.6 (n = 7)	24.2 (n = 16)	24.2 (n = 16)	16.7 (n = 11)	24.2 (n = 16)

Table 4.16:

<i>Collapsed Responses to Students' Perceptions of Parental Engagement (%)</i>				
Survey Item		Strongly Disagree/ Disagree	Neutral	Agree/ Strongly Agree
1. When I was in junior high school, my parents encouraged me to do well in school.	Low SES	0.0 (n = 0)	4.5 (n = 3)	95.5 (n = 63)
	Non-Low SES	0.0 (n = 0)	3.0 (n = 2)	97.0 (n = 64)
2. My parents were aware of ways to help me get better grades in school.	Low SES	9.1 (n = 6)	13.6 (n = 9)	77.3 (n = 51)
	Non-Low SES	0.0 (n = 0)	9.1 (n = 6)	90.9 (n = 60)
3. As a junior high school student, my parents encouraged me to go to college.	Low SES	3.0 (n = 2)	4.5 (n = 3)	92.4 (n = 61)
	Non-Low SES	0.0 (n = 0)	4.5 (n = 3)	95.4 (n = 63)
4. As a junior high school student, my parents were aware of ways to help me get to college.	Low SES	12.1 (n = 8)	10.6 (n = 7)	77.3 (n = 51)
	Non-Low SES	1.5 (n = 1)	12.1 (n = 8)	86.4 (n = 57)
5. Teachers and counselors at my junior high school communicated often with my parents.	Low SES	36.3 (n = 24)	24.2 (n = 16)	39.4 (n = 26)
	Non-Low SES	34.8 (n = 7)	24.2 (n = 16)	40.9 (n = 27)

The findings of the two-tailed independent *t*-test suggest economic status, does not affect students' perceptions of parental engagement $t(132) = -1.153, p = .085$.

Whether a student is enrolled in advanced mathematics courses is economically disadvantaged or not does not necessarily influence his or her perception of parental engagement. The mean score of economically disadvantaged students enrolled in advanced mathematics courses ($M = 20.9$) was similar to the mean score of non-

economically disadvantaged students enrolled in advanced mathematics courses ($M = 21.5$) which means the non-economically disadvantaged students enrolled in advanced mathematics classes perceive their parents as supporting their high school experience and post-secondary goals than those economically disadvantaged in advanced mathematics classes. Table 4.17 shows the results of the two-tailed independent t -test.

Table 4.17

<i>Parental Engagement</i>							
Class Enrollment	N	M	SD	t-value	df	p-value	
1. Low SES	66	20.9	3.55	-1.153	132	.085	
2. Non-Low SES	66	21.5	2.55				

*Statistically significant ($p < .05$)

Research Question Six

Research question six, *How do students perceive their high school experiences related to course selection, college preparation and planning, and extracurricular activities?*, was addressed by performing coding on the data from the participant focus group. Using constant-comparative coding techniques, the codes were organized into meaningful categories and themes (Lichtman, 2010). According to Lichtman (2010), the review of data into codes allows for themes in the data to emerge. The focus group data centered on participants' perspectives on their junior high school experiences related to advanced course experience, course selection, skills supporting college readiness and extracurricular activities. The qualitative analysis identified four themes common to both types of focus groups, economically disadvantaged and non-economically disadvantaged: (a) advanced courses; (b) course selection and planning; (c) skills supporting high school and college readiness; and (d) participation in extra-curricular activities.

The theme of advanced courses explored the student's experience in the advanced courses such as advanced mathematics, the challenges encountered as they relate to the course work and homework, and the surprising learning motivations. The theme of course selection and planning examined the influence of peer input as well as the schoolwide supports during the course selection process from teachers and counselors. The theme of skills supporting high school and college readiness illustrated the advanced course environment, structure and resources needed to ensure students were organized and able to access the rigorous course materials. The theme of participation in extra-curricular activities examined students' connectedness to the course work and the influence that it had on their post-secondary interests. The focus group data is presented for both types of groups, economically disadvantaged students and non-economically disadvantaged students, using the common themes revealed during analysis. Verbatim excerpts from the focus group data provide a deeper understanding of the experiences and perceptions of economically disadvantaged students and non-economically disadvantaged students who are enrolled in advanced mathematics courses.

Advanced Courses

When both types of focus group participants discussed their experiences in advanced mathematics courses, three subthemes emerged: (a) challenges and (b) learning motivation. The theme of advanced course explored the student's experience in the advanced courses such as advanced mathematics, the challenges encountered as it relates to the course work and homework, and the surprising learning motivations.

Economically Disadvantaged Students: Challenges. Advanced courses such as advanced mathematics presented beneficial challenges for the student participant. The 12 economically disadvantaged student participants expressed a general apprehension to enrolling in advanced courses in junior high school. Of the 12 student participants, seven

were unsure about enrolling in advanced courses in junior high school because they did not feel confident in their academic abilities in all content areas. Of the seven, three student participants agreed that advanced reading and writing were more challenging than advanced mathematics. For example, participant 13 explained that she was excited to enroll in advanced mathematics, but she was anxious about advanced reading and writing:

At first, I was like it's too much taking all advanced classes especially because I am better with math. Like writing is hard because I never know what else to say in essays, and I am not good with reading long books.

Similarly, participant 21 shared her thoughts: "Yes, I am really good at math, too – since like elementary school. I just didn't know what we would do in MAP Humanities." Also, highly interested in math, participant 23 shared a detachment to literacy:

I like to read things I am interested in and like sometimes the teacher's books are boring and too long. And you know math really can't be boring because of all the parts. I mean it can be hard but not boring, right?

The students' statements indicate a higher interest in advanced mathematics because reading and writing courses engaged in complex lengthy literacy tasks.

Of the seven participants, the other four student participants did not have previous advanced mathematics experiences, so their challenges were related to inexperience in an advanced mathematics course environment prior to junior high school. As a previous elementary student without exposure to accelerated mathematics curricula, participant 24 explained how she arrived to the qualification and enrollment process for advanced mathematics in junior high school:

I was really good at math in 5th grade like none of it was ever really bad. I had the most lessons passed in Imagine Math like 125 lessons with good grades. So, my

teacher told my mom to put me in an accelerated math class over the summer for two weeks to get ready for this advanced math class this year. At first, I did not think it was enough because I did not understand some of the work and the teacher moved faster. But after a while I got it.

Participant 5's inexperience in the advanced mathematics environment led to his lack of connectedness with the other students in his junior advanced mathematics class.

Participant 5 describes how the students were different in his 7th grade advanced mathematics course: "It was kind of weird when I join this class because I did not know these kids. They like already knew each other from elementary or something. Plus, they were all smart." Participant 6 shared similar feelings with a head nod of agreement adding, "I am new to Texas, so everything is new for me. I had to take all kinds of tests to show I can do advanced math like I did at my old school." In relation to the lack of previous experience in an advanced course environment, participant 7 remembered observing others master specific math concepts quickly:

It felt like a huge gap in my education because everyone knew how to add and subtract negatives so much quicker than me. No one made me feel the gap though; it was me! It did not last all year because the teacher helped with notes and tutorials.

The students' statements show varied degrees of preparedness as it relates to previous mathematics experiences.

Of the 12 student participants, three of the student participants did not enroll in more than two advanced courses due to the uncertainty of the course workload and expectations. Participant 14's perception of the course workload created a personal barrier that stopped her from enrolling in multiple advanced courses: "I do my work, but I play sports. So, if I have too much work, I won't be able to go to practice." The two other

student participants felt that advanced math was challenging at the junior high school level and would be increasingly difficult at the high school level. With similar thinking to participant 14, participant 15 mentioned changing the number of advanced courses for the next school year, high school: “I told my mom that I don’t want to do all advanced classes next year. I know it will be too much for me as ninth grader.” Similarly, participant 16 suggested advanced mathematics aligns with their future career aspirations: “I know I need to do good in math because entrepreneurs do everything with numbers. I am going own my beauty and hair business.” The students’ statements indicate a sharp focus on their interest as it relates to mathematics and other core subjects. Overall, the students’ statement indicates a presumption of difficulties as it relates to advanced course work. The students have a general willingness to enroll in an at least advanced course with math being their first choice. What is not evident from the students’ statements is from where their initial apprehension for advanced courses derived.

Non-economically Disadvantaged Students: Challenges. Advanced mathematics courses present meaningful learning opportunities through challenging course material and consistent high expectations. The 12 non-economically disadvantaged students expressed a concern about enrolling in advanced courses in junior high school. Of the 12 student participants, five related their concerns to the workload in advanced courses in junior high school. In relation to the course workload, Participant 10 believed that she would be unable to handle the amount homework and assessments, if enrolled in more than one advanced course: “Like what if I have math homework and a science test to study for? I will be up late trying to get it done. I want to make good grades.” Participant seven added similar idea related to advanced course homework load: “Ms. W sometimes lets us start homework in class, so this saves me time at home. I just don’t like when we have lab write ups and vocabulary definitions plus math IXL to

complete one night.” To illustrate support with the course workload, participant eight recounted an evening when her mother stepped to support a large homework load: “My mom helped with my writing homework one night, so I could finish the online math IXL work. She even sent my teacher an email asking for more time, and my teacher was cool with it!” The homework load was a commonplace agreement as demonstrated by head nods and statements of agreement by two other participants.

The initial lack of confidence in advanced mathematics abilities presented its as challenge for the student participants. Of the 12 participants, two were not confident in their preparedness for advanced mathematics, even though they had passed all district benchmarks necessary to enroll in the course. For example, participant 9 assumed the content would be far too accelerated beyond her abilities: “I really like math, but I thought they would go too fast for me. And the test, I thought tests were like every week.” In relation to confidence and preparedness, participant 11 added that she felt prepared to succeed in advanced reading and writing courses because of the assignments provided over the summer, however, the same summer opportunities were not extended for math:

At the end of last year, my reading teacher shared all of these projects and book choices we had for the summer reading requirement. If you are in advanced reading, you have to read a big chapter book over the summer and answers questions and do some project choice board. But see math didn’t give us nothing. So, I really like took the summer off from math.

Similar to economically disadvantaged students, four of the 12 student participants felt that advanced math was challenging at the junior high school level, but these students’ concerns were motivated by conversations with peers. When exploring their perceptions of challenging, the participants related it to not only the homework load, but also the

number of concepts covered in one class period. For example, participant 17 explained a lengthy lesson presented in advanced mathematics:

Mr. V is like really smart and he helps us, but one day we covered like four topics. It took like 6 pages of notes. It wasn't hard after we practiced, but it was a lot of information. He pushes us to do so much like we are smart like him.

In preparation for an exam, participant 19 shared that his math teacher assigned an extension exam review that contributed to numerous concepts and homework load:

So, we had a test coming up, and Ms. W gave us like 10-page review packet to do to get ready. We had to show our work and explain our answers on every answer. It was a lot of work. She did have small group study sessions in class where we review specific problems with her, but I still took the packet home for homework because class time was not enough time.

Similarly, participant 12 made a connection to his older brother's high school advanced math experience showing homework is a major factor in secondary advanced mathematics courses: "My brother has all advanced classes, and he is always working on pages and pages of math work and history notes with his friends." The students' statement indicates a presumption of challenges because there is a significant time commitment to advanced mathematics homework. Additionally, the curricula are designed to deliver multiple concepts in a short amount of in class instructional time. Even though the students understand that they meet the qualifications for advanced mathematics courses, other factors contributed to their confidence barriers. The students are willing to enroll in advanced math, but they are initially uncertain of how well they will perform.

Economically Disadvantaged Students: Learning motivation. Advanced mathematics courses present experiences and challenges that subsequently motivated

students to push for success. Of the 12 student participants, 11 students expressed that they did not expect to enjoy the challenges presented in an AP course. Of the 11 student participants, three explained their enjoyment associated with accomplishing complex academic task in advanced mathematics. For instance, participant 21 shared her experience with the first major project in advanced mathematics:

We had been taking notes and practicing all week. Then, Mr. S gave a us a project - not a test. I did not know how to start, but I knew I wanted to do good on it. He let me go to tutoring every day to work on it. Me and my friend worked on that project like every day, and it was fun. I really liked the way my poster looked, and it helped me pass the nine-weeks, too.

Also, in agreement, participant 22 shared the complex academic task in advanced mathematics courses were fun:

Sometimes, we do stuff is hard because I don't remember this stuff from like the year before, but Mrs. Z makes it fun with review games and practice. And we like group together to do the research or work on the problems.

In relation to enjoying complex academic task, participant eight describes a sense of competitiveness when reviewing progress report grades with peers: "Like we are always making sure our teachers update our grades. We like all make good grades, but I want to make all A's to be like ahead of everyone."

Other student participants admitted that the advanced mathematics environment motivated their future high school and collegiate aspirations or other external factors. Of the 12 student participants, five students related their motivations to their parents and other siblings. For example, participant 15 believed that she is encouraged to push through rigorous academic tasks by her older sister:

I want to do my very best for my future, so I can go to college or something. My sister like tells me all the time to work hard with my homework and tests because it's getting me ready. My sister is at community college now.

Like participant 15, participant 14 shared that her older brother is in college as well, but he is also working part-time: "Yeah, my brother goes to that community college, too, and works at the local grocery store. He is always writing college papers and stuff. He helps me sometimes, if I need it." Also related to family support, participant 6 shared how her mother's support motivates her to be successful:

My mom don't play about my grades, so like I have to make A's and B's. We like talk about my day and all the stuff I have to work on, and she always checks my grades on Skyward, too.

The frequent oversight of grades by parents was a commonplace agreement as demonstrated by head nods and statements of agreement by the other two participants. Adding different yet similar feedback about parental motivation, participant 24 shared how witnessing his family's success has created a sense of self-motivation to learn in an advanced mathematics:

My dad graduated with master's – I think that's what it's called – like two years ago, so I saw him do all of his college work. He makes more money on his jobs, so I gotta try it, too. I'm gonna make a lot of money being in construction after I finish college.

The students' statement indicates an intrinsic and extrinsic motivation to accomplish challenging academic task. The students are able to take academic risk successfully because they are supported by their parents and siblings.

Non-economically Disadvantaged Students: Learning motivation. Of the 12 student participants, 11 students did not expect to enjoy the challenges presented in an

advanced mathematics course. Of the 11 student participants, three student participants specifically expressed enjoyment with accomplishing complex academic task when they received small group support. For example, participant 18 described going to tutorials for an advanced class to ensure comprehension of complex learning tasks:

Mrs. H made us write an expository research paper, and I could not think of any other good resources for my body paragraphs. She helped me look through other websites and other books. I ended up with too much new information. I go to tutoring every week now. It's easier to do this work in groups and with the teacher. She makes it like a study group session.

As student in the same advanced mathematics class as participant 21, participant 20 shared his experience with the first major project in advanced mathematics:

Yeah Mr. S gave us all of this new stuff to learn in only like a few days. But what was okay about was we didn't take a test or nothing. We just did a project over. I worked with my friends on it, but I had to do my own work. They did a poster, but I made a PowerPoint with music and stuff. It had a lot of parts, but we just followed the rubric sheet.

In agreement, participant 4 shared the motivation and support provided in after school was beneficial; however, he added a genuine desire to learn new mathematical concepts was the basis of his motivation: "I just like getting to the new stuff, and helping my friends with it. My teacher lets me work in small groups to others, if I finish first." The other student participants correlated their learning motivations to parental accountability with head nods and statements of agreements.

Of the 11 student participants, four students recounted their parents' expectations for above averages and maximum effort. For example, participant 1 explained that his parents expect him to enroll and excel in all advanced courses: "I'm going to going

college to be a doctor, so my mom said I need to do all advanced classes to be ready. And I want to do my very best for my future.” Similarly, participant 3 shared an experience with his parents: “I talked to my parents about a gap year, so I can travel. My mom was cool with it because she knows I am going to law school.” To add in how her parents influenced her course enrollment, participant 10 shared, “Yeah, I’m only in this class because my parents made me, but it’s cool. And I have an A, and my friends are in this class, too.” Participant 12 illustrated agreement with participant 10 with a head nod adding in: “Yeah, same.” The students’ statements indicated an increased enthusiasm to master the advanced course curricula because of positive familial influences and personal future goals. Additionally, the students are eager to try new challenging material because they are supported by peers and their teacher. What is not evident from the students’ statements is if this motivation is in all classroom environments or if the motivation only exists when the assignments are relatable to student interests.

Course Selection and Planning

When discussing college selection and planning, three categories emerged: (a) teachers; (b) peer input; and (c) school counselor. The theme of college selection and planning explores the teacher’s support for the participants during the course selection process. Peer input and role of the school counselor includes how the junior high school counseling team and peers influenced the secondary course selection.

Economically Disadvantaged Students: Teachers. The student participants frequently voiced their appreciation for their support and time during the course selection and planning process. Of the 12 student participants, six students specifically referred to their teachers as a major influence in their course selection process. In a thorough explanation of the course selection process on his junior high campus, participant seven

broke down his experience which was synonymous with a majority of the other participants:

So, we got these blue cards in our writing classes to bring home to our parents, but it was just like a list of classes. Some of them we didn't know what kind of class it was. Then, like a week later, we selected the classes on a computer in writing class. Our teacher took the whole class explaining what class was and which ones we needed to take. Mrs. H even showed us a video about some of the high school classes. Mrs. H made us pick Pre-AP English I because she said we have working on stuff to get us ready.

