THE EFFICACY OF DEVELOPMENTAL EDUCATION REFORMS FOR INTEGRATED READING AND WRITING (INRW) FOR READING-BASED AND WRITING-BASED CO-REQUISITES AT HOUSTON COMMUNITY COLLEGE FOR AFRICAN-AMERICAN MALES AND HISPANIC MALES

by

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ABSTRACT

Developmental education focuses on addressing the needs of underprepared, diverse student populations seeking a postsecondary education. However, developmental education has received much criticism for its perceived incongruence between expenditures allocated for developmental education programs and sustainable student success outcomes.

With a large percentage of entering community college students being considered underprepared and students of color, this translates to an ever-expanding number of this population being relegated to remedial or developmental education programs. Of the aforesaid, African-American students and Hispanic students oftentimes comprise much of the remedial or developmental education program's population. Moreover, traditional remedial or developmental courses are comprised of lengthy course sequences designed to scaffold learning in deficit areas as identified through institutional placement assessment tools. The completion of these course sequences is required prior to students' eligibility for enrollment into college-level courses, which results in less than encouraging rates of developmental education students' completion, especially for African-American males and Hispanic males.

To address this circumstance, many states have turned to developmental education reform efforts. These efforts include approaches such as accelerated remediation models. Accelerated remediation models are designed to fast track developmental program sequences through mechanisms such as co-requisite remediation models.

Co-requisite models are intended to improve student success outcomes and completion rates for developmental education students. The purpose of this qualitative study is to examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading-based and writing-based co-requisites at Houston Community College. Data were re-examined from a previous study of the college's co-requisite implementation, which includes interviews, observations, and a review of documents.

Results of the study indicated that reading-based and writing-based co-requisites potentially offer effective outcomes. The results were analyzed to provide recommendations to improve the college's co-requisite efforts.

KEY WORDS: Developmental education, co-requisite

DEDICATION

I dedicate this work to all students who aspire to learn and encourage them to not limit themselves by the boundaries that others may assign to them.

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INTRODUCTION

Developmental education, sometimes referred to as remedial education, has developed several definitions over the years. For example, it has been defined as strategies to help underprepared students acquire the skills and knowledge needed to move into college-level coursework (U.S. Department of Education, 2017). Another definition for developmental education is "courses or services provided for the purpose of helping underprepared college students attain their academic goals" (Boylan, 2002, p. 3). Regardless of the wording used to define developmental education, its impetus remains engrained in its function as a response to the needs of the diverse populations of underprepared students who desire a postsecondary education.

However, developmental education has received much criticism for its perceived lack of effectiveness and innovation in regard to achieving sustainable student success. Approximately one third of entering community college students are considered underprepared and are referred to remedial or developmental education programs (Jenkins & Boswell, 2002; Perin & Charron, 2006). Traditionally, developmental courses are comprised of lengthy course sequences that are designed to scaffold learning in the area(s) of noted deficits as evidenced via institutional placement assessment tools.

Placement into Developmental Courses

Placement into developmental courses is usually a result of poor performance on some type of entry assessment measurement. The measurements are often based upon a single assessment tool that may vary from institution to institution to some degree. Moreover, the variances are determinant on the measurement indicators used within the specific assessment tool employed at an institution (Boatman & Long, 2018). Nevertheless, basing placement on one assessment tool has created a scenario where a single point of failure in the early stages of a student's postsecondary educational assignment of ability can affect the student's entire higher education trajectory:

> Many students who enter developmental education do not successfully progress through college. Instead, they get discouraged, delayed, or diverted from their goal of completing a college credential. . . . [S]ome students are misassigned during the placement process. . . . [W]hen many students are misassigned, completion rates for introductory college-level courses are lower than they would be otherwise, which has consequences for students' progression toward a degree. (Belfield, 2014, p. 1)

Placement measures are the primary causal factor that predicates such a wide range of fluctuation in placement-level assignment. In fact, Belfield (2014) further asserts,

> We estimate that [the conventional decision rule for placement] generates a substantial number of errors. Based on prediction models for two community college systems, we calculate that between one quarter and one third of tested students are severely misplaced based on their scores on these placement tests. (p. 2)

It is important to note that research suggests that placement misassignment involves more underplacement than overplacement into college-level courses. In other words, more students could and should be allowed entry into college-level courses.

In addition, misplacement of students into developmental course sequences has two primary detrimental effects. First, it wastes funds on unnecessary courses (Belfield, 2014). This

takes monies that could be allocated elsewhere within in an institution and needlessly invests them into lengthy course sequences that promise little on return. Second, it reduces or slows college pass rates (Belfield, 2014). In this case, lower pass rates come about if students have bad experiences in their developmental courses. The experience may not be connected directly to the specific developmental course's in-class interaction per se, but in the associated perceived wait time before being allowed to enter college-level courses. To this point, Scott-Clayton and Rodriguez's (2012) study of developmental education as "development, discouragement, or diversion" offers some discussion on possible regressive consequences.

Scott-Clayton and Rodriguez (2012) state in "The Discouragement Model" that "assignment to remediation negatively impacts college persistence, [which] suggests the presence of discouragement or stigma effects" (p. 6). Scott-Clayton and Rodriguez further stress that placement into developmental education courses may send a message to a student that he or she is not "college material" as opposed to developmental courses' intended purpose of prompting the student to dedicate himself or herself to more intentional study. However, even the potential for discouragement may magnify a student's self-doubt, which, in turn, may result in the individual's resignation to failure without trying with full effort. On the other hand, Scott-Clayton and Rodriguez make a point to mention a counter argument of proponents of developmental education in that higher-ability students may be more sensitive to discouragement in comparison to lower-ability developmental education. In other words, lower-ability developmental students are less likely to be discouraged because they receive more developmental education strategies for success. The latter claim points directly back to

the many different definitions of developmental education, which translates literally into high expenditures based on placement.

FUNDING

Investment in developmental education has been substantial over the years. Research suggests that the return on investment for the monies allocated and spent on developmental education efforts does not equate to the expected success outcomes. “Remedial education . . . may be the most widespread and costly intervention aimed at addressing a perceived lack of preparation among incoming college students,” according to Scott-Clayton and Rodriguez (2012, p. 1).

The federal government and state governments have attempted to arrest the problem of underprepared college students through the collective allocation of billions of dollars annually to support developmental education programs: “At community colleges, remedial credits represent approximately 10 percent of all credits earned, suggesting that the cost of remediation may be $4 billion dollars per year in this sector alone” (Scott-Clayton & Rodriguez, 2012, p. 1). Other researchers believe that the cost for developmental education is up to as much as $7 billion at community colleges with less than a 40% successful completion rate (Daugherty et al., 2018). Again, based upon differentiated placement, or misplacement, students may be relegated to multi-leveled developmental education sequences, which places a drain on the financial resources of all parties involved, including the federal government, state governments, and students.

It is assumed that governmental structures are tasked with funding developmental education efforts within institutions; however, the financial pitfalls that some developmental

education students find themselves in as a result of their contributions to partly funding developmental education initiatives through tuition via loans is seldom discussed. Although developmental education courses are more commonly offered at community colleges for relatively low costs, they are not free. Institutions must and do charge nominal fees for developmental courses due to the resources required to operate development education programs. Therefore, many students still find themselves acquiring debt while taking courses that do not count toward graduation. In fact, "over two out of five students who ever take a developmental course accumulate at least one dollar of federal student loan debt—and over two-thirds of remedial students at private nonprofit and for-profit institutions borrow federal loans" (U.S. Department of Education, 2017, p. 10):

> According to estimates produced by New America (based on Complete College America and U.S. Department of Education data for 2013-2014, in most cases) students and families paid approximately $1.3 billion in annual out-of-pocket costs for remediation in all states and the District of Columbia. (U.S. Department of Education, 2017, p. 9)

This issue is especially pertinent for low-income and students of color because their rates of developmental education enrollment is higher than their white and higher income peers, which significantly increases their likelihood of taking out federal loans (Simonez, 2016).

Since a high percentage of developmental education students are considered at-risk populations (students with a higher probability of failure or completion) with limited financial resources, and statistically do not complete their development courses, incurred higher education costs without degree or certification attainment can create further adverse socio-economic conditions for these individuals. In addition, data indicate a clear link between college completion and successful loan repayment (U.S. Department of Education, 2017). Therefore, developmental education students who acquire federal loan debt may not be able to sustain

repayment commitments, which translates into default. Defaulted federal student loan debt can inhibit students, who are already disadvantaged, in ways that they may not be aware of following their cessation from attempting college. Thus, funding for developmental education initiatives is a much more complicated situation than simply federal and state allocations criticism when analyzing student outcomes within the context of financial investments from stakeholders, which has driven the introduction of accelerated developmental education models as more effective methods of broaching developmental education's underlying issues (Edgecombe, 2011).

Underprepared Students and Income

Many of those diverse populations of underprepared students who take developmental courses are considered low-income and academically underprepared for postsecondary studies without additional academic support. In fact, research indicates that a disproportionate number of millions of developmental education students are students of color and low-income (Ganga et al., 2018). According to Perin & Holschuh (2019), "Only 25% to 38% of secondary education graduates in the United States are proficient readers or writers but many continue to postsecondary education, where they take developmental education courses designed to help them improve their basic academic skills" (p. 363). This stark reality prompted institutions of higher education to create developmental education course sequences for reading, writing, and math to accommodate and address the varied needs of the large numbers of students placed into developmental education: "Many students are referred to multiple levels of remediation—up to five levels in some cases" (Bailey & Cho, 2010, p. 46). However, the length of these

sequences and their overall effectiveness has effectuated the need for a redesign of developmental education approaches to increase student success outcomes.

Despite robust efforts of support, it is often reported or interpreted that the return on the huge investment into developmental programs has not yielded results that reflect the level of devoted funding allocation expenditures. Moreover, as previously stated, it is also asserted that multi-tiered course sequences have an adverse effect on successful student academic progression that starkly contrasts their intended impact. However, it merits mention that serving marginalized student populations involves extremely complex analytic processes that do not always conform to predictive analytic measurements as anticipated. Therefore, concerted efforts are underway on the national stage to amend policies and procedures in the field of developmental education: "[The] redesign of remedial programs are intended to reduce or eliminate these problems. However, it is important that such design be affordable and cost effective" (Belfield, 2014, p. 1). Although many different models for this developmental education overhaul are available, the common theme amongst them is acceleration.

Accelerated Developmental Education

Accelerated or Fast Track Developmental Education is a developmental education reform initiative that is meant to address many of the shortfalls of traditional developmental education programs (Center for Community College Student Engagement, 2012). As indicated by various studies, attrition amongst development education students, in part, stems from their failure to enroll in the subsequent course in the developmental sequence rather than course failure. In other words, many students placed in a multi-tiered developmental education program either never enroll into their developmental course(s) or drop out between courses in

the sequence. The lengthier and more complex the developmental process, the greater the opportunity there is for failure in persistence. In addition, further research suggests that students who place into developmental education courses, but who are permitted to enroll in college-level courses, may have a significantly increased chance of completing those college-level courses. As Nikki Edgecombe (2011) of Columbia University's Community College Research Center says:

> Advocates of acceleration argue that a greater portion of students may complete remediation and succeed in college-level courses if colleges either help them complete developmental education requirements more quickly or enroll them in higher level courses while providing academic support. (p. 1)

The aim of accelerated developmental education is not simply the reduction in the time it takes a student to complete developmental courses, but rather to improve certificate and/or degree completion times and rates.

Developmental education reforms and co-requisite remediation are two emerging topics of higher education discourse that merit further research in the community college continuum. Currently, national and state efforts to improve completion rates in higher education have begun to focus on various aspects of developmental education and its correlative effects on student achievement: "According to a national survey of remedial education practices, 16% of public two-year colleges offered some form of corequisite courses in math in 2016, and 35% offered corequisite courses in reading and writing" (Rutschow & Mayer, 2018, as cited in Ran & Lin, 2019, p. 4). Although there is much debate on the issue, the only definitive conclusion that proponents and opponents of developmental education have is their consensus on the need for developmental education reform to varying extents. A major driver for this reform lies in the data that indicate that the majority of students referred to

remedial or developmental programs do not complete the requirements to transition into college-level courses (Jaggars & Bickerstaff, 2018). The multiple iterations of developmental education make this discussion very nuanced and complex. Nevertheless, the significance of developmental education reforms and community colleges is of paramount importance since most developmental education practices take place at community colleges, not four-year higher education institutions. Therefore, any changes in developmental education may have major effects on the vitality of community colleges.