Similarly, participant 14 described the amount of class time teachers took to thoroughly explain and encourage them to select challenging courses: "In my class, we looked through the online course guide to understand some of the electives. They are really adding lots of new classes for next year. I am already doing advanced math and science again." Sharing the similar course selection influences, participant 13 shared the idea of enrolling in more than one advanced course started with a teacher's motivation: "Oh I am only in advanced reading and writing because of Mrs. Z. She looked at my work all time and found ways to push me upwards while I was in her 6th grade class." Also, explaining his teacher's meaningful impact, participant 23 also credited his advanced course enrollment to a teacher:

I feel like most of my teachers have done this. They're always showing us how things are connected. So, whenever there was a unit I was really good at, and interested they'd be like, 'Oh, you should take AP, because you are already trying some of the work during enrichment, and I feel like you'd be good at it. And that's kind of like what I think really helped me pick my classes.

Other participants agreed with this experience stating their teachers encouraged them to select more rigorous courses based on their academic performance. In agreement, participant six echoed the perspective of supportive teachers:

Like if you are doing really good in an advanced class the teachers will tell you that you probably shouldn't level down to another class. They teach us to keep doing the advanced classed because it's get us ready for high school.

Adding his experience with a supportive teacher, participant five recounted being appreciative of the teacher's input during the course selection process:

I agree with the others that they (teachers) want us to push ourselves to become better than we already were when we entered in school, and they just want to see us be successful. Like Mr. P explained all of the different types of advanced classes we have here, so I can pick what I needed.

The students' statements indicated that students saw their teachers as positive influences on their course selection process. The students highlight their teacher's encouragement and motivation to continue on the pathway of advanced course work. Additionally, teachers were seen as resourceful and invested in their students' academic success. What is not evident from the students' statements is the number of teachers who encouraged advanced course enrollment.

Non-economically Disadvantaged Students: Teachers. The student participants seemed to form their opinions and gain their confidence about the course enrollment from their teachers. Of the 12 student participants, six students referred to their teachers as a major influence in their course selection process. Of the six student participants, two students highlighted how their teacher's feedback completely changed their original course selections. For instance, participant nine explains her dilemma with selecting electives:

At first, I selected library aid and technology, so I can chill at some point in my day. Then, I talked to Mrs. O, and she suggested I try Spanish instead because it may be less intimidating in junior high school as an 8th grader instead waiting until high school. I agreed because getting a high school credit early is pretty smart. Receiving similar advice, participant 12 shared Mrs. O suggested he take technology: “Yeah, Mrs. O told I should try technology because I like gaming and coding instead of art.” Of the eight, four student participants described the amount class time teachers dedicated to the course selection process. For example, participant 17 described the extensive support she received from her AVID teacher:

Mr. E asked us to bring the course selection cards to his class also. He had us look at the life map we made earlier in the year, and pick classes that lined up with our goals. We even had to look at colleges and think about classes that met their entry requirements. It was like so good for me because this was after going over the classes with Mrs. O. I picked the best classes for 9th grade next year.

Similar to participant 12, participant 19 also specifically accredited his advanced course enrollment to a social studies teacher:

Mr. M knows I love anything dealing with the 30's and 40's, so he lets me research new ideas during free time. He said that my super high interest in history means I should really think about advanced social studies classes for the next school year.

Other participants agreed with this experience stating their teachers encouraged them to select more rigorous courses based on their academic performance. For example, participant two shared how her writing teacher encouraged her:

Mr. R always used my work as an example for other students needing help. When we were picking classes, he walked by and pointed at the advanced box for 8th

grade ELA. He said this is your next level. It made me feel really happy that he thought I could do advanced classes next year.

Similar to participant two, participant four recounted feeling thankful of similar support from his teacher: “My teacher told me that I need to challenge myself next year. She said I spent too time playing.” The students’ statements indicate that teachers invested time and encouragement during the course selection process. The students highlighted their teachers’ interest in their future high school and college plans. Additionally, teachers were seen as knowledgeable about the course offerings.

Economically Disadvantaged Students: Peer input. Students in advanced courses form peer groups as a means of support and positive influence. Of the 12 student participants, four student participants reported enrolling in advanced courses based on peer input. For instance, participant 23 reflected on peer influences:

Most of my friends are in the next grade, and they have really helped me since sixth grade when I got here. They always help me. When we were picking classes, I asked about classes that the next grade’s going be about. Ask them about the teachers. Is there a lot of homework and test? Do they teach well or not? My friends work hard like me, so if they passed I should too.

Similar to participant 23, participant 21 reiterated a similar perspective on the importance of peer feedback: “When I was signing up for classes, I always ask people what they are taking. I asked the 8th graders in P.E. class how their teachers are, too.” Participant 24 showed agreement with a head nod adding: “Oh yeah when asked your friend about Mrs. C’s class.” Adding a similar idea, participant 22 reflected on conversation in class with peers:

This year, Mrs. H went on the high school’s website to show our class videos. The kids were like sharing all the fun projects they do and the hard work they put in.

And why they would recommend or not recommend you take it. I feel like that really helped me and my friends decide if we should take those classes, especially electives. There are so many options.

Like participant 22, Participant 24 discussed her positive experience with peer feedback: “My best friend, she helps me a lot because she takes advanced classes, too. We talk everything out, and we encourage each other to do our best. We basically do all the same classes.” The students’ statements indicated a reliance on upperclassmen and peers to learn more about a particular class or teacher. The students tend to use the information from their peers to make decisions about specific courses or teachers.

Non-economically Disadvantaged Students: Peer input. Students in advanced courses report having been together in an advanced course setting as early as elementary school which contributed to a high level of ease. Of the 12 student participants, two student participants discuss being amongst a cohort of advanced learners. For example, participant 1 shared: “Most of us have been together in special advanced classes since like 4th grade. I think it started after all of those tests in Mrs. H’s class.” Likewise, participant three indicated a feeling of comfort because he knew his peers so well in advanced mathematics: “We are like the top group in school. Like we even play all of the sports together.”

Of the 12 student participants, three student participants admitted being unsure of a course until their peers added their opinions. For example, participant 17 described her peer influences in her AVID class:

Before I was taking AVID, I was just going to take the easy way out and do all easy classes, but my friends in there pushed me to actually want to try and get further along and doing harder classes would push me.

Sharing a similar perspective, participant 19 added:

That's how it is in my math class, too! We push each other to try really hard. A lot of want Ms. W to go with us to 8th grade, so we can all have the same class with her as the teacher.

Participant four added included the value of his peer group: "I come to school for my friends most days. It's boring at home all the time, so I mean I do the work because it's not always hard." Uniquely, participant 20 discussed how her former peer group motivated her to join advanced courses because of her poor behavioral choices:

I was getting into trouble in class a lot in 6th grade. I was so bad like talking too much and disrupting the teacher and always walking around the room. My teacher told my mom that I might be bored and that I needed a challenge. And here I am about to go to high school. I needed to be away from my friends to focus. I still talk to them in the apartments after school though.

The other participants felt peer input was a major factor in the electives chosen as well. The students' statements indicated that they have formed a community amongst themselves as a group of advanced learners. The students tend to rely on their peers for motivation as well as a source of comfort. In some instances, the students' statements revealed that peer input is the basis of school attendance and positive classroom behaviors.

Economically Disadvantaged Students: Counselors. Overwhelmingly, a common focus of students was a desire to have more advising from their school counselors. Students in advanced courses indicated a strong reliance on teachers and peer input during the course selection process. However, of the 12 participants, seven students explicitly mentioned not seeking support from their school counselors during the course selection and planning process. Of the seven, four student participants perceived their school counselors as a scheduling data entry clerk. For instance, participant 13 reflected:

“Counselors usually don’t tell you which courses to take, at least they didn’t really help me. They just kind of put your schedule together.” With similar beliefs as participant 13, participant 16 shared that their school counselors were absent during the course selection process: “I have to agree that they (counselors) don’t really help you with your courses, they just put it together.” Adding to the same idea, participant 14 mentioned she did not remember her counselor’s name: “I don’t remember her name. Oh, but she was nice to me during beginning of year stuff.” Likewise, participant six referred to the counselor’s office as a resource center rather than an academic advising center: “But I can get the course approval forms for athletics and advanced band and high school art from the cabinet in the counseling office.” The other three student participants stated they relied on their teachers more than their counselors. For example, participant five shared that his counseling experience was not based on positive academic supports:

When I was signing up for courses for my 8th grade year, I put advanced reading on my enrollment card, but the counselor did not put me in the class. My mom and 7th grade teacher had to send an email during the summer. So, I feel like they (counselors) don’t think they really talk to you about it or anything.

Participant seven reiterated a similar perspective as it relates to his relationship with his school counselor: “For me, during the 7th grade year, I personally didn’t even remember who my counselor was, I barely go to their office.” Also adding to the conversation about absentee counselor-student relationship, participant 22 mentioned the delivery method of course selection information was impersonal: “They (counselors) just gave our teachers cards for us to pick our classes. The cards just had the classes listed on it. The teachers explained everything to us.” The students’ statements indicated that they did not rely on the school counselors for course selection assistance. The students generally felt they did not have a relationship with their school counselor. Student participants acknowledged

their school counseling office as a resource center. What is not evident from the students' statements is how many times students attempted to visit their counselors for support. Student participants seemingly went to their teachers before their school counselors.

Non-economically Disadvantaged Students: Counselors. Even though students in advanced mathematics courses count on teacher and peer input during the course selection process, eight of the 12 student participants mentioned not receiving direct support from their school counselors. Of the eight student participants, three student participants perceived their school counselor as a data entry clerk. For instance, participant two shared: "I know we turn in the course cards to the counselors after our parents sign it. My teacher said they have to enter into Skyward for us, but I don't know what else they do to help us." Sharing a similar opinion, participant three believed that their school counselors were a distant resource only available at parental request: "My counselor told my mom she would help me, but that's cause my mom emailed her some questions." Adding his observations of counseling support, participant four shares: "I see them in the hallway in passing period, but then they go in their office and work on their computer. I see kids in their sorting papers for them, though."

Three other student participants of the eight referred to their teachers as knowledgeable resource in their course selection process as opposed to their school counselors. For instance, participant 10 described the information her writing teacher shared during course selection:

Mrs. L had all of our cards, and she told us which class we should pick for Mrs. L had all of our cards, and she told us which class we should pick for next year. But like for math, she told us it would be automatic selection since we are in advanced. The counselors had a note next to the math part on the card.

Participant nine reiterated a similar perspective of teacher support verses counselor support:

I agree with the others that they want us to push ourselves to become better than we already were when we entered in school, and they just want to see us be successful...I feel like every year that I've been at this school I've had a different counselor. So, I've never really gotten to get a better relationship with mine.

Likewise, participant 1 shared that he was more comfortable working with his teacher during the course selection process:

Mr. V and me have a close relationship. I eat lunch in their every day with and two of my friends. He knows what is hard for me, too, like with my work since he grades it. So, he is getting me ready for next year's stuff. Oh, but when I was pissed with my mom, he sent me to counselor's office, and it wasn't bad.

The students' statements indicated a clear contrast in their perception of teacher support and school counselor support during the course selection process. The students generally felt the relationship with their school counselor was not as established as the relationship with their teacher. The student participants cited their teachers as content experts, but also aware of their social and emotional needs. Student participants acknowledged their school counselors as available upon request rather than a fluid system of support.

Skills Supporting High School and College Readiness

When the participants discussed the skills needed to support high school and college readiness, two categories emerged: (a) classroom environment, and (b) classroom resources. The theme of classroom environment explores the structure and expectations of an advanced placement course. Additionally, the participants were able to link the teachers' support and classroom resources to preparation for their post-secondary challenges.

Economically Disadvantaged Students: Classroom environment. Students in advanced mathematics perceived their classroom environment as a structured support system safe for questioning and teacher student collaboration. Of the 12 student participants, 10 students described the classroom environment in advanced mathematics courses as highly motivated with clear expectations for preparedness. Eight of the 10 student participants recounted being prepared for class with all supplies and assignments each day because their teacher cultivated an expectation of preparedness. Furthermore, three of the eight student participants cite the consistency of the daily class routines. Participant six shared that she arrives to advanced mathematics class on time each day immediately understanding the beginning of class routines:

Ms. W counts tardies, so I can't be late too much. And she has help sessions during the bell ringer time, so sometimes I need that for homework. But yeah when we walk in, we have to get our homework for her to check, do the bell ringer. And oh, copy the planner, too.

Like participant six, participant seven also believed that the classroom environment with consistent routines helps him learn: "Yeah, us too in 3rd period...I feel like I am learning something in class. I understand the homework when I use my notes at home." In comparison, participant eight added the personal benefits of the beginning of class systems: "Hey, yeah, copying the planner helps my average too, so I like that she grades it. I use it to make sure I do all of my work, too." Two other participants shared about the teacher's actions at the beginning of class. For instance, participant five shared that the advanced mathematics teacher sets the tone at the threshold of the classroom door: "When we walk in, she always is standing there like hey y'all, let's get our business handled. So, it's like we know." In agreement once more, participant seven added: "Then, she comes over with that big clip board to check our answers. I hate not having it because

then I have to come after school to get my points back.” While students believed the beginning of class routines positively impacted the learning environment, the ability to frequently ask questions has been a generous offering strongly encouraged by their advanced mathematics teacher.

Of the 12 student participants, six students appreciated the challenging material, especially because they were able to ask questions at any point during class. Of the six, two student participants accredited their teacher’s encouragement to the number of questions they ask each class. For example, participant 13 shared, “Coach L makes us all ask questions. We have this sheet of like question—ummm question stems, yeah. We even have like question races on some days for party points. It’s cool.” Also, considering questioning as positive classroom experience, participant 24 said laughing:

Coach L hates when I say I don’t get it without like telling him what it really is. He be like you’re gonna run in practice for that. But yeah like asking questions makes it fun because it’s like teaching yourself.

Like participant 24, participant 16’s perspective of the classroom environment revealed a positive teacher student relationship where questioning and conversations are welcomed. Participant 16 recounted going to the table in the teacher’s resource center for small group instruction: “I go bug Mrs. Z all the time at her table. It’s just easier to sit by her when I am working through the practice problems. I always take some of her snacks, too.” The students’ statements indicated the environment in advanced mathematics courses is driven by the teacher’s high expectations. The structure of the advanced course students helps the students use their classroom minutes productively. Additionally, a majority of the students characterize their classroom environment as safe as fun space to work through complex academic task.

Non-economically Disadvantaged Students: Classroom environment.

Students in advanced mathematics referred to their classroom environment as safe with highly motivated students that share a common work ethic. Of the 12 student participants, eight students described the classroom environment in advanced courses as highly motivated with a clear expectation that build a strong work ethic amongst students. Four of the eight student participants recounted being prepared for class each day because their teacher cultivated an expectation of preparedness for hard work. Participant two suggested that advanced mathematics challenging class where students feel safe to learn and work hard:

I feel like my classroom environment – yes, the math one – is tough but I am ok with tough. One thing I like is how my teacher makes sure everyone is kind and respectful. The students feel ok to answer questions aloud without being worried that someone is going to make fun of them. My teacher also works very hard to get us prepared for upcoming tests.

Similar to participant two and seven, participant nine believed that the classroom environment was safe and helps him learn: "I feel like I am learning something in class, and I can pretty much always do my homework." In relation to the clear expectations, participant three highlights the necessity to work hard the entire class period: "Mrs. Z pushes us like bell to bell. Sometimes, we are late to the next class because we can't pack up early. She always loses track of time because we get so much work." Other participants also added their appreciation for the classroom environment in advanced mathematics because it allowed them to access the challenging material. For example, participant four agreed by sharing the best parts of the advanced course environment:

The students in my class are really cool with each other, and the teacher makes sure we work really hard because we have to get ready for high school. We work

together to push each other. We all want to go to college. I even like that my teacher can tell when students are becoming overwhelmed or even distracted. When this happens, she works to break the lesson down into pieces. I know that at times, we are not always going to have fun, but it helps us to pay attention and learn.

Likewise, participant 10 shared that she enjoyed her advanced courses, but the structure of the advanced mathematics course is extremely helpful: “When we get to class, the first fifteen minutes we can ask questions about the homework and notes. This has been like real helpful especially when we have big tests.” The students’ statement indicates the environment in advanced courses is motivated by the teacher’s high expectations and the necessity of hard work. The structure of the advanced course students is safe for students to make academic risks and helps them accomplish challenging learning task.

Economically Disadvantaged Students: Classroom resources. Students in advanced mathematics described the resources required and available in an advanced course as essential to their success. Of the 12 student participants, nine were able to explain the resources required in advanced mathematics class. Of the nine, five student participants highlighted their daily supplies. For instance, participant 14 shared, “We have to use our composition notebook every day for like notes and practice...yeah pencils, paper and color pencils are normal, too.” Participant 15 and 16 illustrated agreement with head nods and agreement statements such as “yeah.” Likewise, participant 22 shared the importance of technology in the advanced mathematics course: “Ms. W had us download this special calculator app on our phone. We don’t use it in class because it’s for at home.” In comparison, participant 21 mentioned working in partners to sharing resources: “...yeah we work together a lot. Like sometimes, if I

missed the notes, I copy them from my friend. Or we share supplies with each other like paper.”