Acceleration Models and Challenges

According to Edgecombe (2011), "There is mounting evidence that following the traditional sequence of developmental education courses is hindering community college students from progressing to college-level coursework and ultimately earning a credential" (p. 1). For some time now, community colleges have recognized negative impacts of traditional developmental education sequences and attempted to address this issue (Hodara & Jaggars, 2014). Prolonged course sequences, ineffective placement protocols, and complex funding stream complications have, in part, harkened a new age of developmental education reform or redesign by way of accelerated formats: "Redesigns of remedial programs are intended to reduce or eliminate these problems. However, it is important that such design be affordable and cost effective" (Belfield et al., 2016, p. 1). Thus, accelerated developmental education models address many of the concerns pertaining to traditional developmental education courses by "reducing the number of obvious exit points from the sequences [and providing] underplaced students with the opportunity to proceed more quickly through unnecessary material" (Hodara & Jaggars, 2014, p. 250).

Although there are several acceleration models for developmental education, three strategies are included in the following analysis for consideration: mainstreaming, compression courses, and modularization.

MAINSTREAMING

Mainstreaming (co-requisites and stackable credentials) is an acceleration strategy where students receive remediation while simultaneously enrolled in a course that leads to a credential (Complete College America, 2012; Nodine et al., 2013): "Students bypass one (or more) courses in a developmental education series and enroll in either (a) transfer-level courses with additional support or (b) courses leading to stackable certificates that may not require remediation immediately" (Nodine et al., 2013, p. 3). The most noted example of the co-requisite model is the Community College of Baltimore County's (CCBC) Accelerated Learning Program (ALP).

CCBC's ALP mainstreams developmental education students into Freshmen English while the developmental students are enrolled in a three-credit companion course (taught by the same instructor):

> ALP is associated with substantially better outcomes in terms of [Freshmen English I and II] . . . Using propensity score matching suggests that ALP students [are] much more likely to complete [Freshmen English I and II], persist to the next year, and complete more college courses and credits than their matched non-ALP counterparts. (Cho et al., 2012, para. 1)

Nevertheless, the ALP model is not without its shortcomings. College-ready students enrolled in ALP sections, in comparison to those enrolled in complete college-ready sections, enroll and complete subsequent courses in lower percentages (Cho et al., 2012). This indicates that co-

requisites, although seemingly effective for many students, can present drawbacks that deem further investigation.

Moreover, direct enrollment in courses leading to stackable certificates is another mainstreaming strategy that targets low-skill adult populations. In this model, programs that offer short-term certifications (of one year or less) are combined to lead to a degree. Said certifications must be taken sequentially. Washington State's Integrated Basic Education and Skills Training (I-BEST) seems to be an effective model as an example of stackable certifications. In the program, "classroom teams of ESL, adult basic education, and professional/technical instructors co-teach an integrated course of language and vocational skills training (with two-teachers in the classroom simultaneously)" (Nodine et al., 2013, p. 3). After achieving success in certification attainment, students may be encouraged to continue and pursue transfer-level programs to further their education. However, the stackable certification approach requires intrusive career and educational guidance to ensure that students comprehend how their courses are connected to enhance career options. If planning with this model does not prepare students to be clearly able to identify transfer-level programs, then it may create further obstacles for the students' academic progression.

Compression Courses

Compression and sequence redesign are additional acceleration strategies that have emerged during recent developmental education reform efforts. In many cases, the length of courses is shortened but still requires the same amount of contact hours, which translates to more concentrated class time.

Some contend that “longer instructional blocks provide opportunities for teachers to diversify classroom activities and encourage the development of stronger student-instructor relationships—both of which are assumed to benefit student learning” (Edgecombe, 2011, p. 6). For example, “The FastStart program at the Community College of Denver fully leverages efficiencies enabled by content overlap, offering a compressed four-course, 12-credit developmental reading and English combination in a single 16-week semester” (Edgecombe, 2011, p. 8). In addition, both compression and sequence redesign strategies include the redesign of curriculum to reduce redundancies (Nodine et al., 2013). Specifically, the time to complete developmental education requirements is reduced via sequence redesign by decreasing the number of courses students have to take (Edgecombe, 2011). As previously exemplified by the FastStart program, the curricula of multiple developmental education courses can be consolidated into a single-semester course. It is important to mention that “curricular redesign can also occur through the elimination of developmental courses and the modification of college courses” (Edgecombe, 2011, p. 10).

Modularization

Modularization converts developmental education content into “discrete learning units, or modules, that are designed to improve a specific competency or skill” (Nodine et al., 2013, p. 5). Modularized instruction is not a new concept. It has existed for several decades; however, advances in technology have allowed for a resurgence of its use as a means of cost-effective accelerated learning (Edgecombe, 2011). Modular approaches to acceleration focus either on mastery of specific competencies or as a rationalization of curriculum.

As Edgecombe (2011) emphasizes, “Modules may accelerate progress because they permit a more customized and efficient approach to learning” (p. 11). In this function, developmental students work to remediate only specific deficiencies as opposed to a wide array of activities that may not be necessary. This way, students who require only a “brush up” do not needlessly waste time when they can easily progress with fewer obstacles. Moreover, those who need more time can have more involved remediation plans integrated into the modules prescribed.

Edgecombe (2011) also noted, “The second way modular instruction may accelerate progress for developmental students is through a rationalization of the curriculum” (p. 11). Modules provide instructors with an opportunity to customize instruction based on degree plans. In other words, the competencies and skills that are necessary for one degree may not be the same as another degree. So, modules can be adapted to meet needs, programmatically and based on individual student deficiencies without redundant instruction. In traditional developmental education courses, students are subjected to a curriculum that may only partly address the students’ individual needs based on their career path, which may cause some students to disengage before receiving the skills necessary to address their identified deficiencies.

Furthermore, due to the diverse needs of developmental education students as a grouped population, some developmental education students are being over remediated, which may prompt the opportunity for dropping out of college due to prolonged stays in courses that have already met the courses’ objectives for those students. On the other hand, modularization also has embedded concerns in its use. For example, pacing is an issue. Self-

paced instruction may not be an appropriate approach for remediation for students with poor time-management skills (Nodine et al., 2013). Additionally, modularization may be perceived as disjointed for some students, which can defeat its intended purpose by exacerbating existing deficiencies further.

Conclusion

Acceleration of traditional developmental programs offers promising outcomes, but also presents challenges and concerns. Historically, developmental education programs have consisted of multiple course sequences. These sequences can and often do require students, based on differentiated placement, to complete several courses before being allowed to enter college-level courses. Placement is also determined by flawed single assessment tools, which increases the possibility of level misassignment. Despite billions of dollars of annual investment into developmental education programs, successful outcomes and student completion ratios remain low. However, the employment of various developmental education acceleration strategies provides the probability for much higher successful outcomes for developmental education students. Mainstreaming, course compression, and modularization are three of the more frequently utilized acceleration reform models for developmental education.

Each model indicates several positive results but requires careful implementation and maintenance to ensure effective sustainability. As institutions of higher education continue to face budgetary constraints while trying to meet student demands in preparation for the 21st-century job market, it is imperative that concerted efforts continue to be made to maintain postsecondary educational systems that can efficiently and effectively provide students with essential skills. Since the number of underprepared students entering college is not projected

to decrease any time soon, it is even more important to eliminate as many obstacles to ensure that students can progress to college course-level work in a timely fashion and are given the necessary support. Although traditional developmental education does provide a great resource and support for students, the fact of high levels of attrition and failure from its programs cannot be ignored. Granted, causation for non-completion cannot, and should not, be considered the fault of developmental education. Many non-cognitive factors play a large role in the situation; however, there remains room for improvement of developmental education delivery methods. Acceleration offers an opportunity to explore these methods via different models.

Co-requisite remediation is the most recent "go to" form of acceleration formats of developmental education. It allows a traditionally underprepared student entering college to enroll into a gateway course (Freshman Comp I, College Algebra, History I, etc.) with a mandatory support course: "Black and Hispanic students are disproportionately assigned to developmental education, and black and Hispanic students who take developmental courses graduate at lower rates than white and Asian students who take developmental courses—compounding attainment gaps" (Ganga et al., 2018, p. 3) . The concept behind this model stems from K-12's mainstreaming practices. Although co-requisite programs such as ALP show preliminary promise, additional peer-reviewed research is necessary to substantiate the long-term efficacy of the practice in relation to various sub-populations, such as African-American males and Hispanic males.

PURPOSE OF THE STUDY

The purpose of the research is to examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to students placed into reading-based and writing-based co-requisites at Houston Community College. Through thorough examination, the hypothesis of identifying whether there is a significant relationship between enrollment in co-requisite INRW and Freshman Comp I course pairings and student success is to be analyzed. From this analysis, there is an expectation of a correlative relationship to be revealed to some extent.

RESEARCH QUESTIONS

The purpose of the research is to examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) for students placed into reading- and writing-based co-requisites at Houston Community College for African-African males and Hispanic males. Furthermore, the driving questions are as follows:

- How are students placed into reading and writing developmental education co-requisites?
- What are the successful completion rates for students placed in INRW co-requisites?
- What are the retention rates for INRW co-requisite students for subsequent semester enrollment following co-requisite placement?

SIGNIFICANCE OF THE STUDY

This topic is of significance to community colleges due to national and statewide completion initiatives, such as 60X30TX (Texas Higher Education Coordinating Board, 2016). Moreover, a qualitative approach to the research is to be employed based on

Phenomenological, Ground Theory, and Case Study methodologies due to the vastness and complexity of the subject matter to develop an objectively comprehensive framing of conclusions of the query posed.

THEORETICAL FRAMEWORK

Developing a framework to couch research on any subject matter requires careful selection of a sound methodology for approaching the topic in an objective, yet academically grounded process that aids in the culmination of information that adds to the existing body of knowledge on said topic. Quantitative and qualitative research paradigms are two of the more prominent models for research management utilized as bases for credible research efforts. However, according to M. Q. Patton (1990, as cited in Hoepfl, 1997), "Researchers have long debated the relative value of qualitative and quantitative inquiry" (p. 47). To this end, researchers have attempted to provide feasible context for understanding the differences between preferences for quantitative or qualitative paradigms when conducting research. Although several justifications in support of both paradigms have been put forth, one can still argue that selection of either can be discussed from a point of comparative epistemologies as a means of developing a clear understanding of rationales for researchers' paradigm preferences (Krauss, 2005). Trochim (2000) defines epistemology as "the philosophy of knowledge or how we come to know" (cited in Krauss, 2005, p. 758). So, using Trochim's definition of epistemology, it can be asserted that "the researcher's theoretical lens is also suggested as playing an important role in the choice of methods because the belief system of the researcher largely defines the choice of method" (Dobson, 2002, as cited in Krauss, 2005, p. 759). In other words, although the paradigms are designed to be unbiased, the causation for a researcher to

slant in the direction of either paradigm merits a far more nuanced discussion if one is to truly determine specific and transferable reasons for paradigm choice. Yet and still, in the case of the current research to examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading- and writing-based co-requisites at Houston Community College (HCC), justification for the use of the qualitative research paradigm is to be explored by way of discussion of paradigm selection, approach selection, and theory or concept lens selection for the inquiry.

For the scale and scope to determine the efficacy co-requisite INRW models at HCC for African-American males and Hispanic males, qualitative research is the best paradigm for the study: "Qualitative research is the systematic inquiry into social phenomena in a natural setting" (Teherani et al., 2015, p. 669). On the other hand, "Quantitative research is based on positivist beliefs that there is a singular reality that can be discovered with the appropriate experimental methods" (Teherani et al., 2015, p. 669). The noted main difference between qualitative and quantitative paradigms, as it pertains to the stated research subject, is the qualitative paradigm's inclusion of post-positivist and constructionist beliefs. Post-positivist researchers subscribe to the belief that environmental and individual differences also influence perceived reality: *"Constructivist* researchers believe that there is no single reality, but that the researcher elicits participants' views of reality" (Teherani et al., 2015, p. 669). So, since the current research seeks to understand the effectiveness of the co-requisite INRW models at HCC for specific cohorts, it contains multiple factors that may not be as clearly recognized or interpreted from a quantitative research viewpoint. For example, developmental education

students in higher education exhibit such a wide range of deficits that, although quantifiable, require narrative contextualization to form better understanding of the best practices that may be suited for certain student cohorts' success. Qualitative research empowers individuals to share their stories, speak in their voices, and minimize the power relationship between researchers and study participants (Creswell & Poth, 2018, p. 84). Thus, data are given individualized context that may better inform the researcher of causes for certain patterns of behavior or occurrences that may not sufficiently be explained through the sole use of quantitative research methods and their correlative data analyses.