Of the 12 student participants, all of them understood the importance of their own resources such as notebooks and pencils. However, of the 12 participants, four students specifically referred to their teacher indirectly or directly as the most valuable resource. Participant 23 mentioned needing his teacher’s oversight at least once per class period: “I make sure Mr. V checks my practice problems before I start my homework since I always make little mistakes.” Like participant 23, participant 13 shared the value of small group sessions: “Ms. W always pulls me in small group to go over the test. We look at the questions I get wrong together, and I get to do them over again.” Also adding to the value of small groups, participant five agreed that visiting those learning sessions help to clarify his learning misconceptions: “...yeah I go to small group during lunch sometimes just to make sure I get the new stuff and when I want to leave the lunch room.” Citing teacher feedback as an important resource, participant seven commented: “I like when they circle where I went wrong. Like last year, they just told us the whole thing was wrong. This way, I get to see exactly where I messed up.”

Of the 12 student participants, three students commented on the teacher’s available resources in the classroom. For example, participant 22 shared, “Our class has different stuff for us to use, depending on the lesson or activity we’re doing. We have textbooks, dictionaries, and Chromebooks that we can use often.” Similarly, participant 24 mentioned, “...oh we only use our textbook on substitute days. Mrs. Z makes most of our stuff.” Adding in an experience with manipulatives, participant 13 described the materials provided by the teacher:

She gave us scissors to cut the shapes and glue for our notebook. We worked in groups, so we could finish before bell rang. It was a part of our notes that we needed for homework and the next test.

The students' statements indicated a need for classroom resources each day to maximize the learning experience in advanced mathematics courses. Additionally, the students understand their responsibility in being prepared with their own supplies. What is not evident from the students' statements is which advanced class emphasizes course resources and materials most. However, the students overwhelmingly acknowledged the consequences of unpreparedness as it relates to notes and homework.

Non-economically Disadvantaged Students: Classroom resources. Students in advanced mathematics described the resources required and available in an advanced course as helpful. Of the 12 student participants, five students were able to explain the resources required in advanced mathematics class. Of the five, two student participants highlighted their daily supplies. For example, participant two shared, "...yeah I have like eight composition notebooks this year. I think Mrs. H started all of the teachers with these because everyone uses them now especially in math. My teacher even does notebook checks for notes and practice problems." Similar to participant two, participant one shared the supplies required for classes, "...yeah you have to have all your stuff every day. They check for it in my class. But yeah pencils and pens and paper...highlighters and color pencils, too." The other three participants also agreed that the teacher has an expectation of supplies and learning materials each day; however, these students referenced sharing supplies. For instance, participant 11 added the supply sharing system he had with his classmate, "I always need a black pen because we can't use colored ink like pink in most of my class. My friend has the biggest pencil bag, so I borrow from her stuff." Similarly, participant 19 shared that she borrows notes from her table group: "I

never take good notes because I write too messy, so I always take a picture of my friends notes. I print them and put them in my notebook, too...my teacher was cool with it.” In agreement with participant 19, participant 20 shared, “...Mr. V is cool as long as we have all of the notes in our notebook.”

Of the 12 participants, seven students commented on the teacher’s available resources in the classroom. Of the seven, four students shared their appreciation for the technology resources. For example, participant 17 believed that the technology resources made challenging content enjoyable: “Sometimes we do activities on our devices or Chromebooks like Kahoot games to help us review for test.” Likewise, participant three shared, “Coach L posts all kinds of math games on Google Classroom. So, like when if we ever finish early, we can log on with our phones to review and play.” In relation to technology related mathematics activities, participant one added:

...oh yeah wait, so Mr. V has been teaching us to use this new calculator. It’s on the computer...I can’t think of the name, but he says it will be on STAAR. And we will need it for a lot of problems. It’s just like those big yellow calculators but online.

In agreement with participant one about the mathematics devices, participant four added, “We barely use the yellow ones now. We grab a computer when we come in from the cart, so we have the calculator ready to go.”

Participants cited the materials provided for class projects. Of the 12 participants, two participants specifically outlined their teacher’s resources as important to the successful completion of these projects. Participant 19 described:

So y’all remember the financial literacy project. She said we still needed our notebooks, pencils, glue sticks, and stuff like that every day, but she had the fun

materials like markers, stickers, construction paper and like magazines. I don't have magazines at home, so I had to do my collage in class.

Participating in the same discussion, participant 20 shared how the teacher prepared students for a project: "Mrs. Z gave us list of supplies we could need for that project, so my mom went to Target for me and my friend...yeah we shared with everyone."

Of the 12 student participants, two students perceived the classroom resources as helpful to their growth as learner. For example, participant 18 believed that the teacher's expectations for daily materials and the availability of classroom resources helps to establish good learning habits: "My teacher has the big stuff we need each day to learn like notes, worksheets and calculators. But I like being organized now because it feels like class goes faster." Likewise, participant 12 felt the classroom resources were needed to support complex topics: "I like going with Ms. W to break down the tough problems. She has these little color shape pieces and like extra practice problems at her table." The students' statements indicated a need for classroom resources each day to maximize the learning experience in advanced mathematics courses. Additionally, the students understand their responsibility in being prepared with their own supplies.

Economically Disadvantaged Students: Participation in Extracurricular Activities. Extracurricular activities create a full learning experience for students in advanced mathematics courses. Of the 12 student participants, all students participate in one or more extra-curricular activity. Of the 12 student participants, three participants added that extra-curricular activities invited many week night challenges, especially if they were not prepared to balance both school and sports. For example, participant five shared, "Oh yeah, I play AAU basketball, and we are always practicing and traveling. Sometimes, my mom makes me miss when my homework is too much." Also playing basketball, participant 14 added a similar experience: "Sometimes, I have to do my

homework at school in lunch or in art class. My coach doesn't like us to miss practice before we travel." In comparison, participant 15 added, "After softball, I am up super late doing homework, to like midnight. I get it done though." The tone of the discussions as it relates to extracurricular activities was positive as the student participants enjoy the extra opportunities.

To this end, of the 12 participants, four student participants indicate satisfaction with their activities. For example, participant 21 shared, "I've been in Girl Scouts forever. I love it. Sometimes its hard work, but it's with your friends." Participant 13 added a similar prospective as an active Girl Scout member: "We don't like go camping, but we're always doing team building stuff and visiting new places. My mom works, so I like having stuff to do instead of being in the house so much." With similar satisfaction, participant 16 added his experiences with church as an extracurricular activity:

...every Tuesday we practice the music. So, I spend lots of time with the other church members learning the music. We do Bible study with our youth group on Tuesdays, too. That's where I learned the drums, so the school stuff is easy for me.

Participant 15 demonstrated agreement with a head nod adding, "Yeah it's good to have stuff to do outside of school. If I don't have practice, I try to find tutorials or something else to do instead of going straight home."

Of the 12 participants, seven cited friendship as an important factor with extra-curricular involvement. Of the seven student participants, five participants shared being with friends was an added benefit of after school sports. For instance, participant eight said, "I have more friends on my basketball." Similarly, participant seven shared his experiences with friends: "I met my best friend at the gym like in second grade. We still play on the same team." Participant five reflected on time spent with friends during

school athletics: “Me and my friend leave early from class for track meets. We hurry and get dressed and eat our snacks in the locker room. I only ran track to hang out with my friends.” Two other participants also illustrate agreement adding, “Yeah, we ask Coach if we can leave class early all the time to just chill in the locker room with our friends.” The students’ statement indicates a fulfillment with their overall experiences in extracurricular activities. The students were involved in a variety of extracurricular activities ranging from sports to church activities. What is not evident from the students’ statements is if the outside of school extracurricular experiences was greater than the extracurricular experiences offered by the school.

Non-economically Disadvantaged Students: Participation in Extracurricular Activities. Extracurricular activities are critical for students to build social skills as they grow through secondary and post-secondary experiences. Of the 12 student participants, 10 students participate in one or more extra-curricular activity. Of the 10 student participants, two participants described how their sports activities required them to be organized. For instance, participant two described using a planner to manage homework assignments and practice schedules: “Oh I have to use my planner for AVID, so I just write everything down every week.” Similarly, participant 10 shared how she plans for a busy week: “Sometime, I write my to-do list on my bathroom mirror with pretty window markers...yeah it is cool. My mom checks it, too.” An additional three participants of the 10 added that extracurricular activities present conflicts on week nights. For example, participant 19 shared, “When we have band concerts, I can’t go to practice. I just have to practice with my dad on another night.” Sharing how evenings are managed in their home, participant 11 said, “On practice nights, I do my homework like right after school, and I usually always get it done...yeah not much T.V. time on practice nights.”

Participant nine recalls missing extracurriculars the night before STAAR testing: “Our coach has even started cancelling practices on STAAR testing, so we can like rest.”

Of the 12 student participants, two participants implement new and old skills acquired in the classroom. For example, participant 18 shared an experience from planning church fundraisers with her youth group: “My youth group needed to fundraise for summer activities, and I was in charge of note-taking during meetings.” Likewise, participant 20 implemented management and organizational duties while working with his dad’s company every summer: “I help my dad at his office. I organize the deliveries, and I sort the tons of mail for his clients.”

Uniquely, one of the 12 student participants highlighted experiences involving new people. Participant four shared, “Community service was cool because I was able to meet new people, and stuff like that. And learn from other people (other than teachers) who like what I like.” The involvement in extracurricular activities gave the participants a new set of skills that they were able to apply in the academic setting. The students’ statements indicated a satisfaction with their overall experiences in extracurricular activities. The students were involved in a variety of extracurricular activities ranging from sports to community service. Additionally, the students understand the connection to their academics and their outside activities agreeing they were more mindful and responsible.

Summary of Findings

The purpose of this mixed methods study was to examine the social capital of economically disadvantaged 7th and 8th grade students enrolled in mathematics courses in the areas of attitude toward college, teacher expectations and interactions, college readiness, and school wide support and the students’ perceptions of their junior high school experiences related to college readiness. The modified *High School Follow Up*

Survey was completed by 285 students enrolled in both advanced placement mathematics courses and non-advanced placement mathematics courses. Quantitative analysis was completed for data on the survey for research questions one through five.

Research questions one through five were answered using descriptive statistics of frequencies and percentages as well as independent t-tests to examine students' perceptions of in the areas of: (a) attitude toward college; (b) teacher expectations and interactions; (c) college readiness; (d) school wide support; and (e) parent engagement. Based on the frequencies and percentages from the descriptive statistics, whether a student enrolled in advanced mathematics courses is economically disadvantaged or not, they feel strongly that they will go to college. Students agreed that everyone has a chance to go to college.

The majority of advanced placement students, regardless of economic status, feel the teachers have high expectations for them. However, non-economically disadvantaged students enrolled in advanced placement mathematics feel their teachers inspired and motivated them to do their best. In terms of college readiness, a slight difference exists between non-economically disadvantaged students and economically disadvantaged students in advanced mathematics about the importance of taking classes to prepare for post-secondary success. Non-economically disadvantaged students perceived their awareness of college readiness courses slightly lower than economically disadvantaged students. The college readiness category showed there was not a significant mean difference based on the independent t-tests. The independent t-tests did not show a significant mean difference between non-economically disadvantaged students and economically disadvantaged students enrolled in advanced placement mathematics.

The students reported they feel supported at their junior high school and agree their junior high school created a culture that encourages college as a post-secondary

goal. However, there is some difference in perception between the non-economically disadvantaged students and economically disadvantaged students enrolled in advanced mathematics in the opportunities to improve study skills through workshops or advisory classes. In terms of parental engagement, the participants all reported their parents were supportive and encouraged them to do well in school. There is a slight discrepancy in the perception of non-economically disadvantaged students and economically disadvantaged students enrolled in advanced placement mathematics when it comes to their parents' communication with teachers and school counselors. Their responses showed that parent communication is slightly higher with non-economically disadvantaged compared to their counterparts enrolled in advanced placement mathematics.

Qualitative analysis was used to address the last research question. The qualitative data consisted of two types of focus group data from 24 students who completed the Modified Junior High School Follow Up Survey. There were two focus groups per school campus: one with economically disadvantaged student participants and the other with non-economically disadvantaged students. The qualitative data indicated students, regardless of their economic status, have a positive view of their junior high school experience. The students considered their teachers as a major influence in their academic journey especially when it comes to choosing classes for the next school year.

Additionally, student participants feel their teachers encourage them to do their best and want to see them succeed. The classroom environment was cited as a factor of the teacher's high expectations for all students to be prepared to learn as well as safe enough to ask questions. Peer input is also a major influence on the students when selecting courses. The students count on their peers' firsthand knowledge of a class or teacher before selecting particular courses.

The students unanimously credit the course resources and expectations to their success in advanced placement courses. The student participants recognized these resources as a part of the classroom environment that pushes all students towards success. However, school counselors were not seen as helpful in either course selection or post-secondary planning process. The students acknowledged that very few of them have close relationships with their counselor; therefore, they do not seek out guidance from them. Extracurricular activities added to students' school experience by providing them an opportunity to increase their social capital. Additionally, student participants understood the invaluable skills acquired through extra-curricular activities and how they were connected to academic success. The students recounted an array of skills such as organization, socialization and time management.

Conclusion

In conclusion, this study examined the social capital of students and the students' perceptions of their high school experiences related to college readiness. The student data presented in this study provides evidence that student perspectives of their attitude toward college, of teacher expectations and interactions, school wide support, and parental engagement slightly varies depending on whether or not a student enrolled in advanced mathematics is economically disadvantaged or not. Data from the student focus group supports the conclusion students' do not perceive their junior high school experiences differently based on their economic status. The data supports the need to consider and use strategies to identify underrepresented students, economically disadvantaged students, who have potential to take and be successful in advanced placement courses to encourage them to register for at least one advanced placement course. The data also supports providing various resources for the students to be successful in advanced placement courses. Chapter V discusses the findings of this chapter as they align with literature from

Chapter II, along with the implications of these findings and recommendations for future research.

CHAPTER V: SUMMARY, IMPLICATIONS, AND FUTURE RESEARCH RECOMMENDATIONS

Post-secondary success starts long before a student's senior year in high school. Higher education is no longer for the elite few, and the number of students attending colleges and universities is rapidly increasing. To this end, all students require the necessary academic resources for a college-ready future. Research demonstrates that early exposure to at least one advanced course contributes to a college-ready future (Duncheon, 2021; McCauley, 2007; Smith, 1996). Junior high school, campuses with grades 6th – 8th, should invest their resources and efforts to increase economically disadvantaged student enrollment in advanced courses extending equitable early curriculum for all students (Bryan et al., 2017; Gorski, 2017; James et al., 2017). Junior high schools that work purposefully to provide access to rigorous coursework by way of advanced courses indirectly help students explore options beyond high school (Bryan et al., 2017). Additionally, early exposure helps to promote a college-going culture, while helping to build solid foundational connections and expanding the social capital of economically disadvantaged students (Stillisano et al., 2013). Social capital's concrete benefits for education can be seen as: higher achievement on tests, higher graduate rates, lower dropout rates, higher college enrollment, and greater participation in school and community organizations (Woolcock, 1998).

Historically, advanced courses such as the Advanced Placement program were primarily taught in wealthier school districts as well as amongst an affluent student population. However, in recent years, federal and state dollars have been directed to growing the AP program in amongst economically disadvantaged high schools and high school students. At the high school level, in 2006, 1.3 million students took at least one AP exam; the number had increased to 2.6 million by 2016. The growth can be accredited

to the College Board's initiative to reach economically disadvantaged students and minority students (Wyatt & Mattern, 2011). Although many studies have been conducted in an effort to understand the impact of the AP program on economically-disadvantaged high school students, there is much less research on the specific influence of social capital on economically-disadvantaged junior high school students in advanced mathematics courses, and the positive outcomes of early exposure (Gullatt & Jan, 2003). To investigate the impact of advanced mathematics course work on economically disadvantaged students, this study explored the social capital of economically-disadvantaged students enrolled in advanced mathematics courses at the junior high schools in a large suburban school district in Southeast Texas. This chapter presents the summary, implications, and recommendations for future research of this topic.

Summary

In February 2021, data were collected for the quantitative portion of the study from 285 students in the junior high schools participating in this research study. The matched sample included 66 economically disadvantaged students enrolled in advanced mathematics courses and 66 non-economically disadvantaged students enrolled in advanced mathematics courses. Additionally, in February 2021, focus group sessions were conducted with 24 students who completed the survey used in this study. The focus group consisted of nine questions, which provided the data source for the qualitative research portion of this study. Each focus group session lasted approximately 45 minutes and took place virtually. There were two focus group sessions at each of the junior high schools. Of the 24 student participants, 12 students indicated they were female (50.0%), while 12 students indicated they were male (50.0%). Of the 24 students, four students (16.6%) indicated they were White, 10 students (41.6%) indicated they were Hispanic, and eight students (33.3%) indicated they were African American.

Throughout this investigation, the findings predominately indicated that there was not a statistically significant mean difference in students' perceptions in the first five research questions. The first five research questions addressed student social capital and the students' perceptions of their junior high school experience in the areas of: attitude toward college; teacher expectations and interactions; college readiness; school wide support; and parental engagement. Question number six utilized student focus group data to gain insight to the students' perceptions of their high school experience related to advanced mathematics course experiences and challenges; course selection and planning; college readiness; and participation in extracurricular activities.

Research question one investigated how junior high students perceived their attitude toward college. Attitudes towards college incorporated the students' continuum of feelings, positive, neutral and negative, towards their junior high learning experiences and academic achievements. As an uncommon outcome of this research study, the quantitative analysis showed there is not a significant difference between the economically-disadvantaged junior high students enrolled in advanced mathematics and non-economically-disadvantaged junior high students enrolled in advanced mathematics in terms of their attitude towards college. The descriptive statistics revealed overall the junior high advanced mathematics students, in both socioeconomic groups, expect to go to college. Both student groups believe everyone has the opportunity to go to college.

By and large, research has established the opposite, citing that students from low socioeconomic (SES) backgrounds are less likely to attend college and those who do attend are less likely to graduate than their peers from higher income backgrounds (Walpole, 2003). Walpole (2013) investigated college experiences and outcomes for low and high SES students utilizing data from a longitudinal database. Economically disadvantaged students engaged in fewer extracurricular activities, worked more, studied

less, and reported lower GPAs than their non-economically disadvantaged peers. Further adding to the United States of America's poverty line, nine years after entering college, the economically disadvantaged students had lower incomes and low educational attainment. Thus, emphasizing the necessity of a secondary school setting to ensure post-secondary preparedness for economically disadvantaged students to significantly improve the likelihood that all students have the opportunity to successfully enter and complete college level course work (Conley, 2007). Fostering an environment of college-going and quality learning experiences by way of advanced course work helps to bridge these learning opportunities for all students.

Tomlinson and Jarvis (2014) presents supporting research supporting findings for this study to reveal that building a college-going culture in junior high schools shows teachers, administrations and other stakeholders have a direct impact on a student's attitude towards college preparing all students for post-secondary opportunities. Additional findings of the Tomlinson and Jarvis (2014) study indicated teachers and schools can positively affect achievement for underrepresented students. Schools and teachers shape students' opportunities for achievement as well as provide access to opportunities not otherwise available due the dynamics of a students' socioeconomic status. The study also demonstrated a college-going culture develops the capacities of high-potential students by supporting access to challenging advanced curriculum coursework for all high school students (Tomlinson & Jarvis, 2014). To this end, experts state educators who foster academic success amongst economically disadvantaged students provide direct and indirect supports as students to comfortably navigate an academically rigorous school community (Kuh et al., 2011). A college-going culture is one in which administrators, teachers, and counselors are dedicated to promoting students' college aspirations, plans, and preparation.

Uniquely, this study provided data related to the perceptions of junior high school students; therefore, fulfilling an unfamiliar area in research as it relates to economically disadvantaged junior high students' attitudes towards college. The findings suggest teacher-student relationships help to build strong thinking toward college-going options which allows junior high students to believe that the opportunity for college is available to all students without regard to socioeconomic status. These specific teacher-student relationships build capacity by not differentiating their academic expectations. Teachers expected their students to be successful, therefore, systems and classroom routines were developed for all students to access the challenging curriculum. As the United States of America increasingly requires a college degree for a globally competitive workplace, ensuring that more students from economically disadvantaged populations have the opportunity to enter and complete college is an equity imperative. Based on the data in this study, it could possibly mean, a college-going culture should be further defined and promoted as early as junior high school, with an inclusive focus on economically disadvantaged students. To this end, all students have to be exposed to rigorous course offerings such as advanced mathematics and science, experience positive relationships with teachers where high learning expectations are paramount, engage with administrators who are actively involved in the learning process, and intentionally partner with counselors in the course selection process.

Research question two explored how students perceived their teachers' expectations and interactions. Teachers' expectations and interactions combine the way teachers and students interact in their classroom relationships (Englehart, 2009) and the ideas teachers hold about the potential achievement of their students (Hoge, 2022). As a unique outcome of this research study, the quantitative analysis demonstrated there is not a significant difference between the two student groups in terms of their perception of

their teachers' expectations and interactions. The descriptive statistics show the students in the junior high advanced mathematics courses, in both socioeconomic groups, perceived that teachers care about them and have high expectations for them. The junior high students' survey responses illustrate that teachers wanted to see them succeed without any regard to their economic status.

Typically, research reports a reasonable differential between teacher's expectations for economically disadvantaged students versus non-economically disadvantaged students (Solomon, Battistich & Hom, 1996). Solomon, Battistich, and Hom (1996) stated teachers in schools serving students from economically disadvantaged backgrounds were less trusting of students and more skeptical about their abilities. Warren (2002) examined whether teachers hold the same expectations for all children, especially children of color and lower socioeconomic status, and whether they believe they make a difference in their students' lives. The major findings were that only 25 percent of teachers interviewed held high expectations for all children. The teacher's responses indicated that ethnicity and economic status did not significantly impact their belief of their students. The research did not address the findings for the remaining 75 percent of teachers as it relates to their expectations which does allow speculation. Warren's (2002) study presents a stark contrast to the findings of this research study which demonstrate all students perceive a high level of care and support from the advanced mathematics teachers. Student responses overwhelmingly indicated that junior high teachers did as much as they could to inspire and motivate all students regardless of their socioeconomic status.

Wang et al. (2020) outlines the importance of high teacher support and motivation on student academic achievement as these factors positively influence academic achievement amongst economically disadvantaged students. Similar to other research, a

high level of support and motivation in this study was illustrated by a productive classroom environment where students not only learn more, as measured by standardized tests, but they are also more likely to do better on other measures of success, such as school attendance and increased college-going rates (Gilbert et al., 2013). This research suggests that it is possible for teacher-student relationships to positively influence economically disadvantaged student achievement. This positive influence means that within a classroom of non-economically disadvantaged students, economically disadvantaged students can feel and perform comparably.

Creating this comparable level of performance amongst students in low and high socioeconomic backgrounds is related to a student-centered environment cultivated by a teacher's expectations and instructional practices. A student-centered environment creates access for all students to learn (Pedersen & Liu, 2003). An effective teacher, as defined by a high level of care, is concerned about more than just improving test scores as effective teaching and high expectations shape students' post-secondary outcomes by preparing students for post-secondary opportunities (Paolini, 2015). Furthermore, teachers make their students feel safe to take academic risks while knowing when to be tough to help students reach their full potential (Stronge, 2018). These factors are cultivated by an environment with consistent systems, routines and classroom resources as evidenced by this study.

Exclusive to this study, the data illustrated the effectiveness of teacher expectations and interactions for economically disadvantaged students. The learning environment and positive learning experiences provided by the teacher in the student-centered environment changed how students perceive their post-secondary options which is linked to student self-efficacy (Lorsbach & Jinks, 1999). An unintended finding of this research was the improved self-efficacy of economically disadvantaged students. When

students share their teachers' beliefs of their capabilities, they buy into the expectations and are connected by the meaningful interactions no longer feeling the socioeconomic differences amongst their peers (Davis, 2006).

Research question three asked students' perceptions of their college readiness. College readiness is the ability for students to demonstrate the knowledge and skills required to successfully complete basic freshman level college courses (Conley, 2007). As an uncommon outcome of this research study, quantitative data analysis demonstrated there is not a significant difference between the two student groups, economically disadvantaged and non-economically disadvantaged in terms of their perceptions of college readiness. The descriptive statistics show the students in the junior high advanced mathematics courses, in both socioeconomic groups, are narrowly aware of the courses needed to prepare for college.

As a method of college readiness, Mac Iver et al. (2019) stated that helping students understand how to maximize their academic potential will help bridge the opportunity gap for economically disadvantaged students' in advanced courses. By in large, research indicates readiness for college is significantly lower amongst economically disadvantaged students as compared to their non-economically disadvantaged peers (Lee & Slate, 2014). To address these challenges systematically, researchers and policymakers developed strategies to identify data-driven indicators that can predict postsecondary readiness (Bowers, 2016; Hester et al., 2021). One specific indicator identified was AP course enrollment by the ninth grade. This strategy is beneficial as advanced courses align their curriculum with college expectations helping to close the achievement gaps. The results from this study indicated that postsecondary readiness as measured by AP course enrollment is necessary to guide timely and targeted student, classroom, and school-level interventions for economically disadvantaged

students in an effort to enhance their post-secondary options. Bowers (2016) and Hester et al. (2021) data highlights the deficits within the current study because student responses indicate a high level of unawareness as it relates to college readiness. Both socioeconomic student groups were unaware of the courses and other learning experiences needed to prepare for college.

Research suggests that one of the major reasons that students falter in college is the gap between their high school experiences and college expectations. This is especially accurate of many first-generation students who find that their college courses are fundamentally different from their high school courses (Conley et al., 2006). College instructors expect students to draw inferences, interpret results, analyze resources, support arguments with evidence, solve complex problems that have no obvious answer, draw conclusions, offer explanations, conduct research, and think deeply about what they are being taught (National Research Council, 2002) which are skills that maybe limited depending on their junior high and high school experience. These experiences are further limited for first-generations students simply by the nature of being first to attend college without any familial supports (Pascarella et al., 2004). To replicate the previous study mentioned, additional strategies implemented as early as junior high school can help to increase college-ready students. For example, implementing high school and college seminars for 8th grade students can keep students engaged academically which is key to college success (Conley, 2008). Furthermore, seminars build upon the college-going culture as a school-wide approach to college-readiness.

Specific to this study, the data illustrates the minimal level of awareness as it relates to the inevitable growth linked to advanced course enrollment. The advanced course design and classroom environment is synonymous with college readiness (Hannafin et al.,1999). A positive finding of this study detailed that students were

encourage to continual enrollment in advanced courses by their teachers. This could possibly mean that the teacher's awareness of the college readiness need was indirectly addressed when they motivated students to add more than one advanced course during the enrollment process. In this effort, teachers adopt the role of a preparedness agent assuring students stay the advanced course route as they would soon reap the benefits as first-year college students.

Research question four investigated students' perceptions of school-wide support. School-wide support is a process that aims to change the way a school or district thinks about behavior management and academic achievement (Metzler et al., 2001). As an outcome of this research study, quantitative data analysis demonstrated there is not a significant difference between the two student groups, economically-disadvantaged and non-economically disadvantaged in terms of their perceptions of school-wide support. The descriptive statistics show the students in the junior high advanced mathematics courses, in both socioeconomic groups, feel welcomed and supported at their school. However, the non-economically-disadvantaged students enrolled in advanced mathematics classes believed their junior high school helped them improve their study skills. While economically disadvantaged students in advanced mathematics students indicated they received resources such as a school planner to help them learn organization and time management skills. These findings are consistent with research that investigated the effects of positive school wide support. Caldarella et al. (2011) reported that school-wide support was demonstrated through social emotional interventions and strong academic practices; student centered instruction with a focus on highly engaging lessons; praise notes for teachers and students. School wide support is an all-inclusive investment into students' total continuum of learning needs.

Other supporting research has narrowed school stakeholders as a key school factor which directly influence academic performance amongst other factors such as instructional materials, discipline, class size and the school wide environment (Wang & Degol, 2016). As essentials to the school-wide environment, administrators, counselors, teachers and other campus personnel work together to create a welcoming school community for students to succeed despite their external circumstances (Kuh, Kinzie, & Schuh et al., 2011). An inclusive school environment, one that creates a sense of belonging and connectedness, helps students to feel cared about and supported at school (Divoll, 2010; Ma, 2003). Although studies indicate that low income students generally have lower levels of academic achievement than their more affluent peers, school-wide supports creates an environment with a welcoming atmosphere developing higher rates of satisfied economically disadvantaged students (Bhattacharya & Sen, 2004). As a result, economically disadvantaged students' motivations are positively influenced by essential school stakeholders who implement school-wide supports. An example of a school-wide supports referenced in this study included specific, genuine praise given immediately following positive student behaviors in line with the teacher's expectations. Whole-class recognition given to students reinforced the expected behaviors and enhanced the teacher-student interactions.

Exceptional because its uncommon, the data from this study highlights economically disadvantaged students do not feel ignored and have a sense of school connectedness which was similar to their non-economically disadvantaged peers. This could possibly mean school stakeholders have the ability to create a school environment where high expectations and praise in an advanced course make rigorous content attainable regardless of economic status. This research study demonstrates that when schools support students with clear structure, consistent expectations for high quality

behavior and performance; then, students have a healthy setting in which they can practice high levels academic decision-making skills. Furthermore, this study demonstrated through survey responses that teachers build school connectedness in the classroom when they display genuine concerns for each student's academic progress which saturates the entire school environment.

Research question five explored students' perception of parental engagement. Parental engagement in schools is defined as parents and school staff working together to support and improve the learning, development, and health of children and adolescents (Thomas et al., 2020). As an outcome of this research study, the quantitative data analysis determined there is not a significant difference between the two student groups in terms of their perceptions of parental engagement. The descriptive statistics show the students in the junior high advanced mathematics courses, in both socioeconomic groups, perceive the same levels of encouragement and support from their parents to attend college as well as to continue taking advanced courses. Research supports that parental involvement has a positive impact on student achievement (Reynolds et al., 2015).

Similar to teachers as essential stakeholders, consistent parental involvement helps to develop school connectedness which builds academic awareness (Christenson & Sheridan, 2001). Moreover, parental involvement works best to support students when a multitude of involvement options are provided by the school (Stein, 2018). As evidenced by this study, teachers and counselors communicated with parents often. Also, in further discovery this study's participating junior high schools, there were multiple avenues for communications utilized such as weekly newsletter emails, social media postings and frequent updates to the district and school websites. This could possibly mean that district leaders, administrators, counselors, and teachers value partnerships with parents. To this end, schools display value in parental involvement by tailoring opportunities to the

unique circumstances and assets of its families. Dotterer and Wehrspann (2016) recognizes any level of parental involvement leads to higher levels of student achievement. Addressing parental engagement eliminates barriers such as communication in an effort to improve academic preparedness (Hill & Tyson, 2009).

Parental engagement is an integral component of student achievement and building a school community. Research studies on the effect of meaningful parent involvement programs in schools have found that when parents are involved, students achieve more, regardless of socioeconomic status, racial background, or the parents' education level. (Sui-Chu & Willms, 1996). As evidenced by this research, both socioeconomic groups stated that their parents encouraged them to do well in school. Economically disadvantaged students cited a high expectation of achievement by their parents while non-economically disadvantaged students indicated a high level of parental engagement as it related to grades and organizing homework obligations. Hopfenberg (1990) suggested that parental engagement is not a substitute for high-quality curriculum, rather it serves as a collaborative tool for school improvement.

Through qualitative analysis, research question six analyzed students' perceptions of their junior high school experience related to advanced course challenges, course selection and planning, college readiness, and participation in extracurricular activities. The student participants enrolled in advanced mathematics, in both socioeconomic groups, considered their junior high school experience as positive. Research highlight the early adolescent experiences in junior high school by their need for positive social connections and strong academic interactions (Roseth & Johnson, 2008). The student participants in this study described their overall academic experiences as beneficial learning opportunities. The advanced courses motivated students by creating satisfaction

surrounding the learning complex tasks, positive teacher-student interactions, reliance on peers and the safety cultivated in the learning environment.

In this study, economically disadvantaged students highlighted their general willingness to enroll in advanced mathematics because of their positive current experiences with a supportive teacher. Similar research shows that a teacher can positively shape a student's academic experience by holding students to high expectations, asking challenging questions, involving students in their learning, and explicitly modeling good reading habits (Ferguson, 2003; Bryan & Atwater, 2002; Allen, 1992). As evidenced by this study, it is possible that a teacher can improve an economically disadvantaged student's experience in advanced mathematics by not conceding to the socioeconomic status as an immediate barrier. The students in both student groups did not recognize the complexity of content over the method of content delivery which could mean delivery of instruction from the teacher is what ultimately matters. Also, mentioning a willingness to enroll in advanced mathematics courses for the next school year, non-economically disadvantaged student participants emphasized the commitment required to successfully complete the advanced mathematics curricula. As evidenced by this study, non-economically disadvantaged students' previous advanced course experience created an expectation of hard work to which they were prepared for and in compliance with prior to 7th and 8th grade. Strong academic commitment is cultivated in a classroom where high expectations, belonging and positive relationships reside consistently. This is similar research that states classroom community improves students' attitude towards academics (Allen et al., 2018). Based on the data in this study, this could potentially mean that despite a student's economic status overcoming academic challenges in advanced courses is related to development of a strong classroom community and teacher-student relationships.