Using the qualitative research paradigm to explore the efficacy of co-requisite INRW models at HCC, the post-positivism theory provides the interpretive framework to examine the subject matter for the current research. Post-positivism aligns with positivism by contending that an objective world exists, but it assumes the world might not be readily recognized and variable relations might be only probabilistic (Gephart, 1999). Thus, the post-positivist views research through a "social science theoretical lens" (Creswell & Poth, 2018, p. 23). From this social science theoretical lens, post-positivism works from the premise that there is no cause or effect correlation but rather a probability causal relationship that is multi-faceted (Creswell & Poth, 2018). Thus, regarding understanding data on African-American male and Hispanic male INRW co-requisite students at Houston Community College, predictive indicators for probability of success is a major focus of the current study. To determine the true viability of HCC's INRW co-requisite model, it requires analysis of logical steps that are the by-product of amassing multiple study participants' perspectives into a prism-like frame for viewing the data rather than a single window of interpretation. Post-positivist research theory allows for the

aforementioned type of simultaneous, multi-tiered data analysis. Moreover, post-positivism is oriented to confirmation and validation or falsification of hypotheses and to uncovering or surfacing relationships among variables (Gephart, 1999). The impetus for the current research was to establish the efficacy of HCC's INRW co-requisite model for two cohorts of students that should verify the model's purported general applicability for developmental students as a whole or expose shortcomings that may be inherent to the model's one-size-fits-all adoption and operationalization for incoming developmental education INRW students. With this stated and placed in a grounded theory framework, the post-positivist approach seems to offer the most salient method to analyze the intended data.

With an established qualitative paradigm and post-positivist theory interpretive framework, grounded theory research presents the best qualitative approach to employ as means to ascertain the requisite analysis to provide relevant data for the study. Grounded theory is the idea that positivism is oriented to testing and confirmation of general theories that take the form of well-validated propositions that specify relations among well-defined and quantitatively measured variables (Gephart, 1999). Grounded theory attempts to extend explanation past descriptors and create a theoretical reason for a process or action (Creswell & Poth, 2018). One of major appeals of using this theory is that it is customizable to the study. In other words, it is generated by the data based on the process. To this end, Creswell and Poth (2018) assert that "grounded theory is a qualitative research design in which the inquirer generates a general explanation (a theory) of a process, an action, or an interaction shaped by the views of a large number of participants" (p. 129). For the current research, it was imperative to root the analytical approach to the data from a point that allows for an objective

examination of the co-requisite INRW models' processes based on participants. Referring to Creswell and Poth's definition, the "large number of participants" (p. 129) also prompts the use of grounded theory approach because of the readily available large amount of data on the subject matter within the institution due to ongoing efforts to improve persistence and completion rates. Therefore, grounded theory research is a logical method that can organize the wide-ranging and complex selected metrics for the study through axial coding in a clear and coherent manner.

A qualitative research paradigm with a post-positivist interpretative framework that analyzes data through a grounded theory research lens presents a feasible method to examine the efficacy of the developmental education reforms for INRW as they pertain to African-American males and Hispanic males placed into the reading- and writing-based co-requisites at HCC. Since qualitative research uses a naturalistic approach to understand phenomena in context-specific settings, it offers a richer and more robust opportunity to comprehend data from more of an applicability standpoint than a theoretical one (Hoepfl, 1997). When considering the various contexts associated with developmental education reforms, primarily co-requisites, contextual analysis from an unobtrusive, natural perspective may foster a better chance of gleaning a deeper understanding of occurrences leading to successful outcomes for the cohorts being studied. Moreover, the interpretive framing of the qualitative research in post-positivism lends itself to the process of inquiry and discovery from a broadening of the interpretation of data (Gephart, 1999). Gathering information from beyond the available variables allows for more generalizing of findings derived from study participants that can act as primers for further research efforts, which leads to approaching the noted current research

from a grounded theory perspective. Since findings from grounded theory emerge from participants rather than pre-existing notions, the interdependent and derivative relationship of the multiple factors associated with the current subject matter suggest a very involved but potentially revealing study.

LIMITATIONS

The data and analysis represent the first semester of the implementation of co-requisites at Houston Community College as per Texas HB 2223 (2017). Therefore, the study is limited to Fall 2018. The interpretation of the results is limited to the sample of Hispanic male and African-American male students participating in HCC's Co-requisite Program who were enrolled in an INRW course during Fall 2018.

DELIMITATIONS

The study was designed to examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) for students placed into reading- and writing-based co-requisites at Houston Community College with an emphasis on African-African males and Hispanic males. To do so, a re-evaluation and subsequent analysis of data garnered from a previous study of the first semester of the implementation of co-requisites at Houston Community College were conducted. The researcher was a department chair at the college during the time of the first semester implementation of the co-requisites. He chose to re-evaluate and analyze the data from the previous study to foster deeper insights into the impacts of co-requisite design on two marginalized populations (African-American males and

Hispanic males) to make recommendations to further improve student success for said populations.

The scope of the study is limited. It includes data from a previous study of the first semester implementation of the co-requisites from a selected number of participants. As such, the design of the study excludes subsequent semesters of co-requisite programming data. The limited scope of the study may yield results that differ from a study with a broader scope. Still, the insights gleaned may offer further information that can be leveraged to improve student success for African-American males and Hispanic males placed into reading- and writing-based co-requisites.

DEFINITION OF TERMS

To aid in understanding this study, the following terms are defined.

Developmental Education: Postsecondary course sequences below the college level with expressed foci on addressing student concerns of academic cognition as they relate to expected college levels of outcome performance. It is also the integration of academic courses and support services guided by the principles of adult learning and development (Boylan & Bonham, 2014, as cited in Levine-Brown & Anthony, 2017, p. 18)**.**

Underprepared Students: Students who do not exhibit the level of academic readiness to be successful in college-level courses with additional support. The designation of underpreparedness is determined through entry-level placement assessment.

Accelerated Developmental Education: A developmental education reform initiative that is meant to address many of the shortfalls of traditional developmental education programs (Center for Community College Student Engagement, 2012). Accelerated developmental

education seeks to short the length of time spent in developmental sequences prior to entry into college-level course sequences.

Mainstreaming: An acceleration strategy where students receive remediation while simultaneously enrolled in a course that leads to a credential (Complete College America, 2012; Nodine et al., 2013).

Compression: A developmental education acceleration strategy that combines traditionally tiered developmental education course sequences into a single course or shorter course sequences. "Compressed configurations combine multiple developmental courses and allow students to complete sequential courses in one semester instead of two" (Edgecombe, 2011, p. 8).

Modularization: **O**ffers developmental education content through often self-paced "discrete learning units, or modules, that are designed to improve a specific competency or skill" (Nodine et al., 2013, p. 5).

Co-requisite: An accelerated developmental education model that allows underprepared students the opportunity to enroll in selected college-level courses along with mandatory just-in-time course support delivered through an abbreviated and contextualized developmental education course aligned with and attach to specific college-level courses.

CONCLUSION

Shifts in developmental education from a traditional sequence model to accelerated development education models offer emerging means to address underprepared students' needs. Co-requisite remediation as an accelerated developmental education model is one such approach to work toward improving developmental education student success. To this end,

further exploration of the impacts of co-requisite remediation for African-American males and Hispanic males placed into reading- and writing-based co-requisites at Houston Community College is necessary to determine its efficacy for said populations.

CHAPTER TWO: LITERATURE REVIEW

INTRODUCTION

Although co-requisite course design models are not new in higher education, the retro-fitting of co-requisite models into a developmental education framework is a fairly recently proposed practice in higher education. The practice does indicate some preliminary success, but there has not been extensive, if any, direct research conducted or dedicated to examining the efficacy of developmental co-requisite models on specific cohorts. In fact, much of the relevant discourse focuses primarily on developmental education best practices, or high impact practices, and developmental education reforms in general. Works by noted higher education scholars such as Boylan, Bailey, Boatman, Squires, Edgecombe, Daugherty, Miller, Hodara, and Jaggars develop a sound foundation to build an understanding of the underlying issues and possible solutions to said issues. Literature on Critical Race Theory, Social Interdependence Theory, Adult Learning Theory, Educational Equity Theory, and Validation Theory is reviewed to aid in framing context to circumstances from which developmental education literature is thereafter surveyed.

CRITICAL RACE THEORY

A significant body of research indicates that Critical Race Theory is often regarded as framework that questions deep-rooted causes of racism that builds on several previous

movements (Kincheloe & McLaren, 2011, as cited in Ogbonnaya-Ogburu et al., 2020). Early on, scholars such as Derrick Bell further assert that it is designed to examine various aspects of social phenomena (Kincheloe & McLaren, 2011, as cited in Ogbonnaya-Ogburu et al., 2020). Building on the efforts of earlier research, Sleeter (2017) notes that Critical Race Theory provides tools to uncover embedded racism that has been institutionalized. Sleeter also states that many teachers are not equipped to teach diverse students from culturally relevant or culturally responsive perspectives. However, Sleeter also contends that there are three tenets of Critical Race Theory that are useful for situational analysis, which are interest convergence, challenges to claims of neutrality and color blindness, and experiential knowledge. Through the lens of these tenets, it is suggested equity gaps persist along racial lines due to pervasive practices that are indoctrinated in educational programmatic structures that have been relegated to a state of accepted normalcy. To expand the research more, Delgado and Stefancic (2017) note that Critical Race Theory examines racism and power structures from a framework that includes many different factors such as economics and self-interest. These authors also purport basic tenets that parallel Sleeter's tenets, to which Delgado and Stefancic posit that racism is ordinary reality of social interaction for people of color in America. To this point, L. D. Patton (2016) states that true racial diversity in higher education has not been attained (p. 332). Patton also says that racism persists throughout higher education literature and research. Patton further notes that institutions must intentionally and strategically educate about race as a necessary facet of higher education. However, an example to the contrary can be found in developmental education. Preston (2017) notes that there is an imbalance in the representation in the number of Black instructors given the large percentage of Black students

placed in developmental education. Research also indicates that the deficit of faculty of color is detrimental to the success of students of color (Preston, 2017). Research also states that higher education institutions do not always possess sufficient tools to meet the needs of underprepared students, and developmental education instructors are expected to yield results that may not be attainable sans adequate resources (Preston, 2017).

SOCIAL INTERDEPENDENCE THEORY

An abundance of research deems Social Interdependence Theory as a practice whereby the structure of goals determines interaction (Johnson, 2003). In education, the literature suggests that Social Interdependence Theory often emerges via cooperative learning discourse. Johnson (2003) asserts that Social Interdependence Theory and education are inextricably interwoven as integral aspects of the education process in discussions of cooperative learning (p. 934). Accordingly, further research suggests that cooperative learning "tend(s) to promote greater efforts to achieve, more positive relationships, and greater psychological health than do competitive or individualistic efforts" (Johnson, 2003, p. 940). To this point, research contends that the strength of cooperative efforts depends on "clear, positive interdependence (which includes individual accountability) that results in promotive interaction (which includes appropriate use of social skills and group processing)" (Johnson, 2003, p. 940). Building on earlier research, Visschers-Pleijers et al. (2006) state, "Collaborative learning potentially promotes deep learning, in which students engage in high-quality social interaction, such as discussing contradictory information" (as cited in Scager et al., 2016, p. 1). Moreover, Scager et al. also "suggest that collaborative learning with university students be designed using challenging and relevant tasks that build shared ownership" (p. 8). However, collaborative learning can face

challenges when cultural mismatches occur. Stephens et al. (2019) note, “This mismatch can emerge when people from working-class contexts do not enact independent norms valued by institutions or when they do enact interdependent norms that are relatively less valued” (p. 69). Consequently, this can fuel social disparities that are evidenced through low completion rates for marginalized populations (i.e., developmental education students). Tang et al. (2019) put forth three cases of social interdependence: (1) positive social interdependence, (2) negative interdependence, and (3) no interdependence (p. 28). These cases offer framing for modeling of patterns that reflect interdependence. Thus, current research asserts that “the interaction patterns demonstrate the encouragement among cooperative learning group members to complete tasks and fulfill their mutual interests” (Johnson et al., 2007, as cited in Tang et al., 2019, p. 29).