Research emphasizes a supportive classroom community fosters kindness, respect, generosity, empathy, and compassion among their students (Divoll, 2010; Cole et al., 1999; Bernard, 1993). This could possibly mean that developing a caring classroom community is primary to the delivery content and course material. More specifically, research suggests that people need to fulfill the student's basic social capital needs before pursuing academic learning (Huitt, 2001). As a basic need, social capital equates to the network of relationships and kindness among people with the power to move communities forward (Skinner et al., 2008). Community builds cooperation with others that creates a willingness to engage with initiatives which means an investment of time from both the teacher and students (Tschannen-Moran, 2001). Social capital is an eagerness to help because you have taken the time to build and cultivate relationships (Glittell & Vidall, 1998). The teachers cited in the qualitative portion of this study were perceived as high-quality stakeholders supporting their students through rigorous curriculum. Furthermore, these classroom communities included kind gestures and respect where all students were generously provided with the resources to access the learning task. Unique to this study, all students reported feeling capable of accomplishing their advanced course work without any consideration given to their economic status.

Similarly, during the focus group discussions, the students in both socioeconomic groups stated they are far more motivated to work through challenging learning tasks because of the relationship with their teacher. The student participants recognize their teacher's genuine desire for them to succeed in advanced mathematics courses. These findings are congruent with research study investigating teacher-student relationships development. Osborne and Jones (2011) claimed that if a teacher is able to foster high-quality relationships with all students, then students work harder in the classroom. Based on the data in this study, this could potentially mean students, regardless of their

socioeconomic status, are able access advanced course curricula with scaffolded instruction provided by a highly qualified teacher. Research suggests the single variable that best predicts students' sense of school connectedness is their relationship with teachers (McNeely & Falci, 2004; Wilson, 2004; Whitlock, 2006). McNeely and Falci (2004) continued with the idea that teacher-student relationships is more important than race, socioeconomic status, academic achievement, and their relationships with peers. Strong teacher-student relationships not only mitigate misbehaviors and apathy, but improve students' motivation and engagement (Zoromski et al., 2021). As evidenced by the data, as a measure of high-quality teacher-student relationships, economically disadvantaged students appreciated their teacher's resourcefulness and willingness to allow an extensive amount of questions during instruction. While non-economically disadvantaged students valued their teacher's investment of time when delivering new or difficult content as well as their teacher's continuous encouragement. Teacher-student relationships offer schools continual opportunities to support students' learning and create access to rigorous course work.

Also mentioned as an important finding in this study, the data reported a skewed relationship with the school counselors as it relates to the course selection and planning process for post-secondary readiness. Economically disadvantaged students acknowledged the counseling office as a resource center. However, a large number of participants perceived the counselors as experts in schedule creation rather than a stakeholder servicing the social and emotional needs of students. This finding could possibly mean the lack of follow-through from an important school stakeholder is a barrier to student success and college readiness. Research indicates the role of a school counselor is significant to the academic success for economically-disadvantaged students (Dockery & McKelvey, 2013). School counselor research implies that school counselors,

through their professional roles and responsibilities, are in a unique position to advocate for increased college access for underrepresented students, economically disadvantaged students (Schaeffer et al., 2010). The research data indicated that minority students, economically disadvantaged students, and first-generation students are underrepresented in four-year colleges (Schaeffer et al., 2010). The study explained the concentrated effort to encourage school counselors to act as advocates in their schools while addressing inequities and promoting the college access of underrepresented groups of students. Schaeffer et al. (2010) explored the definition and practice of high school counselor advocacy as it relates specifically to increasing access for students traditionally underrepresented in four-year colleges. Results indicated a priority and value of school counselor advocacy; however, participants also emphasize challenges to advocacy that lie in their schools, communities, and even in the school counselors themselves. In addition to promoting student academic success and college readiness, school counselors can help students develop their communication, problem solving, teamwork, leadership, creativity, awareness, responsibility, and self-management skills. These skills and assets are necessary for growth and success upon graduation.

Moreover, focus group participants agreed their participation in extracurricular activities created a positive school experience. Knisfsend and Graham (2011) found when students participate in extracurricular activities, they feel a greater sense of belonging to their school which positively impacts student achievement. So, perhaps, building social capital amongst economically disadvantaged students can begin with extracurricular activities. These activities can help to build invaluable social capital experiences without disrupting the new academic challenges being presented in the classroom community. Possibly, the social capital opportunities will help to intrinsic academic inspirations. Furthermore, it could be possible athletic teams, clubs, and performing arts can lead to

active participation, investment, and feeling of community within the school and classroom. As evidenced by this study, both socioeconomic groups referenced the classroom skills needed to effectively participate in their extra-curricular activities. For example, organization, note-taking and teamwork were viewed as interdisciplinary skills for both socioeconomic groups. Students perceived the value of their classroom experiences as it directly benefited the extra-curricular activity experiences.

Implications

As a result of this study's examination of the economically disadvantaged 7th and 8th grade students' perceptions regarding their participation in advanced mathematics courses, there are implications for junior high school administrators, counselors and parents. For administrators and counselors, this research revealed the critical need for school leaders to establish a college-going school culture for students (Cohen et al., 2009), based on student's assessment of the college readiness and school-wide support. For teachers, this research provided data related to the perceptions of junior high school students in regards to what motivates them to overcome challenging academic tasks such as positive teacher-student relationships and supportive classroom communities (Kearney et al., 2014). The research also highlighted the value of ongoing parental engagement to ensure students are maximizing the entire learning experiences as well as being scheduled into classes that will help them meet their post-secondary goals. Providing parents with various participation opportunities and communication sources is respectfully responsive to their diverse backgrounds and needs.

Educational stakeholders should concentrate resources towards improving the disproportionate enrollment of economically disadvantaged students in AP courses as early as junior high school. By its program design, AP curricula offers rigorous college-level courses and assessments for secondary students, and its outcome ensures an

increased level of college readiness. Students enrolled in one or more AP course bridge the opportunity gap for economically disadvantaged students which is a significant indicator of post-secondary success (Kerr, 2014). This study reveals the relationship between AP course enrollment and student motivation. Both student groups in this study were enrolled in advanced mathematics, and reported an increased motivation due their teacher's expectation, course resources and classroom environment. The strategies implemented by the teachers cited in this study must be further studied and documented for immediate use. For example, students cited the use of a teacher resource center in their classrooms for small group support and a structured time for peer tutoring and homework questions as strategies that made the content accessible in the advanced mathematics course. These strategies coupled with frequent statements of motivation created a safe learning environment for economically disadvantaged. Often unaware of the longstanding implications, school administrators and counselors dismiss the cultural urgency to be especially inclusive of economically disadvantaged students in rigorous course work (Chapman et al., 2014). This results in a small portion of economically disadvantaged students receiving college readiness resources in comparison to their counterparts.

Additionally, this study revealed the need for a school-wide approach to course selection and planning at the junior high school level. This approach would require establishing procedures that positively influence economically-disadvantaged students enrollment in at a least advanced course. Increasing advanced course enrollment has an impact on student achievement and improves school climate (Gonder & Hymes, 1994).

Economically disadvantaged students enrolled in advanced mathematics reported a caring motivating classroom environment as a factor contributing to their academic success. This implies that the teachers' expectations and classroom procedures in an

advanced course should be available to all economically disadvantaged students to secure a more improved post-secondary outcome. School administrators should consider this factor when looking for strategies to positively impact student achievement. This reality may create a clear path for school administrators' close educational gaps. To this end, an inclusive strategy for economically disadvantaged students is an open enrollment policy for advanced courses. An open enrollment policy allows students to enroll in advanced courses based on their interests and post-secondary goals. An open enrollment policy places school counselor at the center of the course selection and planning process as their design would be to support students as they explore their options beyond high school graduation rather than containing their expertise to schedule data entry. Additionally, an open enrollment policy lessens the ability for teachers and staff to implement barriers for students based on their own biases, experiences or other criterion-based systems (Bernhardt, 2014b). School counselors must work with school administrators and school district leaders to develop a strategic plan to identify, recruit, and educate students and parents on the benefits of participating in AP courses. This strategic plan allows for school stakeholders to build a comprehensive profile of students who are not taking advantage of the AP curriculum and subsequently develop structures and supports to encourage economically disadvantaged students to participate in AP courses.

Research suggests that economically disadvantaged students and their parents do not have the social capital and have not been exposed to the benefits of advanced curriculum (Ream & Palardy, 2008). They are not aware of the opportunities provided their students to participate in the advanced courses and the benefits related to college readiness. As an extension to the open enrollment policy, increased communication, education and outreach towards economically disadvantaged students would be paramount in sharing the opportunities and benefits of the AP curriculum as early as

junior high school. Moreover, the AP course enrollment data should be visited yearly as circumstances for secondary students can be consider fluid. From year to year, student growth and development should be factored into the capability handle a more rigorous course load.

To maintain the integrity of the AP program, a systematic approach should be developed to properly transition and support students as they enroll into AP courses. Founded in 1900, College Board developed AP courses to expand access to higher education as early as high school. Therefore, implementing the program with fidelity with the rigor of the course work at the forefront ensures the sustainability of the program's mission. AP courses should not be diluted for the sake of access. An intentional inclusion strategy for economically disadvantaged students for staff to implement in an effort to maintain high levels of rigor is to partner with a program such as Advancement Via Individual Determination (AVID). The AVID program identifies traditionally underrepresented students and provides supports for them through study skills, organization skills, as well as teaching critical reading and writing skills through an AVID elective class (Bernhardt, 2013). Additionally, the AVID program aids schools in creating a college-going culture by expanding the study skills, organization skill, and critical reading and writing skills to all classes throughout the campus. Through AVID, school administrators and teachers are trained on critical reading and writing skills that allow them to support students as the rigor variant drastically changes in AP courses. A partnership with the AVID program acknowledges that students new to AP courses will flounder through the phases of transition. So, ongoing training for teachers and communication with parents will support students as they navigate their path through AP course work without forsaking the quality of the AP program design.

Furthermore, to support the increased enrollment of economically disadvantaged students in AP courses adequate funding for appropriate teacher trainings. The funding would support the needs of teachers, resources required and parental education programs. For example, College Board offers teacher trainings for AP curriculum implementation which will ensure teachers are able to meet the needs of the diverse learning population while maintain the integrity of the College Board program. This high-level training equips teachers with the skills and strategies and provides collaborative opportunities to extend the level of rigor in the courses. Clayton et al. (2018) suggests teachers have long known that feeling safe and secure in a classroom community helps students focus on learning. Therefore, teacher trainings for classroom management as it relates to the building of community could possibly foster a sense of belonging significantly improving academic engagement.

Through collaborative conversations, teachers are able to assess curriculum needs and create plans to support the intense instructional demands of the AP curriculum. As a part of the collaborative planning process, teachers can discuss the strengths, weaknesses, opportunities and threats of the implementation process with standardized assessment data, AP curriculum framework and other data points as references. Additionally, collaborative conversations reveal the required school systems and resources needed to successfully increase AP course enrollment. For example, as diverse learners begin to traverse new instructional territories after school mentorship programs to assist students and structured tutorials will add to the college-going cultural emerging while ensuring students maintain the course of high-level coursework. Structured tutorials and mentorship are designed to eliminate the unintentional barriers that exist for students who are new to the AP curriculum. Structured tutorials will extend opportunities for learning as well as narrow knowledge gaps, while mentorship adds new study skills and

organizational strategies to the student's learning toolkit. Subsequently, the structured tutorials and mentorship create a more supportive school and classroom environment for all students. It is vital for students new to the demands of AP coursework feel connected to a network of support (Chamber & Huggins, 2014).

Research has established rigorous course work in high school prepares students for college (Adelman, 2006; Engberg & Wolniak, 2009). This research seemingly supports expanding AP programs into junior high schools to reach more students. Expanding the AP program has value beyond standardized test scores as it includes better study habits and positive learning behaviors better preparing them for high school courses. Identifying students as early as elementary school who have the potential to navigate rigorous curriculum beginning in 7th grade allows students to build critical thinking skills earlier than high school. Those critical thinking skills provide students with the tools necessary to matriculate through rigorous curriculum throughout their school career. Upper elementary schools must also consider programs to expose students to rigorous curriculum. For example, implementing gifted programs or STEM academies for upper elementary students builds vertical alignment to junior high school advanced course work. Moreover, there is an inherent connection to early exposure to rigorous course work to improved literacy. Providing economically disadvantaged students access to rigorous course work provides a path to improved literacy which transcends education setting students up for post-secondary success. Therefore, elementary schools, junior high schools and high schools should build vertical teams to align curriculum to ensure the content is relevant, rigorous and inclusive for all students at all learning levels.

Recommendations for Future Research

Findings from this study involved obtaining quantitative and qualitative feedback from students. Although the findings provided data and information about students'

perceptions, recommendations for future research will help expand the knowledge on this topic. The following recommendations are based on data and findings from this study.

This study took place in three participating junior high school campus from a suburban school district located in the southeast region of Texas. Therefore, results are limited to campuses and districts with similar demographics. Data collection from a larger populations and sample may produce different results. A recommendation for future research would be to conduct the study with students in grades five through ten, upper elementary through high school, to determine how the needs of students differ based on educational level. Additionally, study should focus on how students are identified early on and how they are informed about Pre-AP or AP courses. As a longitudinal study, the study should examine those students' progress through to AP courses in high school and their successful completion of one or more years of college.

Another recommendation is to examine junior high schools with systematic approaches or strategies to support a college-going culture, such as a junior high school campus with an active AVID program, a college and career advisor or a STEM program. The study could provide understanding on how to maximize and replicate the work of the college and career advisor on high school campuses. The study could examine specific supports students need to understand the benefits of participating in AP courses as well as navigating the college application process. The study could provide insight on how to develop and implement those supports to aide economically disadvantaged students in overcoming factors limiting their participation in AP courses.

A final recommendation would be to conduct this study with modifications to the instrument removing the option to respond neutrally. Conducting this study again, adjusting the methods of responses would require students make a definitive choice or even clarify the content being presented in the survey. This would allow the opportunity

for students to complete the survey in with a more well-rounded picture of the students' perspectives. In a second study, further depth could be developed of the difference in perspectives between economically disadvantaged students and non-economically-disadvantaged students enrolled in AP courses.

Conclusion

Research shows that when students are given access to advanced coursework, they are motivated to work harder and engage more in school, leading to fewer absences and disciplinary infractions and higher graduation rates (Jarsky et al., 2009). Cisneros et al. (2014) argued access to rigorous courses contribute to post-secondary success for economically disadvantaged students as compared to their counterparts. Additionally, students graduate from high school with college credits, giving them a head start (Holland, 2015). Students who enter college with six or more credits are more likely to earn a degree. When advanced opportunities are extended to economically disadvantaged students, students thrive alongside their counterparts. Opportunities to take advanced courses create a path for students to have even more opportunities in the future.

Furthermore, a student's perception of teacher support and a sense of school belonging are integral in developing a positive attitude toward college and their level of college readiness (Freeman et al., 2007). Schools are obligated to provide an equitable academic opportunity for students as it relates to their access to college readiness curriculum (James et al., 2017). Schools must acknowledge the disproportionate enrollment of economically disadvantaged students in AP courses and develop a strategic plan to increase enrollment and assist the students as they traverse new academic territory (Watt et al., 2002). Being denied access to rigorous course work based on economic statuses beyond a student's control means creating arbitrary barriers allowing students to miss out on critical opportunities that can set them up for success in college and careers.

It is critical for all students, especially economically disadvantaged students, have access to and be supported in advanced coursework. To provide equitable access, it is imperative that schools create an environment conducive to high expectations with structured supports such as tutorials and mentorship. With prioritize funds and strategic plan, schools can provide the necessary resources to build a college-going culture and train teachers with adequate AP course materials.

As essential school stakeholders, school leaders, teachers and counselors help students access more of their social capital and network, which leads to more economically disadvantaged students engaging in rigorous curriculum. With increased social capital, the students are also able to understand and navigate the post-secondary options (Glass, 2022). For many economically disadvantaged students, the access to more social capital, rigorous curriculum, and post-secondary opportunities changes the trajectory of not only their future, but the future of their family.

REFERENCES

- Adelman, C. (2006). The toolbox revisited: Paths to degree completion from high school through college. *US Department of Education*.
- Allen, K., Kern, M. L., Vella-Brodrick, D., Hattie, J., & Waters, L. (2018). What schools need to know about fostering school belonging: A meta-analysis. *Educational Psychology Review*, 30(1), 1-34.
- Allen, W. (1992). The color of success: African-American college student outcomes at predominantly White and historically Black public colleges and universities. *Harvard Educational Review*, 62(1), 26-45.
- Amaro-Jiménez, C., & Hungerford-Kresser, H. (2013). Implementing an additive, college access and readiness program for Latina/o high school students in the US. *Current Issues in Education*, 16 (3).
- Anderman, L. H., & Freeman, T. M. (2004). Students' sense of belonging in school. *Advances in Motivation and Achievement*, 13, 27-63.
- Anderson, B. (2020). "See Me, See Us": Understanding the Intersections and Continued Marginalization of Adolescent Gifted Black Girls in U.S. Classrooms. *Gifted Child Today Magazine*, 43(2), 86–100.
<https://doi.org/10.1177/1076217519898216>
- Arce-Trigatti, P. (2018). The impact of state-mandated Advanced Placement programs on student outcomes. *Economics of Education Review*, 63, 180-193.
- Arnold, K. D., Lu, E. C., & Armstrong, K. J. (2012). The ecology of college readiness. *ASHE Higher Education Report*, 38(5), 1-138.
- Atherton, M. C. (2014). Academic readiness of First-Generation College Students: Different Perspectives. *Journal of College Student Development*, 55(8), 824-829.

- Aziz, A. (2015). The operational value of human capital theory and cultural capital theory in social stratification. *Citizenship, Social and Economics' Education*, 14(3), 230-241.
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191.
- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, 44(9), 1175.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28, 117-148.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*.
- Baker, J. A. (1999). Teacher-student interaction in urban at-risk classrooms: Differential behavior, relationship quality, and student satisfaction with school. *The Elementary School Journal*, 100(1), 57-70.
- Barnett, E. (2006). Helping high school students succeed in college classes (Practice Brief)- New York, NY: Teachers College, Columbia University, National Center for Restructuring Education, Schools, and Teaching.
- Bell, J., Schargel, F., & Thacker, T. (2014). *Schools where teachers lead: What successful leaders do*. Routledge.
- Belotto, M. J. (2018). Data analysis methods for qualitative research: Managing the challenges of coding, interrater reliability, and thematic analysis. *Qualitative Report*, 23(11).
- Bernhardt, P. (2013). The advancement via individual determination (AVID) program: Providing cultural capital and college access to low-income students. *School Community Journal*, 23(1), 203-222.

- Bernhardt, P. (2014a). How do I get in? Criteria shaping the high school course recommendation process. *Current Issues in Education*, 16(1&2), 87-102.
- Bernhardt, P. (2014b). Making decisions about academic trajectories: A qualitative study of teachers' course recommendation practices. *American Secondary Education*, 42(2), 33-50.
- Bernard, B. (1993). Fostering resiliency in kids. *Educational leadership*, 51(3), 44-48.
- Bersamin, M., Garbers, S., Gaarde, J., & Santelli, J. (2016). Assessing the impact of school-based health centers on academic achievement and college preparation efforts: Using propensity score matching to assess school-level data in California. *The Journal of School Nursing*, 32(4), 241-245. doi:10.1177/1059840516634805
- Berg, B. (2001). Qualitative research methods for the social sciences.
- Berzin, S. C. (2010). Educational aspirations among low-income youths: Examining multiple conceptual models. *Children & Schools*, 32(2), 112-124.
- Bettinger, E. P., & Long, B. T. (2009). Addressing the needs of underprepared students in higher education: Does college remediation work?. *Journal of Human Resources*, 44(3), 736-771.
- Bhattacharya, C. B., & Sen, S. (2004). Doing better at doing good: When, why, and how consumers respond to corporate social initiatives. *California Management Review*, 47(1), 9-24.
- Billingham, C. (2019). Within-district racial segregation and the elusiveness of White student return to urban public schools. *Urban Education*, 54(2), 151–181. <https://doi.org/10.1177/0042085915618713>

- Born, T. (2006). Middle and early college high schools: Providing multilevel support and accelerated learning. *New Directions for Community Colleges*, 135, 49-58.
- Bosworth, K., Convertino, C., & Hurwitz, J. T. (2014). Common purpose and different approaches to support college-going in five southwestern districts. *American Secondary Education*, 4-24.
- Bowers, D. E. (2016). *Advanced placement and dual enrollment as related to college readiness and retention at a Tennessee university* (Doctoral dissertation, East Tennessee State University).
- Bryan, L. A., & Atwater, M. M. (2002). Teacher beliefs and cultural models: A challenge for science teacher preparation programs. *Science Education*, 86(6), 821-839.
- Bryan, J., Moore-Thomas, C., Gaenzle, S., Kim, J., Lin, C. H., & Na, G. (2012). The effects of school bonding on high school seniors' academic achievement. *Journal of Counseling & Development*, 90(4), 467-480.
- Burney, V. H., & Beilke, J. R. (2008). The constraints of poverty on high achievement. *Journal for the Education of the Gifted*, 31(3), 295-321.
- Byrd, K. L., & McDonald, G. (2005). Defining college readiness from the inside out. *Community College Review*, 33, 22-37. doi: 10.1177/009155210503300102
- Caldarella, P., Shatzer, R. H., Gray, K. M., Young, K. R., & Young, E. L. (2011). The effects of school-wide positive behavior support on middle school climate and student outcomes. *RMLE online*, 35(4), 1-14.
- Candela, A. G. (2019). Exploring the function of member checking. *The Qualitative Report*, 24(3), 619-628.

- Carlin, L. E. (2008). *Expecting avid success* [Unpublished doctoral dissertation]. North Carolina State University.
- Chambers, T. V., Huggins, K. S., Locke, L. A., & Fowler, R. M. (2014). Between a “ROC” and a school place: The role of racial opportunity cost in the educational experiences of academically successful students of color. *Educational Studies*, 50(5), 464-497.
- Chapman, T., Tatiana, J., Hartlep, N., Vang, M., & Lipsey, T. (2014). The double-edged sword of curriculum: How curriculum in majority white suburban high schools support or hinders the growth of students of color. *Curriculum and Teaching Dialogue*, 16(1&2), 87-101.
- Choy, S. P. (2001). Students whose parents did not go to college: Postsecondary access, persistence, and attainment.
- Christenson, S., & Sheridan, S. M. (Eds.). (2001). *Schools and families: Creating essential connections for learning*. Guilford Press.
- Cisneros, J., Gomez, L., Powers, J., Holloway-Libell, J., & Corley, K. (2014). The Advanced Placement opportunity gap in Arizona: Access, participation, and success. *AASA Journal of Scholarship & Practice*, 11(2), 20-33.
- Coffey, A., & Atkinson, P. (1996). *Making sense of qualitative data: Complementary research strategies*. Sage Publications, Inc.
- Cohen, J., McCabe, E. M., Michelli, N. M., & Pickeral, T. (2009). School climate: Research, policy, practice, and teacher education. *Teachers College Record*, 111(1), 180-213.

- Cole, D. G., Sugioka, H. L., & Yamagata-Lynch, L. C. (1999). Supportive classroom environments for creativity in higher education. *The journal of creative behavior*, 33(4), 277-293.
- Coleman, J. S. (1968). Equality of educational opportunity. *Integrated Education*, 6(5), 19-28.
- Coleman J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, 95–120.
- College Board. (2009). *About AP: Earn college credit and advanced placement*.
<http://www.collegeboard.com/student/testing/ap/about.html>
- College Board. (2013). *Advanced Placement report to the nation*.
http://www.collegeboard.com/prod_downloads/about/news_info/ap2007/2007_ap-report-nation.pdf
- College Board. (2013). *The 10th annual report to the nation*.
<http://www.apreport.collegeboard.org>
- Conley, D. T. (2005). *College knowledge: What it really takes for students to succeed and what we can do to get them ready*. Jossey-Bass.
- Conley, D. T. (2007). *Redefining college readiness*. Educational Policy Improvement Center.
- Conley, D. T. (2010). *College and career ready: Helping all students succeed beyond high school*. John Wiley & Sons.
- Conley, D. T., Aspengren, K., Gallagher, K., Stout, O., Veatch, D., & Stutz, D. (2006). College Board Advanced Placement® best practices course study. Eugene, OR: Center for Educational Policy Research.

- Considine, G., & Zappalà, G. (2002). The influence of social and economic disadvantage in the academic performance of school students in Australia. *Journal of Sociology*, 38(2), 129-148.
- Croninger, R., & Lee, V. (2001). Social capital and dropping out of high school: Benefits to at-risk students of teachers. *Teachers College Record*, 103(4), 548-581.
- Darling-Hammond, L. (2010). *The flat world and education: How America's commitment to equity will determine our future*. Teachers College.
- Davis, H. A. (2006). Exploring the contexts of relationship quality between middle school students and teachers. *The Elementary School Journal*, 106(3), 193-223.
- Denbo, S. J., & Beaulieu, L. M. (2002). *Improving schools for African American students: A reader for educational leaders*. Charles C Thomas Publisher.
- Dillon, E. W., & Smith, J. A. (2013). *The determinants of mismatch between students and colleges* (No. w19286). National Bureau of Economic Research.
- Divoll, K. A. (2010). Creating classroom relationships that allow students to feel known (dissertation). University of Massachusetts Amherst, Amherst, MA.
- Dockery, D. J., & McKelvey, S. (2013). Underrepresented college students' experiences with school counselors. *Journal of School Counseling*, 11(3), 1-30.
- Domina, T., Pharris-Ciurej, N., Penner, A. M., Penner, E. K., Brummet, Q., Porter, S. R., & Sanabria, T. (2018). Is free and reduced-price lunch a

- valid measure of educational disadvantage?. *Educational Researcher*, 47(9), 539-555.
- Dotterer, A. M. & Wehrspann, E. (2016). Parental involvement and academic outcomes among urban adolescents: Examining the role of school engagement. *Educational Psychology*, 36(4), 812-830.
- Dougherty, K. J., Jones, S. M., Lahr, H., NATO, R. S., Pheatt, L., & Reddy, V. (2016). Looking inside the black box of performance funding for higher education: Policy instruments, organizational obstacles, and intended and unintended impacts. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, 2(1), 147-173.
- Duncheon, J. C. (2021). Making sense of college readiness in a low-performing urban high school: Perspectives of high-achieving first generation youth. *Urban Education*, 56(8), 1360-1387.
- Engberg, M. E., & Wolniak, G. C. (2010). Examining the effects of high school contexts on postsecondary enrollment. *Research in Higher Education*, 51(2), 132-153.
- Englehart, J. M. (2009). Teacher–student interaction. In *International handbook of research on teachers and teaching* (pp. 711-722). Springer.
- Epstein, J. L. (2018). *School, family, and community partnerships: Preparing educators and improving schools*. Routledge.
- Farooq, M. S., Chaudhry, A. H., Shafiq, M., & Berhanu, G. (2011). Factors affecting students' quality of academic performance: a case of secondary school level. *Journal of Quality and Technology Management*, 7(2), 1-14.

- Farrell, T. L. (2009). *The early college high school and student self-perceptions of college readiness* (dissertation - 3411426). University of Houston-Clear Lake.
- Ferguson, R. F. (2003). Teachers' perceptions and expectations and the Black-White test score gap. *Urban education*, 38(4), 460-507.
- Finn Jr, C. E., & Scanlan, A. E. (2020). The Role of Advanced Placement in Bridging Excellence Gaps. *Thomas B. Fordham Institute*.
- Foster, T. A. (2013). *An exploration of academic resilience among rural students living in poverty* [Unpublished doctoral dissertation]. Piedmont College).
- Flores, G., & Gomez, M. (2011). Strategies for increasing Advanced Placement participation for underrepresented students: Barriers, practices, and positive outcomes. *NASSP Bulletin*, 95(1), 65–79.
<https://doi.org/10.1177/0192636511406529>
- Freeman, T. M., Anderman, L. H., & Jensen, J. M. (2007). Sense of belonging in college freshmen at the classroom and campus levels. *The Journal of Experimental Education*, 75(3), 203-220.
- Garland, M., & Rapaport, A. (2018). Advanced course offerings and completion in science, technology, engineering, and math in Texas public high schools (REL 2018–276). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest. Retrieved from <http://ies.ed.gov/ncee/edlabs>.
- Gilbert, M. C., Musu-Gillette, L. E., Woolley, M. E., Karabenick, S. A., Strutchens, M. E., & Martin, W. G. (2014). Student perceptions of the

- classroom environment: Relations to motivation and achievement in mathematics. *Learning Environments Research*, 17(2), 287-304.
- Gittell, R., & Vidal, A. (1998). *Community organizing: Building social capital as a development strategy*. Sage.
- Glass, L. E. (2022). Social capital and first-generation college students: examining the relationship between mentoring and college enrollment. *Education and Urban Society*.
- Goedhart, T., Halberstadt, V., Kapteyn, A., & Van Praag, B. (1977). The poverty line: concept and measurement. *Journal of Human Resources*, 503-520.
- Goldrick-Rab, S. (2010). Challenges and opportunities for improving community college student success. *Review of Educational Research*, 80(3), 437-469.
- Gonder, P. O., & Hymes, D. (1994). *Improving School Climate & Culture*. AASA Critical Issues Report No. 27. American Association of School Administrators, 1801 N. Moore Street, Arlington, VA 22209-9988 (Stock No. 21-00393).
- Goodenow, C. (1993). Classroom belonging among early adolescent students: Relationships to motivation and achievement. *The Journal of Early Adolescence*, 13(1), 21-43.
- Gore, P. A. (2006). Academic self-efficacy as a predictor of college outcomes: Two incremental validity studies. *Journal of Career Assessment*, 14, 92-115. doi: 10.1177/1069072705281367
- Gorski, P. C. (2017). *Reaching and teaching students in poverty: Strategies for erasing the opportunity gap*. Teachers College Press.

- Greene, J. P., & Forrester, G. (2003). Public high school graduation and college readiness rate in the United States. Manhattan Institute for Policy Research.
- Greenman, M. D., & Duffy, A. (2018). Project Accelerate: Bringing AP® Physics 1 to Underserved Students. *The Physics Teacher*, 56(9), 626-629.
- Griffen, J. (2019). Families and Counselors Taking Action to Transform Culture: An Action–Inquiry Case Study of an Urban High School. *Education and Urban Society*, 51(4), 501–525.
<https://doi.org/10.1177/0013124517728101>
- Grigal, M., Cooney, L., & Hart, D. (2019). Promoting college and career readiness with middle school youth with disabilities: Lessons learned from a curriculum development project. *Career Development and Transition for Exceptional Individuals*, 42(1), 64-71.
- Gullatt, Y., & Jan, W. (2003). How do pre-collegiate academic outreach programs impact college-going among underrepresented students. *Washington, DC: Pathways to College Network Clearinghouse*.
- Hagenaars, A. J. (2017). The definition and measurement of poverty. In *Economic Inequality and Poverty* (pp. 134-156). Routledge.
- Hamlin, D., & Flessa, J. (2018). Parental involvement initiatives: An analysis. *Educational Policy*, 32(5), 697-727.
- Hannafin, M., Land, S., & Oliver, K. (1999). Open learning environments: Foundations, methods, and models. *Instructional-Design Theories and Models: A New Paradigm of Instructional Theory*, 2, 15-140.

- Hemelt, S. (2020). Dual-Credit courses and the road to college: Experimental evidence from Tennessee. *Journal of Policy Analysis and Management*, 39(3), 686–719. <https://doi.org/10.1002/pam.22180>
- Hester, C., Plank, S., Cotla, C., Bailey, P., & Gerdeman, D. (2021). Identifying Indicators That Predict Postsecondary Readiness and Success in Arkansas. REL 2021-091. *Regional Educational Laboratory Southwest*.
- Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology*, 45(3), 740.
- Hill, N.E., & Wang, M. T. (2015). From middle school to college: Developing aspirations, promoting engagement, and indirect pathways from parenting to post high school enrollment. *Developmental Psychology*, 51(2), 224-235
- Hoge, R.D. (1984). The definition and measurement of teacher expectations: Problems and prospects. *Canadian Journal of Education / Revue Canadienne de l'éducation*, 9(2), 213–28, <https://doi.org/10.2307/1494604>.
- Holland, M. M. (2015). Trusting each other: Student-counselor relationships in diverse high schools. *Sociology of Education*, 88(3), 244-262.
- Hopfenberg, W. S. (1990). Accelerated Schools.
- Howard, T. C. (2001). Telling their side of the story: African-American students' perceptions of culturally relevant teaching. *The Urban Review*, 33(2), 131-149.