ADULT LEARNING THEORY

According to the literature, Adult Learning Theory refers to the differences between children learning and adults learning. Scholars contend that there are several purported foundational theories of adult learning (Merriam, 2018). Among these theories are (a) Andragogy, (b) Self-Directed Learning, and (c) Transformative Learning (Merriam, 2018). As an early researcher on the theory, Knowles (1980) developed the concept of andragogy (“the art and science of helping adults learn”) to contrast pedagogy (“the art and science of teaching children”) (cited in Corley, 2011). Knowles suggests that those who instruct adult learners should (a) foster a cooperative climate of learning, (b) assess the learner’s needs and interests, (c) design scaffolded assignments to meet objectives, (d) work collaboratively with the learner, and (e) evaluate the learning experience and make necessary changes as needed (Knowles &

Associates, 1984, as cited in Corley, 2011). The research suggests that a primary tenet of Adult Learning Theory is self-directed learning: “Self-directed learning (SDL) is a process in which individuals take the initiative, without the help of others” in planning, carrying out, and evaluating their own learning experiences (Knowles, 1980, as cited in Corley, 2011, p. 1). The research also notes that literacy levels are a determining factor as to the engagement and success of SDL. Scholars also note that when canvasing methods to address gaps in learning for adult students, Adult Learning Theory should act as the basis from which research and subsequent discourse evolve: “Transformative Learning focuses on the cognitive process of meaning making” (Merriam, 2018, p. 25). The literature asserts that transformative learning is dependent on mature life experiences that can be derived only from adulthood via advanced levels of cognitive ability that are associated therewith. Each of the three noted theories of Adult Learning Theory addresses ways in which adults learn (Merriam, 2018). Later research suggests that developmental and remedial education programs in higher education are areas where Adult Learning Theory is realized through active practice. Boylan & Bonham (2014) state that “Developmental education is the integration of academic courses and support services guided by the principles of adult learning and development” (as cited in Levine-Brown & Anthony, 2017, p. 18). However, Boylan and Bonham contend “integrating courses and services or using principles of adult learning and development, are [un]likely to happen unless faculty are given both the reasons and the methods for making this happen” (Levine-Brown & Anthony, 2017, p. 20). As such, Boylan and Bonham seem to note a required level of dynamic or fluid intentionality that needs to be employed when addressing the needs of adult learner. Freire (1970) underscores this point by recommending to “focus on critical literacy rather than

traditional literacy-skill teaching strategies when working with adult learners from lower socioeconomic backgrounds" (cited in Garayta, 2017, p. 12).

EDUCATIONAL EQUITY THEORY

The body of early research on Educational Equity Theory defines the theory on "three levels: equality, justified inequality, and fair process" (Boocock & Predow, 1979, as cited in Ahiatrogah & Bervell, 2013, p. 275). Based on the initial scholarly discourse on Education Equity Theory, later research states that "within the scope of education study, it's not difficult to conclude that equity is an essential focus for any education system" (Bottani & Benadusi, 2006, as cited in Hoang, 2020). The essentialness of equitable practices in education is also correlative to unstated social contracts on which much of America's social structure stands. To this end, research suggests that concerted efforts to lessen education are well underway (Hoang, 2020). Still, categorical couching of equity agendas has been framed through examinations of federal policies and programs (Brookover & Lezotte, 1981, as cited in Hoang, 2020). Accordingly, Brookover and Lezotte (1981) assert three standards of educational equity: access, participation, and outcomes (cited in Hoang, 2020). To further distill cogency, Hoang (2020) notes a trend of scholars reviewing educational outcomes for varying student populations to better evaluate educational equity instead of just looking at the equality of accessibility and participation. However, the research contends that there is a wide scope of equity (Parveen & Awan, 2019). The expanse of the influence of equity extends to encompass equitable educational practices throughout all aspects of instruction (Mirci et al., 2011, as cited in Parveen & Awan, 2019, p. 187). The literature further asserts that these practices include developmental education and its most recent iteration of proposed reforms to accelerate

students through gateway courses during their first semester of enrollment. Furthermore, Mokher, Park-Gaghan, and Hu (2020) assert that although support for first-year students is increasing, institutions should evaluate the sustainability of providing continued support to students as they progress through programs. More recently, the literature states that colleges should begin to offer additional student support services to students who would have been placed into developmental education but are now being offered an opportunity to enroll into college-level courses upon entry into institutions (Mokher et al., 2020). In addition, the literature also makes mention of possible associated cost-correlated trade-offs with proposed developmental education reform efforts in the spirit of educational equitable to be considered.

VALIDATION THEORY

Rendon's (1994) research is the gold standard for Validation Theory scholarly discourse. The body of literature on Validation Theory defines it as "an enabling, confirming and supportive process initiated by in and out of class agents that foster academic and interpersonal development" (Linares & Muñoz, 2011, p. 17). Rendon contends that faculty, administrators, and counselors must engage in validating students and recognize the diversity and individuality of students in all regards as an asset-based model of affirmation. As such, Validation Theory seeks to "(1) validate students as creators of knowledge and as valuable members of the college learning community and (2) foster personal development and social adjustment" (Linares & Muñoz, 2011, p. 12). It is further asserted that validating nontraditional students is critical for success in college (Rendon, 1994). In addition, Linares and Munoz (2011) suggest that "many students encounter subtle and overt forms of racism, sexism, and oppression on college campuses" (p. 17). Being able to overcome such barriers presents a

challenge for many of these students to which some are unable to persist beyond. In response, "Validation Theory provides a framework that faculty and staff can employ to work with students in a way that gives them agency, affirmation, self-worth, and liberation from past invalidation" (Linares & Muñoz, 2011, p. 17). Validation Theory is "a viable theory that can be employed to better understand the success of underserved students, improve teaching and learning, understand student development in college, and frame college student success strategies" (Linares & Muñoz, 2011, p. 28). The literature also suggests that the underpinnings of Validation Theory are rooted in social justice and equity from which a culture of care can emerge where underserved students are empowered to learn and move past invalidation and oppression (Linares & Muñoz, 2011).

DEVELOPMENTAL EDUCATION

Boylan's (2002) *What Works: Research-Based Best Practices in Developmental Education* is regarded as the seminal work and an overall authoritative document for developmental education practices. The book is the result of a collaborative effort between the Continuous Quality Improvement Network (CQIN) and the National Center for Developmental Education (NCDE). As the gold-standard for research-based best practices for developmental education, Boylan asserts that the value of developmental education best practices hinges upon organizational, administrative, and institutional practices; instruction practices; and customization of the best practices as the foundation for framing a coherent model to more effectively serve underprepared students. Furthermore, Boylan notes that the most relevant available data on successful methods used by practitioners serve better as a repository of developmental education tools to be implemented and configured in multiple ways within

existing higher education infrastructures. Therefore, each best practice defined within the work is thereafter followed by tips for implementation that have since become the de facto working framework for development education programming.

As Boylan lays the foundation for additional research, Edgecombe (2011) offers alternative points for consideration about development education practices in comparison to Boylan in *Accelerating the Academic Achievement of Students Referred to Developmental Education*. Edgecombe, a researcher at Columbia University's Community College Research Center, indicates a shift in the national perspective of developmental education and its impact on student success by way of retention and persistence. This shift is partly tied to costs associated with developmental education and success rates. Hodara and Jaggars (2014) continue Edgecombe's course of exploration of a developmental education paradigm shift in "An Examination of the Impact of Accelerating Community College Students' Progression through Developmental Education." Hodara and Jaggars, therefore, suggest that shorter math and writing developmental education sequences prompt a higher probability of enrollment and success in subsequent correlative college-level courses (i.e., college-level math and writing).

PRACTITIONER GUIDES

Early iterations of developmental education research provide the framework for the development of collections of best practices, such as the works of Boylan (2002). The amount of research on developmental education is broad and extensive. However, literature that specifies co-requisite remediation is not as abundant. Due to a lack of current study on the topic, organizations such as Complete College America continue to offer white papers that many higher education institutions refer to when considering co-requisites as a means to implement

developmental education reforms. To this end, Complete College America's (2012) *Remediation: Higher Education's Bridge to Nowhere* purports that the efforts of developmental education, albeit noble, are failing. Complete College America also maintains that current developmental education programs are flawed and are marred by lengthy sequenced-based course structures that inhibit student success.

Moreover, Belfield (2014) suggests that colleges should consider exemptions, retesting, or refresher workshops as alternatives to mitigate placement errors for students. Scott-Clayton and Stacey (2015) state that underplacements in developmental education courses are more common than overplacements into college-level courses. Scott-Clayton and Stacey also contend that little attention is paid to how college readiness is determined. These points are expounded upon by other scholars, such as Belfield, Jenkins, and Lahr (2016), who assert that there is a likelihood of misassignment and associated costs with developmental education. In addition, proper placement of students has a direct correlation to student success (Belfield et al., 2016). Belfield et al. further state that some developmental students are misplaced due to variations in assessment metrics. The impact of such misassignment then translates to decreases in completion rates and efficiency through institutions (Belfield et al., 2016).

Bailey et al. (2016) further the development of dialogue and collection of data on developmental education in *Strategies for Postsecondary Students in Developmental Education: A Practice Guide for College and University Administrators, Advisors, and Faculty*, which is a by-product of the What Works Clearinghouse. Bailey et al. maintain that underprepared college students' successful completion rates are lower than their college-ready peers. Bailey et al. also note that readiness for college-level work takes on different meanings that differ by subject to

which there is no general benchmark to accurately indicate readiness. Additionally, research groups such as RAND act as repositories for professional research study data to be collected through efforts of researchers such as Daughtery et al. (2018) in culminated works like *Designing and Implementing Corequisite Models of Developmental Education: Findings from Texas Community Colleges*. Daughtery et al. note that several practitioners support developmental education reforms; nevertheless, concerns are still expressed by some faculty and administrators (Daugherty et al., 2018, p. 3). Daughtery et al. also suggest deeper causal relationships of developmental education reforms and student success that are being addressed in response to criticism concerning the effectiveness of traditional course-based developmental education. As such, Daughtery et al. state that early co-requisites data suggest that it may be a promising solution for developmental education reform, but there remain many unanswered questions about delivery models (p. 19).

COSTS

There is limited research on the costs for co-requisite remediation. However, the research for associated costs for developmental education is much more extensive. Belfield et al. (2016) suggest that corequisite remediation is more cost-effective than traditional sequenced remediation models. Yet, they also note being more effective does not mean they are also more efficient (p. 2). Based on their cost analysis research, cost savings can be achieved through higher retention and graduation rates and other means to develop a sustainable model with increased upfront cost, but sustained lower costs over time (Belfield et al., 2016). Accordingly, Belfield et al.'s methods note various metrics to which efficiency gains are couched within a monetary framing. Moreover, Belfield et al. juxtapose the cost-effectiveness of

developmental prerequisites to co-requisite remediation as means to illustrate the translation of positive gains in using the latter as a way to remediate students. Research conducted in Tennessee concluded that co-requisite remediation is a more feasible and productive method to address the needs of underprepared students (Belfield et al., 2016). However, Belfield et al. also contend that the aforementioned posit comes with a host of caveats strewn with unanswered questions.

Tennessee has adopted an all-in co-requisite remediation model. Although the initial gains are positive, several authors have contended that co-requisite remediation may have some unforeseen adverse effects for certain populations of students (i.e., African-American males). Other research asserts that stand-alone remediation is not more harmful to students of color in comparison to White students placed in developmental education (Chen, 2016, as cited in Goudas, 2020, para. 4). Moreover, the effect on students who place on or above level who are enrolled within co-mingled co-requisite remediation models has yet to be determined. In addition, some literature states that lower than expected remedial education outcomes have led some reform proponents to deem developmental education as ineffective and to seek means to increase success (Bailey et al., 2016, as cited in Goudas, 2020, para. 3). Still, some scholars suggest that co-requisite remediation may have a negative effect, since the pace of the class is impacted due to the introduction of a new type of student who requires different types of academic support. Nevertheless, such cost and effectiveness-correlated discourse may offer a glimpse into what could be the initial steps toward the future of developmental education.