- Huerta, J. J., Watt, K. M., & Butcher, J. T. (2013). Examining advancement via individual determination (AVID) and its impact on middle school rigor and student preparedness. *American Secondary Education*, 41(2), 24-37.
- Hughes, K. L., & Scott-Clayton, J. (2011). Assessing developmental assessment in community colleges. *Community College Review*, 39(4), 327-351.
- Hughes, J. N., & Cao, Q. (2018). Trajectories of teacher-student warmth and conflict at the transition to middle school: Effects on academic engagement and achievement. *Journal of School Psychology*, 67, 148-162.
- Huitt, W. (2001). Motivation to learn: An overview. *Educational Psychology Interactive*, 12(3), 29-36.
- Irvin, M. J., Meece, J. L., Byun, S. Y., Farmer, T. W., & Hutchins, B. C. (2011). Relationship of school context to rural youth's educational achievement and aspirations. *Journal of Youth and Adolescence*, 40(9), 1225-1242.
- James, M. C., Butterfield, V., Jones, K. L., Mokuria, V. G. (2017). Opportunity for all: An analysis of equality and equity in advanced placement programming in a US high school. *International Journal of Innovation and Research in Educational Sciences*, 4(1), 15-21.
- Jarsky, K., McDonough, P. M., & Nunez, A. (2009). Establishing a college culture in secondary schools through p – 20 collaboration: A case study. *Journal of Hispanic Higher Education*, 8(4), 357-373.
- Juvonen, J. (2006). Sense of Belonging, Social Bonds, and School Functioning.
- Kearney, E., McIntosh, L., Perry, B., Dockett, S., & Clayton, K. (2014). Building positive relationships with Indigenous children, families and

- communities: Learning at the cultural interface. *Critical Studies in Education*, 55(3), 338-352.
- Kelly, S., & Price, H. (2011). The correlates of tracking policy: Opportunity hoarding, status competition, or a technical-functional explanation? *American Educational Research Journal*, 48(3), 560-585.
- Kerr, R. (2014). "Advanced classes? They're only for White kids": How one Kansas school is changing the face of honors and Advanced Placement courses. *Action in Teacher Education*, 480 - 489.
- Kettler, T., & Hurst, L. T. (2017). Advanced academic participation: A longitudinal analysis of ethnicity gaps in suburban schools. *Journal for the Education of the Gifted*, 40(1), 3–19.
<https://doi.org/10.1177/0162353216686217>
- Kettler, T., Shiu, A., & Johnsen, S. K. (2006). AP as an intervention for middle school Hispanic students. *Gifted Child Today*, 29(1), 39-46.
- Kim, E., & Hargrove, D. T. (2013). Deficient or resilient: A critical review of Black male academic success and persistence in higher education. *The Journal of Negro Education*, 82(3), 300-311.
- Kimura-Walsh, E., Yamamura, E. K., Griffin, K. A., & Allen, W. R. (2009). Achieving the college dream? Examining disparities in access to college information among high achieving and non-high achieving Latina students. *Journal of Hispanic Higher Education*, 8(3), 298-315.
- Kirst, M., & Venezia, A. (2001). Bridging the great divide between secondary school and postsecondary education. *Phi Delta Kappan*, 83, 92-97.
- Kitano, M. K. (2003). Gifted potential and poverty: A call for extraordinary action. *Journal for the Education of the Gifted*, 26(4), 292-303.

- Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health, 74*(7), 262-273.
- Klopfenstein, K., & Thomas, M. K. (2009). The link between advanced placement experience and early college success. *Southern Economic Journal, 75*(3), 873-891.
- Kolluri, S. (2018). Advanced Placement: The dual challenge of equal access and effectiveness. *Review of Educational Research, 88*(5), 671–711.
<https://doi.org/10.3102/0034654318787268>
- Kolluri, S., & Tierney, W. (2018). College for All in capitalist America: The post-secondary emphasis in the neoliberal age. *Tertiary Education and Management, 24*(3), 242-253.
- Kowski, L. (2013). Does high school performance predict college math placement? *Community College Journal of Research and Practice, 37*(7), 514–527.
- Knifsend, C. A., & Graham, S. (2012). Too much of a good thing? How breadth of extracurricular participation relates to school-related affect and academic outcomes during adolescence. *Journal of Youth Adolescence, 41*, 379-389.
- Knight-Diop, M. G. (2010). Closing the gap: Enacting care and facilitating black students' educational access in the creation of a high school college-going culture. *Journal of Education for Students Placed at Risk, 15*(1-2), 158-172.
- Kuh, G. D., Kinzie, J., Schuh, J. H., & Whitt, E. J. (2011). *Student success in college: Creating conditions that matter*. John Wiley & Sons.

- Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2011). *Piecing together the student success puzzle: Research, propositions, and recommendations*. ASHE higher education report (Vol. 116). John Wiley & Sons.
- Kurlaender, M., & Howell, J. S. (2012). Collegiate Remediation: A Review of the Causes and Consequences. Literature Brief. *College Board*.
- LaPrade, K. (2011). Removing instructional barriers: One track at a time. *Education*, 131(4), 740-752.
- Lawson-McKinnie, A.L. (2016). "Leveling the Playing Field: Ensuring African-American Students' Access to Advanced Placement Courses" ETD Archive. Paper 872.
- Leal, S. A. (2008). *Perceptions of Mexican-American college students on factors that impact post-secondary preparation and matriculation* (Publication No. 3323555). [Doctoral dissertation], ProQuest Dissertations & Theses Global.
- LeBeau, A. (2020). The Advanced Placement program in rural schools: Equalizing opportunity. *Roeper Review*, 42(3), 192–205.
<https://doi.org/10.1080/02783193.2020.1765923>
- Lee, K. M., & Slate, J. R. (2014). Difference in advanced achievement outcomes for Texas students as a function of economic disadvantage. *Journal of Education Research*, 8(3).
- Levine, R. (2005). Finance and growth: theory and evidence. *Handbook of economic growth*, 1, 865-934.

- Lewis, C. W., James, M., Hancock, S., & Hill-Jackson, V. (2008). Framing African American students' success and failure in urban settings: A typology for change. *Urban Education, 43*(2), 127-153.
- Lichtman, M. (2010). *Qualitative research in education. A user's guide*. Sage Publications.
- Liou, D. D., & Rotheram-Fuller, E. (2019). Where is the real reform? African American students and their school's expectations for academic performance. *Urban Education, 54*(3), 397-429.
- Lorsbach, A., & Jinks, J. (1999). Self-efficacy theory and learning environment research. *Learning environments research, 2*(2), 157-167.
- Lozano, A., Watt, K. M., & Huerta, J. (2009). A comparison study of 12th grade Hispanic students' college anticipations, aspirations, and college preparatory measures. *American Secondary Education, 92*-110.
- Ma, X. (2003). Sense of belonging to school: Can schools make a difference?. *The Journal of Educational Research, 96*(6), 340-349.
- Mac Iver, M. A., Mac Iver, D. J., & Clark, E. (2019). Improving college readiness for historically underserved students: The role of the district office. *Education and Urban Society, 51*(4), 555-581.
- Malin, J. R., Bragg, D. D., & Hackmann, D. G. (2017). College and career readiness and the Every Student Succeeds Act. *Educational Administration Quarterly, 53*(5), 809-838.
<https://doi.org/10.1177/0013161X17714845>
- Martinez, M. A. & Everman, D. (2017). Fostering a college-going culture for historically underserved students: One principal's role. *Journal of School Leadership, 27*(2), 242-268.

- Martinez, M., & Klopott, S. (2005). *The link between high school reform and college access and success for low-income and minority youth*. American Youth Policy Forum.
- Maslow, A. (1968). Some educational implications of the humanistic psychologies. *Harvard Educational Review*, 38(4), 685-696.
- Mathers, K (2019). High-quality career readiness for all students. *National Association of State Boards of Education*, 19, 4-9.
- McCauley, D. (2007). *The impact of advanced placement and dual enrollment programs on college graduation*. [Masters of Public Administration] Texas State University.
- McClafferty-Jarsky, M. (2009). Establishing a college culture in secondary schools through P-20 collaboration: A case study. *Journal of Hispanic Higher Education*, 8(4), 357–373.
<https://doi.org/10.1177/1538192709347846>
- McDonough, P. M., & Calderone, S. (2006). The meaning of money: Perceptual differences between college counselors and low-income families about college costs and financial aid. *American behavioral scientist*, 49(12), 1703-1718.
- McKee, M. T. & Caldarella. (2016). Middle school predictors of high school performance: A case study of dropout risk indicators. *Education* 136(4), 515-529.
- McKown, C., & Weinstein, R. S. (2008). Teacher expectations, classroom context, and the achievement gap. *Journal of School Psychology*, 46(3), 235-261.

- McMahon, M., Peters, M. L., & Schumacher, G. (2014). The principal evaluation process and its relationship to student achievement. *Journal of Scholarship and Practice*, 11(3), 34-48.
- McNeely, C., & Falci, C. (2004). School connectedness and the transition into and out of health-risk behavior among adolescents: A comparison of social belonging and teacher support. *Journal of School Health*, 74, 284-292.
- McWhirter, E. H., Torres, D. M., Salgado, S., & Valdez, M. (2007). Perceived barriers and postsecondary plans in Mexican American and White adolescents. *Journal of Career Assessment*, 15(1), 119-138.
- Metzler, C. W., Biglan, A., Rusby, J. C., & Sprague, J. R. (2001). Evaluation of a comprehensive behavior management program to improve school-wide positive behavior support. *Education and Treatment of Children*, 448-479.
- Micheltore, K., & Dynarski, S. (2017). The gap within the gap: Using longitudinal data to understand income differences in educational outcomes. *AERA Open*, 3(1), 2332858417692958.
- Mirtcheva, D. M., & Powell, L. M. (2009). Participation in the National School Lunch Program: importance of school-level and neighborhood contextual factors. *Journal of School Health*, 79(10), 485-494.
- Moore III, J. L., Ford, D. Y., & Milner, H. R. (2005). Recruitment is not enough: Retaining African American students in gifted education. *Gifted Child Quarterly*, 49(1), 51-67.
- Morgan, Y., Sinatra, R., & Eschenauer, R. (2015). A comprehensive partnership approach increasing high school graduation rates and college enrollment

- of urban economically disadvantaged youth. *Education and Urban Society*, 47(5), 596-620.
- National Education Agency (2015). *Students affected by achievement gaps*. Retrieved from <http://www.nea.org/home/20380.html>
- National Research Council. (2002). *Scientific research in education*. National Academies Press.
- Nichols, A. (2016). Why not honors? Understanding students' decisions not to enroll and persist in honors programs. *Honors in Practice*, 12, 33.
- Nichols-Barrer, P. (2016). Testing College Readiness. *Education Next*, 16(3).
- Nichols, L., & Islas, A. (2016). Pushing and pulling emerging adults through college: College generational status and the influence of parents and others in the first year. *Journal of Adolescent Research*, 31(1), 59-95.
- Novak, J. (2017). *The relationship between advanced placement course completion and college readiness*. Northern Illinois University.
- Osborne, J. W., & Jones, B. D. (2011). Identification with academics and motivation to achieve in school: How the structure of the self-influences academic outcomes. *Educational Psychology Review*, 23(1), 131-158.
- Paolini, A. (2015). Enhancing teaching effectiveness and student learning outcomes. *Journal of Effective Teaching*, 15(1), 20-33.
- Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First-generation college students: Additional evidence on college experiences and outcomes. *The Journal of Higher Education*, 75(3), 249-284.
- Pedersen, S., & Liu, M. (2003). Teachers' beliefs about issues in the implementation of a student-centered learning environment. *Educational Technology Research and Development*, 51(2), 57-76.

- Perna, L. W., & Kurban, E. R. (2013). Improving college access and choice. *The state of college access and completion: Improving college success for students from underrepresented groups*, 10-33.
- Pierson, A., Hodara, M., & Luke, J. (2017). *Earning college credits in high school: Options, participation, and outcomes for Oregon students*. REL 2017-216. Regional Educational Laboratory Northwest.
- Price, D. V. (2005). *Learning communities and student success in postsecondary education. A background paper*. MDRC.
- Rabiee, F. (2004). Focus-group interview and data analysis. *Proceedings of the Nutrition Society*, 63(4), 655-660.
- Ralston, K. L., Newman, C., Clauson, A. L., Guthrie, J. F., & Buzby, J. C. (2008). *The national school lunch program: Background, trends, and issues* (No. 1477-2016-121178).
- Ream, R. K., & Palardy, G. J. (2008). Reexamining social class differences in the availability and the educational utility of parental social capital. *American Educational Research Journal*, 45(2), 238-273.
- Reid, M. J., & Moore III, J. L. (2008). College readiness and academic preparation for postsecondary education: Oral histories of first-generation urban college students. *Urban Education*, 43(2), 240-261.
- Remedial Coursetaking at U.S. public 2- and 4-Year institutions: Scope, experiences, and outcomes. Statistical analysis report. NCES 2016-405
- Reynolds, A. D., Crea, T. M., Medina, J., Degnan, E., & McRoy, R. (2015). A mixed-methods case study of parent involvement in an urban high school serving minority students. *Urban Education*, 50(6), 750-775.

- Richardson, C. C., Gonzalez, A., Leal, L., Castillo, M. Z., & Carman, C. A. (2016). PSAT component scores as a predictor of success on AP exam performance for diverse students. *Education and Urban Society*, 48(4), 384-402.
- Roderick, M., Nagaoka, J., & Coca, V. (2009). College readiness for all: The challenge for urban high schools. *The future of children*, 185-210.
- Roseth, C. J., Johnson, D. W., & Johnson, R. T. (2008). Promoting early adolescents' achievement and peer relationships: the effects of cooperative, competitive, and individualistic goal structures. *Psychological Bulletin*, 134(2), 223.
- Ruiz Alvarado, A., Stewart-Ambo, T., & Hurtado, S. (2020). High school and college choice factors associated with high-achieving low-income students' college degree completion. *Education Sciences*, 10(6), 153.
- Ruiz-de-Velasco, J., & Fix, M. (2000). *Overlooked & underserved: Immigrant students in US secondary schools*.
- Schaeffer, K., Akos, P., & Barrow, J. (2010). A phenomenological study of high school counselor advocacy as it relates to the college access of underrepresented students. *Journal of School Counseling*, 8(2), n2.
- Schaefer, M. B., & Rivera, L. M. (2020). Educational experiences that matter to seniors graduating from an urban early college high school. *Urban Education*, 55(3), 448-475.
- Shats, M. G., & Solomon, W. M. (2002). Experimental evidence of self-regulation of fluctuations by time-varying flows. *Physical Review Letters*, 88(4), 045001.

- Skinner, J., Zakus, D. H., & Cowell, J. (2008). Development through sport: Building social capital in disadvantaged communities. *Sport Management Review, 11*(3), 253-275.
- Smith, J. B. (1996). Does an extra year make any difference? The impact of early access to algebra on long-term gains in mathematics attainment. *Educational Evaluation and Policy Analysis, 18*(2), 141-153.
- Solomon, D., Battistich, V., & Hom, A. (1996). Teacher beliefs and practices in schools serving communities that differ in socioeconomic level. *The Journal of Experimental Education, 64*(4), 327-347.
- Stanton-Salazar, R. (1997). A social capital framework for understanding the socialization of racial minority children and youths. *Harvard Educational Review, 67*(1), 1-41.
- Stanton-Salazar, R., & Dornbusch, S. (1995). Social capital and the reproduction of inequality: Information networks among Mexican-origin high school students. *Sociology of Education, 68*, 116-135.
- Statistics, U.B.O.L. (2015). Labor force characteristics by race and ethnicity, 2015.
- Stein, L. R. (2018). *Family-school partnerships and the missing voice of parents*. City University of New York.
- Stillisano, J. R., Brown, D. B., Alfrod, B. L., & Waxman, H. C. (2013). The effects of GO centers on creating a college culture in urban high schools in Texas. *High School Journal, 96*(4), 283-301.
- Straubhaar, R., & Gottfried, M. (2016). Who joins Teach for America and why? Insights into the “typical” recruit in an urban school district. *Education and Urban Society, 48*(7), 627-649.

- Stronge, J. H. (2018). *Qualities of effective teachers*. ASCD.
- Sui-Chu, E. H., & Willms, J. D. (1996). Effects of parental involvement on eighth-grade achievement. *Sociology of Education*, 126-141.
- Suldo, S. M., Shaunessy-Dedrick, E., Ferron, J., & Dedrick, R. (2018). Predictors of success among high school students in Advanced Placement and International Baccalaureate programs. *Gifted Child Quarterly*, 62(4), 350-373.
- Tan, E. (2014). Human capital theory: A holistic criticism. *Review of Educational Research*, 84(3), 411-445.
- Texas Education Agency. (2017). Texas high school population by ethnicity. Retrieved February 11, 2019, from http://www.tea.state.tx.us/adhocrpt/standard_reports.html.
- Thomas, J., Utley, J., Hong, S. Y., Korkmaz, H., & Nugent, G. (2020). A Review of the research. *Handbook of Research on STEM Education*.
- Tomlinson, C. A., & Jarvis, J. M. (2014). Case studies of success: Supporting academic success for students with high potential from ethnic minority and economically disadvantaged backgrounds. *Journal for the Education of the Gifted*, 37(3), 191-219.
- Tornatzky, L. G., Cutler, R., & Lee, J. (2002). College knowledge: What Latino parents need to know and why they don't know it.
- Toste, J. R., Heath, N. L., McDonald Connor, C., & Peng, P. (2015). Reconceptualizing teacher-student relationships: Applicability of the working alliance within classroom contexts. *The Elementary School Journal*, 116(1), 30-48.