DIFFERENTIATED REMEDIAL AND DEVELOPMENT EDUCATION IMPACTS

Research on the impacts of developmental education is abundant and nuanced. Cho, Kopko, Jenkins, and Jaggars' (2012) research provides insight on English gateway course completion rates, specifically English 101 and English 102 (both college-level English courses). Cho et al. assert that ALP students are more likely to persist in comparison to non-ALP cohorts of English 101 and English 102 students. However, Cho et al. also note opponents of developmental acceleration programs express concerns about this approach based on three areas: (1) student struggle in college-level classrooms and possible lower grades and pass rates, (2) possible lowering of college-level standards, and (3) possible detrimental impacts on college-ready students (p. 23). The literature also states that ALP proved to be more beneficial for White and high-income students for some outcomes (Cho et al., 2012). Nevertheless, the research then states that ALP students performed at higher levels in comparison to students who took the highest-level developmental education course prior to taking college-level English (Cho et al., 2012). Although the research leans toward the positives of the ALP model, it also offers that the results of Cho et al.'s analysis are correlational and should not be interpreted to mean that participation in ALP caused the superior outcomes observed (Cho et al., 2012). At present, ALP is the most studied and regarded of the co-requisite remediation models.

Boatman and Long (2018) suggest that remedial and developmental courses result in different outcomes depending upon the level of student preparedness in their examination of the effects of remedial and developmental education on students who required different degrees of remediation. They note that the inclusion of multiple levels of unpreparedness allows for the gleaning of a broader perspective of the overall impact of developmental

education. Boatman and Long also assert that the impact of developmental courses for lower-level students be positive. Using longitudinal data from two- and four-year colleges and universities from mathematics-based, reading-based, and writing-based developmental and remedial courses, Boatman and Long determined approximate results on student outcomes. This leads to their assertion that the effectiveness of developmental education is premised on nuanced factors that can translate into positive gains for some underprepared students and negative gains for others. Boatman and Long provide clear support of the notion that there is no one-size-fits-all approach for student success when discussing underprepared populations. They also suggest that the grade in first college-level courses is imperative to fully foster a clear understanding as to the effect of remedial and developmental education holistically.

PARADIGM SHIFT FROM TRADITIONAL DEVELOPMENTAL EDUCATION TO CO-REQUISITE REMEDIATION

The literature suggests a shift from developmental education to co-requisite remediation models. Breneman and Haarlow (1998) contend that remedial education has lessened the importance of high school diplomas, meaning of college admission, decreased the value of college degrees, and drained resources at colleges. The literature suggests that this contention and others with same undertones have given rise to a high-level scrutiny placed on developmental and remedial education efforts. This strict scrutiny has thus yielded the onset of suggestive alternative means of remediation to abate the perceived lack of success with traditional developmental and remedial models currently in practice. However, the inconsistency of learning gaps for students who are relegated to developmental and remedial education programs runs the gambit, which creates a scenario with very open-ended

possibilities of learning deficiencies that are difficult to identify with exacting specificity using the multitude of assessments tools currently adopted to do just such. Nevertheless, there is no shortage of approaches as to interventions that may be employed to address underprepared college student needs.

Attewell, Lavin, Domina, and Levey (2006) note that there is an overrepresentation of minority and marginalized student populations in remedial courses. The research further states that with such large numbers of marginalized groups populating developmental education programs, measures (i.e., policies) instituted to mitigate or prevent these students from failing, or to artificially accelerate them, may reduce the likelihood of such students' completion rates (Lavin & Weiniger, 1998, as cited in Attewell et al., 2006). This underscores the politicization of developmental and remedial education reforms. Attewell et al. say that remediation has become a political issue (Kozeracki, 2002; Soliday, 2002, as cited in Attewell et al., 2006, p. 886). Additionally, Attewell et al. argue, based on Adelman's research, that "poor high school preparation, rather than taking remedial coursework, is what reduces students' chances of graduating from college," to which acceleration efforts (i.e., co-requisite remediation) are being implemented across the nation as an increasingly common method of addressing underprepared students' remediation needs (Adelman, 2004, as cited in Attewell et al., 2006, p. 889).

Calcagno and Long (2008) contend that assignment to remediation increases persistence and credit accumulation, but not completion. The researchers also assert that although there may be an initial return regarding a likelihood of persistence, associated costs to run current iterations of developmental or remedial programs may not have alignment

pertaining to institutional expenditures and return on investment as evidenced by completion rates for students near cutoff placement. Conversely, despite noting the lack of congruency of expenditures and prohibitive costs, Calcagno and Long state "even a year of college without completing a degree has a return, [so] the investment in remediation may not be wasted" (p. 32). The researchers further contend that increases in early persistence due to remediation provide for outreach opportunities to students to further their educational pathways (p. 32).

Bettinger and Long (2009) report that students who receive remediation have better educational outcomes in comparison to those who need it and do not receive it. Bettinger and Long also assert that controls on placement into remediation have a corelative impact on success outcomes. Bettinger and Long state that although remediation has a negative effect, better student placement may result in better outcomes.

Bailey (2009) asserts that different types of interventions may be required to prepare students for college-level work. These interventions can range in variety and methodology depending upon a number of variables, including assessment tools, funding, and state regulations. However, Boylan argues that colleges must serve all students, which includes those who need developmental education. To this end, Bailey also states that data suggest that remediation may improve student outcomes that would be lower without such an intervention.

Edgecombe (2011) states that traditional developmental education sequences are counterproductive to underprepared student success and their likelihood to move into college-level coursework. Edgecombe also notes that there is a limited body of empirical literature that actually scrutinizes these accelerated interventions' effectiveness. Moreover, Edgecombe says that in response to the acceleration movement, community colleges have adapted their existing

course formats into accelerated versions by developing course restructuring outcomes and mainstreaming outcomes. The outcomes can be achieved through a number of methods, including compressed courses and mainstreaming with supplemental support. Still, counterarguments and contrary evidence suggest that some students are better served through deceleration. Edgecombe concludes that acceleration is a promising practice, but it has not been studied long enough. Moreover, there are several models of redesign and mainstreaming approaches that community colleges can utilize to optimize successful student outcomes.

Complete College America (CCA, 2012) asserts that developmental education has fallen miserably short of its goals and become an additional barrier that prevents underprepared students from achieving academic success. CCA contends that several factors contribute to the phenomena, including multiple exit points for students within developmental course sequences, based on data from 33 states. To this point, CCA offers solutions to address the issues that it believes traditional developmental education programs are intended to resolve, including co-requisite remediation (CCA, 2012). In alignment with its stance, CCA says that institutions should start college students in college-level courses, which succinctly supports its position to provide help as a co-requisite, not a prerequisite in criticism of traditionally sequenced remediation programs. Co-requisite remediation is presented as a more productive alternative to remediation for underprepared students that reduces exit points and fosters encouragement through opportunity and access. CCA states that remediation programs are barriers to student progress (p. 11). CCA also provides data to show that high numbers of developmental education students who are placed into traditional development education programs consistently yield low success rates in the limited states included in the research.

Scott-Clayton and Rodriguez (2012) assert that remedial education is the most widespread and costly intervention aimed at assisting underprepared students entering into college. The authors acknowledge previous research methods for their reliance on regression-discontinuity analyses. However, in probing the effects of remedial education, a conceptual framework for coalescing the expanse of the issue associated with remedial education, Scott-Clayton and Rodriguez assert three models of remedial education functionality. The models are The Developmental Model, The Discouragement Model, and The Diversion Model (Scott-Clayton & Rodriguez, 2012). Each model has inherent intentional effects, but also many attached causal ones as well. Scott-Clayton and Rodriguez conclude that there is little support for developmental models of remediation nor is there a strong correlation between developmental courses and active discouragement; instead, they assert that remediation acts more as a diversion.

Nodine, Dagar, Venezia, and Bracco (2013) suggest that there are three models of acceleration in developmental education: (1) mainstreaming (co-requisite enrollment), (2) compression and sequence redesign, and (3) modularization. Accordingly, the literature states that mainstreaming (co-requisites) allows students to bypass courses sequencing in a developmental education program and enroll in college-level courses with additional support (Nodine et al., 2013). The literature also notes that compression and sequence redesign is when curriculum is redesigned to better align with subsequent college-level course skill requirements. This can include many approaches, such as changing course content or providing just-in-time additional support (Nodine et al., 2013). The literature additionally says that modularization divides developmental coursework into modules meant to allow students a self-paced

remediation option (Nodine et al., 2013). Each of the methods of acceleration are frequently mentioned or referenced throughout much of the surveyed literature. Still, the literature also notes concerns that are associated with each approach that may present challenges in the alignment of form and function with the reality of issues that are sure to arise when moving an institution in the direction of acceleration (Nodine et al., 2013).

Hodara and Jaggars (2014) contend that acceleration models provide traditional developmental students the opportunity to complete remediation in shorter times. Although initial findings suggest that acceleration offers positive gains for student success, there still remains a lack of research on the subject. Hodara and Jaggars assert that there are several areas of hesitancy expressed in the adoption of acceleration models by institutions. The three areas of concern surround the challenges that arise from required funding, limited research on acceleration, and pass rates (Hodara & Jaggars, 2014). Hodara and Jaggars conclude that developmental education redesign could lead to a shift in thinking about remediation approaches for more long-term changes (p. 272). Hodara and Jaggars' research provides clear statistical insight into a practical methodology that can be used to assess the effectiveness of developmental education efforts concerning acceleration. In alignment with other research efforts, acceleration studies produce encouraging results but still present noticeable drawbacks.

Jiminez, Sargard, Morales, and Thompson (2016) state that remedial or developmental education are terms defined differently throughout the nation. However, a commonality of the definitions is that the courses are below-college-level and noncredit. Jiminez et al. further assert that remedial courses have a negative impact on student persistence. They additionally

purport the need for closer partnerships and alignment between K-12 and higher education as an essential step in creating a more effective educational system for all students. These same sentiments echo statements found in the work of several other authors on the same subject.

Tran (2016) explores the transformation of remediation through discourse on co-requisite remediation efforts. Accordingly, Tran notes that 1 in 5 students in the study of the data being used is initially enrolled as a developmental education student. Thus, one fifth of incoming student populations are considered underprepared for college-level coursework, which translates to significant numbers for institutions. Still, Tran also states that there is a population of underprepared students who require stand-alone remediation that is designed for mastery in a gateway course. However, Tran concludes that co-requisite model gains associated with gateway Math and English course completion rates significantly outperform traditional pre-requisite Math and English remediation models.

Daughtery, Gomez, Carew, Mendoza-Graf, and Miller (2018) examined Texas's implementation of co-requisite models to note that, prior to moving into the use of co-requisites, Texas worked diligently to overhaul its developmental education programs by mandating acceleration initiatives throughout the state. This was accomplished through the compression and deletion of multiple levels of developmental courses. Therefore, developmental education course sequences were significantly reduced in the number of required courses necessary for underprepared student progress to college-level courses (i.e., English Comp I or College Algebra). Thirty-six community colleges provided the data for the study where Daughtery et al. found that various interpretations of co-requisite models were already being employed, or were planned on, throughout Texas. The researchers further contended that there were also

four distinct challenges common across the models: buy-in, scheduling and advising, instruction preparation, and state policy. Despite presenting promising results, Daughtery et al. also acknowledged that current reforms in developmental education are still in their early stages and require further analysis to overcome the challenges that have emerged during this transformative period. Mejia (2018) asserts that the throughput rate of co-requisite students is higher than traditional remedial approaches.

CONCLUSION

The concept of developmental education acceleration as a best practice is reiterated throughout much of the current literature pertaining to developmental education. As an exploratory practice to generate higher levels of student success within developmental courses, accelerated models of remediation may offer a viable means to achieve this goal. So, the examination of a relevant literature review for the current research topic encompasses the use of a multi-dimensional, interdisciplinary approach to filtering available and current studies to form a comprehensive framework by which a feasible design method can be constructed.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

INTRODUCTION

Developmental education reforms and co-requisite remediation are two topics that merit further research in the community college continuum. Currently, national and state efforts to improve completion rates in higher education have begun to focus on various aspects of developmental education and its correlative effects on student achievement. Although there is much debate on the issue, the only definitive conclusion that proponents and opponents of developmental education have is their consensus on the need for developmental education reform to varying extents. The multiple iterations of developmental education make this discussion very nuanced and complex. Nevertheless, the significance of developmental education reforms and community colleges is of paramount importance since most developmental education practices take place at community colleges, not four-year higher education institutions. Therefore, any changes in developmental education may have major effects on institutional funding, operations, persistence rates, completion rates, and a host of other contributing factors related to the vitality of community colleges, thereby impacting global and national employment trends and America's economy.

Moreover, co-requisite remediation is a related, but equally important, topic regarding community colleges. Co-requisite remediation is the most recent "go to" form of acceleration formats of developmental education. It allows a traditionally underprepared student entering

college to enroll into a gateway course (Comp I, College Algebra, History I, etc.) with a mandatory support course. The concept behind this model stems from K-12's mainstreaming practices. Although co-requisite programs such as ALP show preliminary promise, additional peer-reviewed research is necessary to substantiate the long-term efficacy of the practice in relation to various sub-populations, such as African-American males and Hispanic males.

PURPOSE

The purpose of the research is to examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading- and writing-based co-requisites at Houston Community College.

DRIVING QUESTIONS

The driving questions are as follows:

- How are students placed into reading and writing developmental education co-requisites?
- What are the successful completion rates for African-American males and Hispanic males placed in INRW co-requisites?
- What are the retention rates for African-American males and Hispanic males for subsequent semester enrollment following co-requisite placement?

SIGNIFICANCE OF TOPIC

This topic is of significance to community colleges due to national and statewide completion initiatives, such as 60X30TX (Texas Higher Education Coordinating Board, 2016). Moreover, a mixed approach to the research is to be employed based on phenomenological,

grounded theory, and case study methodologies due to the vastness and complexity of the subject matter to develop an objectively comprehensive framing of conclusions of the query posed.

PARADIGM, METHODOLOGY, AND FRAMEWORK

To examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading- and writing-based co-requisites at Houston Community College, a qualitative research paradigm with a post-positivist interpretative framework that analyzes data through a grounded theory research lens is a viable method for conducting the research. Reasons for selecting a qualitative research method are presented as the generalized framing for the research study. Thereafter, a brief analysis of the post-positivist interpretive framework is given as the theory for the effort. A grounded research theory approach is cited as the means to note data within the post-positivist frame.

Developing a framework to couch research on any subject matter requires careful selection of a sound methodology for approaching the topic in an objective, yet academically grounded process that aids in the culmination of information that adds to the existing body of knowledge on said topic. Quantitative and qualitative research paradigms are two of the more prominent models for research management utilized as bases for credible research efforts. However, according to M. Q. Patton (1990, as cited in Hoepfl, 1997), “Researchers have long debated the relative value of qualitative and quantitative inquiry” (p. 47). To this end, researchers have attempted to provide feasible context for understanding the differences between preferences for quantitative or qualitative paradigms when conducting research.

Although several justifications in support of both paradigms have been put forth, one can still argue that selection of either can be discussed from a point of comparative epistemologies as a means of developing a clear understanding of rationales for researchers' paradigm preferences (Krauss, 2005). Trochim (2000) defines epistemology as "the philosophy of knowledge or how we come to know" (cited in Krauss, 2005, p. 758). So, using Trochim's definition of epistemology, it can be asserted that "the researcher's theoretical lens is also suggested as playing an important role in the choice of methods because the belief system of the researcher largely defines the choice of method" (Dobson, 2002, as cited in Krauss, 2005, p. 759). In other words, although the paradigms are designed to be unbiased, the causation for a researcher to slant in the direction of either paradigm merits a far more nuanced discussion if one is to truly determine specific and transferable reasons for paradigm choice. Yet and still, in the case of the current research to examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading- and writing-based co-requisites at Houston Community College (HCC), the use of the qualitative research paradigm is to be explored by way of discussion of paradigm selection, approach selection, and theory or concept lens selection for the inquiry.

For the scale and scope to determine the efficacy of co-requisite INRW models at HCC for African-American males and Hispanic males, qualitative research is the best paradigm for the study: "Qualitative research is the systematic inquiry into social phenomena in a natural setting" (Teherani et al., 2015, p. 669). On the other hand, "quantitative research is based on positivist beliefs that there is a singular reality that can be discovered with the appropriate experimental methods" (Teherani et al., 2015, p. 669). The noted main difference between

qualitative and quantitative paradigms, as it pertains to the stated research subject, is the qualitative paradigm's inclusion of post-positivist and constructionist beliefs. Post-positivist researchers subscribe to the belief that environmental and individual differences also influence perceived reality: *"Constructivist* researchers believe that there is no single reality, but that the researcher elicits participants' views of reality" (Teherani et al., 2015, p. 669). So, since the current research seeks to understand the effectiveness of the co-requisite INRW models at HCC for specific cohorts, it contains multiple factors that may not be as clearly recognized or interpreted from a quantitative research viewpoint. For example, developmental education students in higher education exhibit such a wide range of deficits that, although quantifiable, require narrative contextualization to form better understanding of the best practices that may be suited for certain student cohorts' success. Qualitative research empowers individuals to share their stories, speak in their voices, and minimize the power relationship between researchers and study participants (Creswell & Poth, 2018, p. 84). Thus, the data used for the study are given individualized context that may better inform the researcher of causes for certain patterns of behavior or occurrences that may not sufficiently be explained through the sole use of quantitative research methods and their correlative data analyses.

POST-POSITIVISM THEORY

Using the qualitative research paradigm to explore the efficacy of co-requisite INRW models at HCC, the post-positivism theory provided the interpretive framework to examine the subject matter for the current research. Post-positivism aligns with positivism by contending that an objective world exists, but it assumes the world might not be readily recognized and variable relations might only be probabilistic (Gephart, 1999). Thus, the post-positivist views

research through a "social science theoretical lens" (Creswell & Poth, 2018). From this social science theoretical lens, post-positivism works from the premise that there is no cause or effect correlation but rather a probability causal relationship that is multi-faceted (Creswell & Poth, 2018). Thus, regarding understanding data on African-American male and Hispanic male INRW co-requisite students at Houston Community College, predictive indicators for probability of success is a major focus of the current study. To determine the true viability of HCC's INRW co-requisite model, it requires analysis of logical steps that are the by-product of amassing multiple study participants' perspectives into a prism-like frame for viewing the data rather than a single window of interpretation. Post-positivist research theory allows for the aforementioned type of simultaneous, multi-tiered data analysis. Moreover, "post-positivism is oriented to confirmation and validation or falsification of hypotheses and to uncovering or surfacing relationships among variables" (Gephart, 1999, p. 5). The impetus for the current research is to establish the efficacy of HCC's INRW co-requisite model for two cohorts of students that should verify the model's purported general applicability for developmental students as a whole or expose shortcomings that may be inherent to the model's one-size-fits-all adoption and operationalization for incoming developmental education INRW students. With this stated and placed in a grounded theory framework, the post-positivist approach seems to offer the most salient method to analyze the intended data.

Grounded Theory

With an established qualitative paradigm and post-positivist theory interpretive framework, grounded theory research presents the best qualitative approach to employ as means to ascertain the requisite analysis to provide relevant data for the study. Grounded

theory is the idea that "positivism is oriented to testing and confirmation of general theories which take the form of well validated propositions which specify relations among well-defined and quantitatively measured variables" (Gephart, 1999, p. 7). Grounded theory attempts to extend explanation beyond descriptors and create a theoretical reason for a process or action (Creswell & Poth, 2018). One of major appeals of using this theory is that it is customizable to the study. In other words, it is generated by the data based on the process. To this end, Creswell and Poth assert that "grounded theory is a qualitative research design in which the inquirer generates a general explanation (a theory) of a process, an action, or an interaction shaped by the views of a large number of participants" (Creswell & Poth, 2018, p. 129). For the current research, it was imperative to root the analytical approach to the data from a point that allows for an objective examination of the co-requisite INRW models' processes based on participants. Referring to Creswell and Poth's definition, the "large number of participants" also prompts the use of grounded theory approach because of the readily available large amount of data on the subject matter within the institution due to ongoing efforts to improve persistence and completion rates (Creswell & Poth, 2018, p. 129). Therefore, grounded theory research is a logical method that can organize the wide-ranging and complex selected metrics for the study through axial coding in a clear and coherent manner.

Qualitative Research Paradigm

A qualitative research paradigm with a post-positivist interpretative framework that analyzes data through a grounded theory research lens presents a feasible method to examine the efficacy of the developmental education reforms for INRW as they pertain to African-American males and Hispanic males placed into the reading- and writing-based co-requisites at

HCC. Since qualitative research uses a naturalistic approach to understand phenomena in context-specific settings, it offers a richer and more robust opportunity to comprehend data from more of an applicability standpoint than a theoretical one (Hoepfl, 1997). When considering the various contexts associated with developmental education reforms, primarily co-requisites, contextual analysis from an unobtrusive, natural perspective may foster a better chance of gleaning a deeper understanding of occurrences leading to successful outcomes for the cohorts being studied. Moreover, the interpretive framing of the qualitative research in post-positivism lends itself to the process of inquiry and discovery from a broadening of the interpretation of data (Gephart, 1999). Gathering information from beyond the available variables allows for more generalizing of findings derived from study participants that can act as primers for further research efforts, which leads to approaching the noted current research from a grounded theory perspective. Since findings from grounded theory emerge from participants rather than pre-existing notions, the interdependent and derivative relationship of the multiple factors associated with the current subject matter suggest a very involved but revealing study.

SELECTION CRITERIA, SAMPLING, AND ETHICAL CONSIDERATIONS

When conducting qualitative research, selection criteria and sampling are integral aspects of the research process in that careful attention paid to the two areas of focus aids in decreasing the chance for any exercise of bias or tainting of the results that can invalidate the research. Selection criteria provide the variables by which the research yields its results. In other words, it determines the perimeters of the qualitative research process through its designation of acceptable participants based on predetermined factors or characteristics.

Northcote (2012) states, “Educational researchers who engage in qualitative research have suggested various sets of alternative criteria including: transferability, generalizability, ontological authenticity, reciprocity, dependability, confirmability, reflexivity, fittingness, vitality and, even, sacredness and goodness” (p. 99). Said alternative criteria can, therefore, assist in forming a suitable set of criteria for research conducted using the qualitative paradigm. Moreover, all direct and ancillary facets of sampling impact the possible derived “transferability, generalizability, ontological authenticity, reciprocity, dependability, confirmability, reflexivity, fittingness, vitality and, even, sacredness and goodness” of the research by detailing the theory or concept by which participants are coded for research purposes (Northcote, 2012, p. 99). As Bernard and Ryan (2010) note, “Eliminating bias—by taking the decision out of your hands—random selection ensures that whatever you find out about the sample can be generalized to the population” (p. 40). Thus, it is imperative to consider selection criteria and sample strategies to produce data that are in alignment with the qualitative paradigm and interpretative framework to study the effectiveness of developmental education reforms for selected homogenous groups at a large two-year, urban higher education institution: “It can be argued that for some types of qualitative research, case selection is not a matter for which principles can be laid down, since cases are simply `given' aspects of the research question” (Curtis et al., 2000, p. 1002). So, to establish a clear outline for selection criteria, sampling, and ethical considerations for the current research to examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading-based and writing-

based co-requisites at Houston Community College, participant selection, institutional access, and consent are to be discussed.

Participant Selection

Selection criteria (participant selection) was a major, if not the most significant, aspect of the qualitative research process for the current topic: "Qualitative research is exploratory by nature, qualitative researchers may not know how much data to gather in advance" (Baker & Edwards, 2012, pp. 4-5). So, determining an exact number of participants becomes a very involved and complicated task:

> Fugard and Potts describe a model for estimating sample size that takes into account four variables: (1) the prevalence of the theme (how often it appears); (2) the likelihood that people will actually talk about the theme; (3) how many times researchers want to see a unique instance of the theme; and (4) how sure you want be that you'll detect uncommon themes. (Fugard & Potts, 2015, as cited in Bernard & Ryan, 2010, pp. 43-44)

Taking Fugard and Potts' model into consideration, participant selection consisted of fewer than 60 African-American males and Hispanic males who had taken the INRW co-requisite course in Fall 2018: "Based on emerging evidence . . . 20-60 knowledgeable people are enough to uncover and understand core themes" (Bernard & Ryan, 2010, p. 41). However, some argue that sample size is not as critical to the heart of the purpose of qualitative research endeavors. Crouch and McKenzie (2006) assert that sample size is not an issue because qualitative research scrutinizes situational qualities. Therefore, "researchers use critical case studies to identify special individuals or groups who might provide insight for a larger population" (Bernard & Ryan, 2010, p. 51). Moreover, for the current research, the site criterion was a large, urban two-year higher education institution offering Integrated Reading and Writing co-requisite courses with a large, racially diverse developmental education student population. The selected site for

the research is Houston Community College (HCC). HCC is a Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) accredited public two-year higher education institution located in Houston, Texas (Houston Community College, 2017, p. ii.). It serves a nine-district service area for a population of 2,432,543 (Houston Community College, 2017, p. 7). HCC is comprised of a service area map of six physical colleges (Central College, Coleman College, Northeast College, Northwest College, Southeast College, and Southwest College) and a designated online college (Houston Community College, 2017, pp. 5-6). It offers associate degrees, technical education certificates, and workforce certificates for over 70 different programs (Houston Community College, 2017, p. ii.) Again, the participant selection criteria are African-American males and Hispanic males who enrolled into an INRW co-requisite course at Houston Community College during Fall 2018. Additionally, in Fall 2018, HCC initiated its co-requisite program per a state mandate, Texas House Bill 2223 (2017), as part of Texas' 60X30TX Plan. HB 2223 mandates that by the year 2021, 75% of all developmental education courses must be delivered in a co-requisite format. Since HCC is a Hispanic Serving Institution (HSI) with a large non-Hispanic minority student population, it serves as an ideal site due to its ready access to the selected groups, African-American males and Hispanic males. This ease of access to the noted groups further extends to methods for sampling available at HCC.