- Tschannen-Moran, M. (2001). Collaboration and the need for trust. *Journal of Educational Administration*.
- U.S. Department of Agriculture (2000). *Nutrition and your health: dietary guidelines for Americans* (No. 232). Department of Agriculture.
- U.S. Department of Education. (2008a). Middle college high school: What works. Clearinghouse Intervention Report. Retrieved from http://ies.ed.gov/ncee/wwc/pdf/wwc_mchs_031709.pdf
- U.S. Department of Education. (2012). Higher education: Gaps in access and persistence study (NCES Publication No. 2012046). Retrieved from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012046>
- U. S. Department of Education. (2013). U.S. department of education - Definitions. Retrieved from <http://www.ed.gov/early-learning/elc-draftsummary/definitions>
- U.S. Department of Labor. (2014). America's dynamic workforce. Retrieved from http://www.dol.gov/asp/archive/reports/Workforce2008/secretary_message.html
- VanTassel-Baska, J. (2005). Gifted programs and services: What are the nonnegotiable?. *Theory into Practice*, 44(2), 90-97.
- Walpole, M. (2003). Socioeconomic status and college: How SES affects college experiences and outcomes. *The Review of Higher Education*, 27(1), 45-73.
- Wang, M., Hill, N. E. and Hofkens, T. (2014). Parental involvement and African American and European American adolescents' academic, behavioral,

- and emotional development in secondary school. *Child Development*, 85, 2151-2168. doi:10.1111/cdev.12284
- Wang, M. T., & Holcombe, R. (2010). Adolescents' perceptions of school environment, engagement, and academic achievement in middle school. *American Educational Research Journal*, 47(3), 633-662.
- Wang, M. T., & Degol, J. L. (2016). School climate: A review of the construct, measurement, and impact on student outcomes. *Educational Psychology Review*, 28(2), 315-352.
- Wang, S., Meissel, K. & Rubie-Davies, C.M. Teacher expectation effects in Chinese junior high schools: Exploring links between teacher expectations and student achievement using a hierarchical linear modeling approach. *Society of Psychological Education*, 24, 1305–1333 (2021). <https://doi.org/10.1007/s11218-021-09654-7>
- Wang, S., Rubie-Davies, C. M., & Meissel, K. (2020). The stability and trajectories of teacher expectations: Student achievement level as a moderator. *Learning and Individual Differences*, 78, 101819.
- Warren-Grice, A. (2017). Advocacy for Equity: Extending Culturally Relevant Pedagogy in Predominantly White Suburban Schools. *Teachers College Record*, 1-25.
- Warren, S.R. (2002). Stories from the classrooms: How expectations and efficacy of diverse teachers affect the academic performance of children in poor urban schools. *Educational Horizons*, 80(3), 109–16.
- Watt, K. M., Yanez, D., & Cossio, G. (2002). AVID: A comprehensive school reform model for Texas. *National Forum of Educational Administration and Supervision Journal*, 19(3), 43-59.

- Welsh, R. O., & Swain, W. A. (2020). (Re) defining urban education: A conceptual review and empirical exploration of the definition of urban education. *Educational Researcher*, 49(2), 90-100.
- Welton, A. D., & Martinez, M. A. (2014). Coloring the college pathway: A more culturally responsive approach to college readiness and access for students of color in secondary schools. *The Urban Review*, 46(2), 197-223.
- Whitlock, J. L. (2006). Youth perceptions of life at school: Contextual correlates of school connectedness in adolescence. *Applied Developmental Science*, 10(1), 13-29.
- Wikeley, F., Bullock, K., Muschamp, Y., & Ridge, T. (2009). Educational relationships and their impact on poverty. *International Journal of Inclusive Education*, 13(4), 377-393.
- Wilson, D. (2004). The interface of school climate and school connectedness and relationships with aggression and victimization. *Journal of school health*, 74, 293-303.
- Wimberly, G. L., & Noeth, R. J. (2005). College readiness begins in middle school. Iowa City, IA: ACT. Inc.
- Winkle-Wagner, R. (2010). *Cultural Capital: The Promises and Pitfalls in Education Research: AEHE, Volume 36, Number 1*. John Wiley & Sons.
- Woolcock, M. (1998). Social capital and economic development: Toward a theoretical synthesis and policy framework. *Theory and Society*, 27(2), 151-208.

- Wubbels, T., & Brekelmans, M. (2005). Two decades of research on teacher–student relationships in class. *International Journal of Educational Research*, 43(1-2), 6-24.
- Wubbels, T., Brekelmans, M., & Mainhard, T. (2016). Teacher–student relationships and student achievement. In *Handbook of social influences in school contexts* (pp. 137-152). Routledge.
- Wyatt, J. N., & Mattern, K. D. (2011). Low-SES Students and College Outcomes: The Role of AP® Fee Reductions. Research Report No. 2011-9. *College Board*.
- Zoromski, A., Evans, S. W., Owens, J. S., Holdaway, A., & Royo Romero, A. S. (2021). Middle school teachers’ perceptions and use of classroom management strategies and associations with student behavior. *Journal of Emotional and Behavioral Disorders*, 29(4), 199–212.
<https://doi.org/10.1177/1063426620957624>

APPENDIX A:

ASSENT OF MINOR TO PARTICIPATE IN EDUCATION RESEARCH (7-12)

Student Researcher:

Kelly S. Hudson
College of Education
University of Houston – Clear Lake
2700 Bay Area Blvd, Houston, TX 77058
77058
kastreams@gmail.com

Faculty Sponsor:

Antonio Corrales, Ed. D.
College of Education
University of Houston – Clear Lake
2700 Bay Area Blvd, Houston, TX
corrales@uhcl.edu

You are being asked to help in a research project entitled *College Readiness in Junior High School* and the project is part of my study, *The Influence of Social Capital on Economically Disadvantaged Students' Enrollment in Advanced Placement Courses*, at the University of Houston-Clear Lake. The purpose of this study is to examine the social capital of economically-disadvantaged students and perceptions of their junior high school experiences related to college readiness. You will be asked to complete a *Junior High School Follow Up Survey*. Your help will be needed for one school day – not to exceed 60 minutes.

You do not have to help if you do not want, and you may stop at any time even after you have started, and it will be okay. You can just let the researcher know if you want to stop or if you have questions. If you do want to do the project, it will help us a lot.

Please keep the upper part of this page for your information. Thank you for your assistance.

_____ Yes, I agree to (allow my child to) participate in the study on *The Impact of Social Capital on Economically Disadvantaged Students*.

_____ No, I do not wish to (allow my child to) participate in the study on *The Impact of Social Capital on Economically Disadvantaged Students*.

Printed Name of Assenting Child

Signature of Assenting Child

Date

Printed Name of Parent or Guardian

Signature of Parent or Guardian

Date

Printed name of Witness of Child's Assent

Signature of Witness of Child's Assent

Date

THE UNIVERSITY OF HOUSTON-CLEAR LAKE (UHCL) COMMITTEE FOR PROTECTION OF HUMAN SUBJECTS HAS REVIEWED AND APPROVED THIS PROJECT. ANY QUESTIONS REGARDING YOUR RIGHTS AS A RESEARCH SUBJECT MAY BE ADDRESSED TO THE UHCL COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS (281-283-3015). ALL RESEARCH PROJECTS THAT ARE CARRIED OUT BY INVESTIGATORS AT UHCL ARE GOVERNED BY REQUIREMENTS OF THE UNIVERSITY AND THE FEDERAL GOVERNMENT.

APPENDIX B:

A MODIFIED HIGH SCHOOL FOLLOW-UP SURVEY

Junior High School Follow-Up Survey

The aim of this survey is to learn more about how your junior high school experiences have prepared you for college. Your responses will help us understand the type of support needed to help more junior high students prepare for college.

Section I

Directions: The following questions will provide basic information about you and help us understand your answers. Please circle your answers or fill in the blank as appropriate. All information will remain confidential.

I - Background Information	
Name	
Gender	☐ Female ☐ Male
Race	☐ African American ☐ Hispanic ☐ White ☐ Asian ☐ American Indian ☐ Pacific Islander ☐ Two or More Races ☐ Other
Junior High School	☐ Alvin JH ☐ Fairview JH ☐ Harby JH ☐ Marvel JH ☐ Rodeo Palms JH ☐ Nolan Ryan JH ☐ McNair JH
Alvin Student ID#	
Grade Level	☐ Grade 7 ☐ Grade 8
In which mathematics course are you currently enrolled?	☐ 7 th Grade On Level Mathematics ☐ 7 th Grade Advanced Mathematics ☐ 7 th Grade MAP Mathematics ☐ 8 th Grade On Level Mathematics ☐ 8 th Grade Advanced Mathematics ☐ 8 th Grade MAP Mathematics
Do you plan on attending college?	☐ Yes ☐ No
Besides you, how many people live in your home?	

What is the highest level of education your mother completed?	☐ Less than 6 th grade ☐ More than 6 th grade but did not finish high school ☐ High school graduate ☐ Some college – no degree ☐ Associate Degree ☐ Bachelor's degree ☐ Master's Degree ☐ Professional Degree (doctor, lawyer, etc.)
What is the highest level of education your father completed?	☐ Less than 6 th grade ☐ More than 6 th grade but did not finish high school ☐ High school graduate ☐ Some college – no degree ☐ Associate Degree ☐ Bachelor's degree ☐ Master's Degree ☐ Professional Degree (doctor, lawyer, etc.)
How many brothers or sisters do you have?	
How many brothers or sisters are older than you?	
How many of your older brothers or sisters attended college?	
How many of your older brothers or sisters graduated from college?	

Sections II – VIII

Directions: Please take a few minutes to answer the following questions about your junior high school experiences.

Select the number that best reflects your response using the following rating scale:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5



II - Attitude Toward College		
1	I believe college is important to get a good job.	1 2 3 4 5 
2	I have expectations to go to college.	1 2 3 4 5 
3	I think everyone has the opportunity to go to college if they want to.	1 2 3 4 5 
4	Most of my friends in junior high school plan to go to college.	1 2 3 4 5 
5	Most of my friends in junior high school think it is important to go to college.	1 2 3 4 5 
6	I think continuing my education after high school is important.	1 2 3 4 5 
III - Academic Achievement		
7	In junior high school, I worked hard to learn as much as I could in class.	1 2 3 4 5 
8	In junior high school, I did my best to complete assignments and homework.	1 2 3 4 5 
9	In junior high school, I was aware of tutoring and other ways to get help to improve my grades.	1 2 3 4 5 
10	In junior high school, it was important to me to get good grades.	1 2 3 4 5 
11	In junior high school, I had the skills and ability to complete my assignments.	1 2 3 4 5 
12	In junior high school, I was aware of various graduation plans.	1 2 3 4 5 
13	My junior high school courses prepared me for college level work.	1 2 3 4 5 

IV – Teacher Expectations and Interaction		
14	In junior high school, my teachers cared about me.	1 2 3 4 5 ←————→
15	In junior high school, my teachers inspired me and motivated me to do my best.	1 2 3 4 5 ←————→
16	My junior high school teachers had high expectations of me.	1 2 3 4 5 ←————→
17	My junior high school teachers did as much as they could to help me learn.	1 2 3 4 5 ←————→
18	My junior high school teachers did as much as they could to prepare me for college level work.	1 2 3 4 5 ←————→
V – College Readiness		
19	In junior high school, I was aware of the importance of taking courses such as AP courses and dual credit courses.	1 2 3 4 5 ←————→
20	In junior high school, I was encouraged to take high level classes that could prepare me for college.	1 2 3 4 5 ←————→
21	In junior high school, I was aware of the courses I needed to prepare for college.	1 2 3 4 5 ←————→
22	Teachers helped me plan or select the right high school courses needed for college.	1 2 3 4 5 ←————→
23	In junior high school, Pre AP and AP courses were available to everyone.	1 2 3 4 5 ←————→
VI – School Wide Support		
24	My junior high school created a campus culture that going to college was important.	1 2 3 4 5 ←————→
25	I felt welcomed and supported at my junior high school.	1 2 3 4 5 ←————→
26	All students at the school had the same opportunities to prepare for college.	1 2 3 4 5 ←————→
27	My junior high school helped me improve my ability to study through student workshops or advisory classes.	1 2 3 4 5 ←————→
28	My junior high school provided me with a student planner to help me learn organization skills and time management.	1 2 3 4 5 ←————→
29	In junior high school, I often felt ignored. (read carefully)	1 2 3 4 5 ←————→
30	In junior high school, I participated in programs such as Upward Bound or AVID.	1 2 3 4 5 ←————→
31	I visited various college campuses while in junior high school.	1 2 3 4 5 ←————→
32	I participated in summer college camps during junior high school.	1 2 3 4 5 ←————→

VII – Guidance and Counseling		
33	In junior high school, I was aware of the importance of the SAT and ACT exams.	1 2 3 4 5 ←————→
34	There were enough counselors to meet with all students.	1 2 3 4 5 ←————→
35	Counselors mostly helped the students that were in pre AP and AP classes.	1 2 3 4 5 ←————→
36	My junior high school counselors helped me to plan which high school courses to take to prepare for college.	1 2 3 4 5 ←————→
37	Counselors helped me with information I needed to apply to college, such as college applications, SAT exams, financial aid, and scholarships.	1 2 3 4 5 ←————→
38	Counselors helped me plan my goals for the future.	1 2 3 4 5 ←————→
39	I would have been better prepared for college if I had more information in high school.	1 2 3 4 5 ←————→
40	Counselors encouraged me to go to college.	1 2 3 4 5 ←————→
41	I could approach my junior high school counselors anytime I needed.	1 2 3 4 5 ←————→
VII – Parent Engagement		
42	When I was in junior high school, my parents encouraged me to do well in school.	1 2 3 4 5 ←————→
43	My parents were aware of ways to help me get better grades in school.	1 2 3 4 5 ←————→
44	As a junior high school students, my parents encouraged me to go to college.	1 2 3 4 5 ←————→
45	As a junior high school student, my parents were aware of ways to help me get to college.	1 2 3 4 5 ←————→
46	Teachers and counselors at my junior high school communicated often with my parents.	1 2 3 4 5 ←————→

APPENDIX C:
FOCUS GROUP QUESTIONS

1. What are your plans after you graduate from high school?
2. How have you prepared for those plans?
3. Do you have questions about being more prepared for your post high school plans? If so, what are they?
4. What is the course selection process like at your junior high school? Does everyone have the opportunity to take Advanced Placement courses?
5. How do you receive information on course selection and which courses to take?
 - a. How do your teachers help you choose your courses in junior high school?
 - b. How do your counselors help you choose your courses in junior high school?
 - c. How do your peers help you choose your courses in junior high school?
 - d. How do your parents help you choose your courses in junior high school?
6. Why have you taken MAP/APA (Advanced Placement) courses? Or why have you not taken more than one MAP/APA (Advanced Placement) course?
7. How would you describe your Advanced Placement classroom?
 - a. What classroom resources are provided?
 - b. How does class begin and end?
 - c. How would you describe the homework assigned?
8. Have you had conversations about your high school plans?
 - a. Have you had a conversation about your high plans with your teachers?

- b. Have you had a conversation about your high plans with your counselors?
 - c. Have you had a conversation about your high plans with your peers?
 - d. Have you had a conversation about your high plans with your parents?
9. How have you been involved in extracurricular activities while in junior high school? How has that impacted your junior high school experience?

APPENDIX D:

SURVEY PERMISSION EMAIL

Re: Doctoral Research Project Information Statement & Letter of Invitation to Alvin ISD Junior High School Principals

Good morning Junior High School Administrator,

My name is Kelly S. Hudson, and I am a Junior High Instructional Coach in our district as well as a doctoral candidate at the University of Houston Clear Lake. I am conducting research on the *Influences of Social Capital on 7th and 8th Grade Students in Advanced Mathematics Courses*. I collected data for the pilot at Nolan Ryan JH in the Fall of 2019. However, I am in need of a complete data sample which includes the 7th and 8th grade students on your campus. Therefore, Alvin Independent School District has given me permission to contact you for **permission to conduct my research on your junior high school campus**.

Data Collection Procedures & Research Plan

- The researcher will meet with junior high principals to explain and discuss data collection process. (February 2020)
- Principal designee and the Researcher will distribute Consent Forms for participants and parents. With campus approval, incentives will be provided to students for returning the form on time. (February - March 2020)
- Researcher will return at the agreed upon time to administer the survey via Google Forms. The researcher will use the designated rooms, laptops and/or student devices to complete the online survey. (February - May 2020)
- The online survey process will not exceed 45 minutes.
- Additional Notes - Permission will be sought from the learners and their parents prior to their participation in the research. Only those who consent and whose parents' consent will participate. All information collected will be treated in the strictest confidence and neither the school nor individual student learner will be identifiable in any reports written. Participants may withdraw from the study at any time without penalty. The role of school is voluntary and the School Principal may decide to withdraw the school's participation at any time without penalty.

Attached for your information are the Parent Information and Consent Form and also the Participant Information Statement and Consent Form. (These copies will be provided by the Researcher.)

Invitation to Participate

If your campus is able to participate in this research, **please simply reply “Yes, my campus will participate.” to this email.** A follow up email will be sent to arrange a meeting with you to further confirm logistics.

More about the Research**The Educational Promise of Advanced Placement Courses for All Students****Purpose of the Research**

The purpose of this mixed methods study is to examine the social capital of economically-disadvantaged 7th and 8th grade students enrolled in advanced mathematics courses. Social capital refers to the social connection or networks between people in a social setting - attitude towards going to college; teacher expectations and interactions; college readiness; school wide support; parent engagement.

Significance of the Research Project

The research is significant in the following ways:

- An indicator for college preparedness is the participation in Advanced Placement mathematics courses in junior high school.
- Research supports the promotion of college preparedness for all students – especially economically-disadvantaged students – through the access of rigorous curriculum (Jarsky, McDonough & Nunez).
- Therefore, large urban school districts must intentionally work to help students build a network of support the increase the enrollment of students in Advanced Placement courses – navigating junior high school course selection (Holland, 2015).

Thank you for your consideration and support!

Kindest Regards,

Kelly S. Hudson

University of Houston Clear Lake - Doctoral Candid