Sampling and Institutional Access

Determining the means of sampling and institutional access is also critical to fostering a balanced study. When sampling for qualitative research, several methods can be employed; however, purposive sampling is the perhaps one of the better ones for the chosen research topic. Again, as Bernard and Ryan (2010) emphasize, "In purposive sampling, or judgement

sampling, you decide the purpose you want informants to serve, and you go out and to find some" (p. 50). Thus, because participants are to be selected based on race, gender, and enrollment status, purposive sampling offers the most feasible means of sampling since "it involves identifying and selecting individuals or groups of individuals that are especially knowledgeable about or experienced with a phenomenon of interest" (Creswell & Clark, 2011, as cited in Palinkas et al., 2015, p. 2). Also, Patton (2002) stresses, "purposeful sampling is a technique widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources" (as cited in Palinkas et al., 2015, p. 534). Conversely, regarding institutional access, Houston Community College, as a large, centralized college system, contains several departments that can provide access to information on the targeted groups, African-American males and Hispanic males who enrolled in INRW co-requisite courses in Fall 2018. Among these departments are the Office of Institutional Research (OIR) and Office of Success and Completion. The OIR utilizes several tools to maintain data and code it accordingly for institutional and state reporting. Dashboard and Tableau (both data analytic software) are two of these tools where institutional data can be aggregated or disaggregated through faculty log-in credentials. The information in both databases is extensive, in-depth, and intuitively designed to produce charts through simple key-stroke commands. So, preliminary data access requires an IRB for external institutional uses, but no permission for internal access. Moreover, the Office of Success and Completion is responsible for maintaining records and operations for all HCC institutional academic initiatives and efforts, including Pathways to Success data. As a part of Pathways to Success data, information from focus groups conducted during the Spring 2019 on Fall 2018 INRW co-

requisite students was available. Said information, although not centered on the selected research topic, contained relevant data for the current research. The first step in gaining access to this research, following approval from the IRB, was to contact the Executive Director of the Office Success and Completion. Thereafter, the Executive Director could readily provide the necessary reports, case studies, and data.

CONSENT

Considering ethics by way of consent factors into the research process for this topic: "Embedded in qualitative research are the concepts of relationships and power between researchers and participants. The desire to participate in a research study depends upon a participant's willingness to share his or her experience" (Orb et al., 2001, p. 93). Researchers are responsible for ensuring that participants are well-informed about the purpose of the research and its possible risks. In the case of the current research, since the study involves developmental education classes, participants needed to clearly understand that their involvement could disclose to some extent that they have taken a developmental education course. Since some consider developmental education a stigma, participants should be made aware of the possible repercussions of study participation: "Researchers face ethical challenges in all stages of the study, from designing to reporting. These include anonymity, confidentiality, informed consent, researchers' potential impact on the participants and vice versa" (Sanjari et al., 2014, p. 1). Therefore, informed consent forms that plainly state the risks and benefits of the study were provided to all potential participants. Protection of participants through the informed consent process allows for more fluid interaction between the researcher and participant, which may enhance the effectiveness of the overall research process.

Participant selection, institutional access, and consent are integral to establish a clear understanding for selection criteria, sampling, and ethical considerations when proposing to examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading-based and writing-based co-requisites at Houston Community College: "The question of 'How many' is not exclusive to qualitative research, though its particular implications are" (Baker & Edwards, 2012, p. 4). Therefore, the current research included fewer than 60 African-American males and Hispanic males who enrolled into an INRW co-requisite course in Fall 2018 at HCC. In addition, access to necessary data was garnered using an IRB and connecting with the administrator of existing data in the OIR and Office of Success and Completion. Furthermore, following the granting of the IRB, using institutional software, query runs yielded the necessary baseline target population data sets for continued analysis, which took no more than a week. Finally, "some important ethical [consent] concerns that should be taken into account while carrying out qualitative research are: anonymity, confidentiality and informed consent" (Sanjari et al., 2014). Keeping the aforementioned in mind when conducting qualitative research and drafting an informed consent form can help to ensure that all derived data is unbiased and high quality.

DATA COLLECTION

When utilizing a qualitative paradigm for research, defining the purpose for the methods employed to gather information is essential to establish at the onset of a study: "What qualitative study seeks to convey is *why* people have thoughts and feelings that might affect the way they behave" (Sutton & Austin, 2015, p. 226). Although literature on the aforesaid

topic varies in its explanations of said purposes, two general concepts seem to emerge as common causations. These purposes are to explore phenomena through qualitative data analysis and to supplement existing qualitative data: “Qualitative work requires reflection on the part of researchers, both before and during the research process, as a way of providing context and understanding for readers” (Sutton & Austin, 2015, p. 226). Working from this point, it is also important to reflect on the inductive nature of qualitative research: “Whatever philosophical standpoint the researcher is taking and whatever the data collection method (e.g., focus group, one-to-one interviews), the process will involve the generation of large amounts of data” (Sutton & Austin, 2015, p. 227). In other words, data collection is an iterative process to foster clear theoretical framing through a multi-faceted lens of interpretation. To this end there are several approaches that can be employed, including an interpretative (hermeneutic) design. An interpretative design best suited the current research in studying the effectiveness of developmental education reforms for selected homogenous groups at a large two-year, urban higher education institution: “Interpretation of the data will depend on the theoretical standpoint taken by researchers” (Sutton & Austin, 2015, p. 227). Thus, the data collection methods to conduct such research and ensure triangulation of the data to yield unbiased findings are interviews and surveys, focus groups, and institutional research information. To better explain the collection methods to examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading-based and writing-based co-requisites at Houston Community College (HCC), an explanation of the reasoning for the selected methods of collection, elements and challenges associated with the selected methods

of collection, and protocols and researcher role in collection for the selected methods of collection follow accordingly.

Data Collection Methods

The appropriate methods to obtain the data for the current research were interviews and focus groups, surveys, and data from HCC's Office of Institutional Research, since said methods are applicable across approaches and best apply to the posed research questions. Interviews and focus groups are two of the more common methods of data collection used in qualitative research (Gill et al., 2008). Interviews can be formatted in many ways. However, Gill et al. assert that "there are three fundamental types of interviews: structured, semi-structured and unstructured" (p. 291). Structured interview questions are probably the better format to use with the chosen research perimeters: "They are relatively quick and easy to administer and may be of particular use if clarification of certain questions is required or if there are likely to literacy or numeracy problems with the respondents" (Gill et al., 2008, p. 291). Semi-structured and unstructured interviews, although useful under certain condition, may not be as effective as means to gather relevant data from a developmental education cohort with documented reading and writing issues. Moreover, as interviews are a great tool to garner individual data, focus groups are beneficial in forming a wider understanding of the issue or probing question(s). In general, they provide opportunities for group discussion on a chosen topic for research evaluation: "Focus groups are used for generating information on collective views, and the meanings that lie behind those views" (Gill et al., 2008, p. 293). Therefore, the cross-analysis of structured interviews and focus groups may present the opportunity to develop a more cogent sense and interpretation of the data.

Limitations and Challenges

Elements of data collection and foreseeable challenges associated with the selected methods of collection to obtain necessary data for research on the effectiveness of co-requisites for designated cohorts are important to acknowledge and understand in correlation to developing a macro-perspective for the study. The purpose for the research gives rise to the general adoption of methods and approaches, which, therefore, influences elements of data collection. For instance, prior to fully immersing into qualitative study, the aim, technique, and size of the research must be determined. Once established, the method(s) for data collection needs to be decided upon. When making said decision, it should be concluded based on the approach utilized during the actual data collection, such as a deductive approach or inductive approach. Thus, there is no singular set of elements to adhere to for qualitative data collection; however, there are steps to bear in mind during the data collection process. These steps can be generally termed as data organization, framework identification, data sorting, and data analysis. However, irrespective of the collection elements, challenges are sure to arise during the research process. Because a host of challenges may come about, one of the more likely deals with location, researcher fatigue, and duration of data collection: “Location is a critical component of the data collection process” (Rimando et al., 2015, p. 2029). HCC has 26 different campuses that offer the courses that were included in the research, so location challenges were the most often encountered with the current research. To organize a central location and time for all participants to meet can be an issue.

PROTOCOLS

Protocols for the research and researcher role were critical aspects of the current research that merited deep consideration when attempting to foster understanding of the selected research focus. Specifically, the components for the qualitative protocol that was exercised for this research were study location(s), data collection instrumentation, and time frame. Determining the study location(s) at the start of the research allows for more efficient planning for all other facets of the research. For example, the data collection instrument should include some degree of prompted questioning: "The use of a protocol helps assure that all observers are gathering the pertinent information and, with appropriate training, applying the same criteria in the evaluation" (Frechtling & Sharp, 1997). Furthermore, in accordance with Frechtling and Sharp (1997), the protocol should prompt the observer to:

- Describe the setting of the program delivery.
- Identify the people who participated.
- Describe the content of the intervention.
- Document the interactions.
- Describe and assess the quality of the delivery of the intervention.
- Be alert to the unanticipated events that might require refocusing one or more evaluation questions.

The time frame for the study must also be accounted for in the protocols to aid in establishing firm constraints for the analysis of the data. Otherwise, the time perimeters for the research may extend far beyond the realm of feasibility. In addition, all protocols are developed by the researcher: "The role of the researcher in qualitative research is to attempt to access the thoughts and feelings of study participants" (Sutton & Austin, 2015, p. 226). However, this task

may prove to be more difficult than it initially appears. Nevertheless, as Sutton and Austin (2015) stress, “the data are being collected, a primary responsibility of the researcher is to safeguard participants and their data” (p. 227). So, the researcher is responsible for maintaining the rigor and credibility of various aspects of the research by monitoring and reducing bias, developing competence in methods, collecting and analyzing data, and presenting findings (Sanjari et al., 2014). Thus, the researcher’s role in qualitative research is critical to access study participants’ thoughts and feelings (Sutton & Austin, 2015).

Reasoning for the selected methods of collection, elements and challenges associated with the selected methods of collection, and protocols and researcher role in collection for the selected methods of collection to examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading-based and writing-based co-requisites at Houston Community College (HCC) have been explored. Interviews and focus groups, surveys, and data from HCC’s Office of Institutional Research from the Fall 2018 semester were the appropriate methods for data collection due to the scale and scope of the current research because it was the first year of implementation of HB 2223 (2017). Specifically, interviews and focus groups offer the most salient data source to guide the study based on the varied dynamics of the research’s focus. The data contain student level data for gender, race, and academic performance. Elements and challenges with the data collection methods vary based on the adopted theory chosen to conduct the research. The aim, technique, and size of the research should be decided early on, which can prepare the researcher for possible challenges. Finally, protocols and researcher role in collection are critical to any study. The protocols set the

perimeters for the researcher to follow to explore the research topic. Therefore, the researcher's role is as primary overseer of all aspects of the research, including its integrity.

RIGOR, QUALITY, AND TRUSTWORTHINESS

The concepts of trustworthiness and rigor in qualitative research are somewhat obscure when juxtaposed with quantitative research's concepts of validity and reliability. The impetus of qualitative research seems to optimally operate from a point of deductive reasoning where individual phenomena are coded for general applicability. However, herein lies the main criticism, and arguably the main appeal, of the qualitative paradigm due to its dynamic operative perimeters. This, of course, is in stark contrast to the rigidity of the quantitative paradigm's scope of functionality of amassing and interpreting data: "Qualitative research is a diverse group of interpretative methods which aim to explore, understand and explain people's experiences using non-numerical data" (Hadi & Closs, 2016, p. 641). So, measures must be established to ensure the overall integrity of the qualitative process. To achieve said end, several methods can be employed; however, it is the culmination of data through these methods that eventually yields an unbiased interpretation of the collection of data sets based on the selected research subject. Furthermore, data from multiple sources, when analyzed through the proper theoretical lens or framing, help to mitigate the probability of data contamination. Better yet, it is more so the triangulation of data that acts as a leveling mechanism to filter homogenous information through an ideological sieve that produces heterogenous applications of the data: "Triangulation involves the careful reviewing of data collected through different methods in order to achieve a more accurate and valid estimate of qualitative results for a particular construct" (Oliver-Hoyo & Allen, 2006). It is the construct,

thus, that fully relies on the qualitative process to be of sound design and objectively formulated in such a way that guards against corruption of data via of questionable standards for research protocols, procedures, and methods of analysis. Therefore, to ensure that an objective examination of the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading-based and writing-based co-requisites at Houston Community College meets the muster for rigor, quality, and trustworthiness, a four-dimension criteria based on credibility, dependability, confirmability, and transferability to assess the research was employed, as noted in Table 1, adapted from Lincoln and Guba (1986).

RIGOR

In qualitative research, rigor can be ensured through focus on transferability and dependability: "Rigor is simply defined as the quality or state of being very exact, careful, or with strict precision or the quality of being thorough and accurate" (Cypress, 2017, p. 254). Although the term *rigor* can on the surface seem to be in contrast to the qualitative paradigm's framework of discovery or journey to explain phenomena, rigor, within itself, does not translate to rigidity; therefore, it can be exercised in qualitative research practices such as those shown in Table 1. Transferability refers to the degree to which results from qualitative research can be applied in a general fashion to different contexts. Purposive sampling is a method to aid in fostering data that is transferable. M. Q. Patton asserts several cases for purposive sampling, including extreme or deviant cases, intensity, maximum variation, homogenous, typical case, stratified purposeful, critical case, snowball or chain, criterion, theory-based or operational construct, confirming or disconfirming, opportunistic, random purposeful, politically important

cases, convenience, and combination or mixed purposeful (Patton, 1990). As evidenced by Table 1, for the current study, criterion is the adopted means of purposive sampling. Criterion-based purposive sampling, in general, uses cases that meet set criterion: “A pragmatic approach to assessing generalizability [transferability] for qualitative studies is to adopt same criteria for validity: That is, use of systematic sampling, triangulation and constant comparison, proper audit and documentation, and multi-dimensional theory” (Leung, 2015, p. 324). For example, in the referenced current research, study participants were selected from two homogenous cohorts. The two homogenous cohorts were selected based on predetermined metrics that offered clear means to analyze data in a comparative format with data on the noted cohorts from various other sources. Moreover, dependability, otherwise referred to as reliability, also attributes to maintaining rigor in qualitative research: “The essence of reliability for qualitative research lies with consistency” (Leung, 2015, p. 326). Consistency can be achieved through starkly different methods. However, Silverman (2010) asserts five distinct approaches to improve reliability [dependability]: refutational analysis, constant data comparison, comprehensive data use, inclusive of the deviant case, and use of tables. In the current research, Silverman’s approach was employed to enhance the qualitative research process, thereby, theoretically, enhancing the study’s dependability.

Table 1: Rigor Criteria, Purpose, Original Strategy, and Strategies Applied in Study

RIGOR CRITERIA	PURPOSE	ORIGINAL STRATEGY	STRATEGIES APPLIED IN STUDY
Credibility	To establish confidence that the results (from the perspective of the participants) are true, credible, and believable.	• Prolonged and varied engagement with each setting • Interviewing process and techniques • Establishing investigators' authority • Collection of referential adequacy materials • Peer debriefing	• Set a specified length of time to interview participants • Establish and test interview protocol via pilot interviews
Dependability	To ensure the findings of this qualitative inquiry are repeatable if the inquiry occurred within the same cohort of participants, coders and context.	• Rich description of the study methods • Establishing an audit trail • Stepwise replication of the data	• Prepare a detailed protocol for study • Detail track record of the data collection • Establish uniform coding system
Confirmability	To extend the confidence that the results would be confirmed or corroborated by other researchers.	• Reflexivity • Triangulation	• Implement reflexive journals • Apply triangulation techniques
Transferability	To extend the degree to which the results can be generalized or transferred to other contexts or settings.	• Purposeful sampling to form a nominated sample • Data saturation	• Establish and use purposive sampling techniques

Adapted from Lincoln and Guba (1986)

QUALITY

The quality of qualitative research can be guaranteed through the confirmability criteria: "Quality concerns play a central role throughout all steps of the research process in qualitative

methods, from the inception of a research question and data collection, to the analysis and interpretation of research findings" (Bergman & Coxon, 2005, p. 1). Determining quality, therefore, is an integral component of qualitative research. In fact, the merit of the qualitative research, arguably, roots itself in the ideal of quality. Nevertheless, according to Hadi and Closs (2016), "The issue of judging the quality in qualitative research has been one of the most debated topics among methodologists and until recently there has been little consensus on what constitutes a good and trustworthy qualitative study" (p. 641). Yet, the criterion of confirmability as proposed by Lincoln and Guba (1986) in Table 1 offers a means to coherently certify quality when using qualitative research practices. Confirmability "refers to the quality of the results produced by an inquiry in terms of how well they are supported by informants (members) who are involved in the study and by events that are independent of the inquirer" ("Confirmability," n.d.). Two techniques to establish confirmability are audit trails and reflexivity. An audit trail is the detail of the processes of data collection, data analysis, and interpretation of the data that the research employs: "The *confirmability audit* can be conducted at the same time as the dependability audit and the auditor asks if the data and interpretations made by the inquirer are supported by material in the audit trail, are internally coherent, and represent more than figments of the [inquirer's] imagination" (Guba & Lincoln, 1989, p. 243). On the other hand, reflexivity refers to the researcher's attitude adopted while collecting and analyzing data. It pertains to the "analytic attention to the researcher's role in qualitative research" (Gouldner, 1971, p. 16, as cited in Dowling, 2006). So, the research should remain actively involved in the research process. In other words, the researcher must be constantly aware of his or her connection to the world that is being studied: "The key to

reflexivity is to make the relationship between and the influence of the researcher and the participants explicit" (Jootun et al., 2009, p. 45). Thus, for the current research, quality was reinforced through confirmability as determined via an audit trail and reflexivity.

Trustworthiness

Trustworthiness of qualitative research can be safeguarded by using the credibility, transferability, confirmability, and dependability criteria as noted in Table 1. Lincoln and Guba (1986) assert that trustworthiness involves establishing all noted "rigour criteria" from Table 1. Credibility provides internal validity (Lincoln & Guba, 1986). "[It] establishes whether the research findings represent plausible information drawn from the participants' original data and is a correct interpretation of the participants' original views" (Korstjens & Moser, 2018, p. 121). Transferability ensures external validity (Lincoln & Guba, 1986). As Korstjens and Moser (2018) describe, "The researcher facilitates the transferability judgment by a potential user through thick description" (p. 121). Dependability equates to reliability (Lincoln & Guba, 1986), and "dependability involves participants' evaluation of the findings, interpretation and recommendations of the study such that all are supported by the data as received from participants of the study" (Korstjens & Moser, 2018, p. 121). Confirmability dictates objectivity (Lincoln & Guba, 1986): "[It] is concerned with establishing that data and interpretations of the findings are not figments of the inquirer's imagination, but clearly derived from the data" (Korstjens & Moser, 2018, p. 121). Therefore, each criterion when combined coalesces into substantive data that prompts a sense of trust in results based on the safeguards exercised throughout the qualitative research process. For the current research, said criteria also temper

data analysis in a manner that feasibly melds multiple sets of data through a filter that promises uniformity in data treatment and trustworthiness of research findings.

Rigor, quality, and trustworthiness can be maintained in a qualitative paradigm that attempts to exam the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading-based and writing-based co-requisites at Houston Community College by using a four-dimension criteria based on credibility, dependability, confirmability, and transferability to assess the research was employed as noted in Table 1, adapted from Lincoln and Guba (1986). Transferability and dependability are two criteria that work to establish rigor. Purposive sampling and Silverman's (2010) approaches to increase dependability were the methods used with the current research to maintain rigor. Quality in the qualitative research process is to be achieved through confirmability. Audit trails and reflexivity were the means employed in the current research to maintain quality. Finally, trustworthiness was achieved through the use of all four of Lincoln and Guba's rigour criteria (credibility, dependability, confirmability, and transferability), as presented in Table 1. Careful attention and specifically established protocol associated with each criteria yielded findings that meet all professional and academic standards of scrutiny.

DATA ANALYSIS

For qualitative research, clear methods to analyze data are requisite to ensure that findings are transferable and make meaningful additions to the academy: "Qualitative research is a generic term that refers to a group of methods, and ways of collecting and analyzing data that are interpretative or explanatory in nature and focus on meaning" (Noble & Smith, 2014,

p. 1). The difference in approach between quantitative research and qualitative research is that the latter utilizes non-numeric means to assess certain phenomena and extract general applicable relevance to broader contexts. Analyzing data within a qualitative framing seeks to reconstruct gathered data sets in a way so as to provide comprehensible interpretations of participant accounts through a trustworthy, quality, and rigorous lens: "Although qualitative data analysis is inductive and focuses on meaning, approaches in analyzing data are diverse with different purposes and ontological (concerned with the nature of being) and epistemological (knowledge and understanding) underpinnings" (Noble & Smith, 2014, p. 1). In fact, there are several methods that can be employed for qualitative data analysis proposed in the literature, including hermeneutical analysis, phenomenology analysis, analytic induction, matrix analysis, and typology (Dudovskly, n.d.). Moreover, researchers offer varying categorizations of a multitude of approaches for qualitative data analysis. Noble and Smith (2014) assert that

> approaches can be divided into four broad groups: quasi-statistical approaches such as content analysis; the use of frameworks or matrices such as a framework approach and thematic analysis; interpretative approaches that include interpretative phenomenological analysis and grounded theory; and sociolinguistic approaches such as discourse analysis and conversation analysis. (p. 1)

However, to examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading-based and writing-based co-requisites at Houston Community College, frameworks, phenomenological analysis, and discourse analysis offer clear and coherent means to objectively and holistically translate and filter data sets to present clean unbiased results for intended study.

Data Analysis Framework

Using a data analysis framework to examine how developmental education reforms of INRW impact two homogenous cohorts allows for succinct and coherent data interpretation: "The Framework Method sits within a broad family of analysis methods often termed thematic analysis or qualitative content analysis" (Gale et al., 2013, p. 2). It is rooted in a matrix design and is comprised of "five interconnected stages that provide clear guidance on data analysis, from initial collection and management through to the development of explanatory accounts" (Hackett & Strickland, 2018, p. 3). Also, embedded in this method is a thematic framing that is to be formulated around the study's topic (Hackett & Strickland, 2018). By using this method, the researcher is able to "label, classify, and organize data in relation to main themes, concepts and categories" (Hackett & Strickland, 2018, p. 2). The labeling, classifying, and "organizing" of data using a theme, such as homogeneity for the current research, provide structure for otherwise seemingly unrelated data points. Moreover, the adaptability of frameworks offers immediate customization of data for correlative purpose within the scope and scale of the study. In addition, the "framework [approach] is not aligned to any particular epistemological, philosophical or theoretical approach, and can be used with a range of qualitative approaches" (Gale et al., 2013, p. 3). Thus, the audit trail developed throughout the qualitative research process allows for further data aggregations. An example of said aggregated methodology is coding to inform the qualitative, analytic research process. According to Gale et al. (2013), "The strength of the framework is that coding and charting enable the researcher to look down at emerging themes (thematic analysis) and look across cases (case analysis), which can help to identify patterns" (p. 6).

PHENOMENOLOGICAL ANALYSIS

Phenomenological analysis also provides a sound interpretative method to extract understanding of data garnered from the current research:

> The aim of interpretative phenomenological analysis (IPA) is to explore in detail how participants are making sense of their personal and social world, and the main currency for an IPA study is the meanings particular experiences, events, states hold for participants. (Yardley & Smith, 2008, p. 53)

For the current research, information collected during interviews can benefit from a phenomenological analysis, especially taking into consideration the performance of the two cohorts of study for the INRW co-requisite courses in comparison to non-study cohorts also in INRW co-requisite courses: "Thus, consistent with its phenomenological origins, IPA is concerned with trying to understand what it is like, from the point of view of the participants, to take their side" (Yardley & Smith, 2008, p. 53). In other words, making sense of the data from multiple perspectives presents a more holistic depiction of the phenomena:

> IPA's emphasis on sense-making by both participant and researcher means that it can be described as having cognition as a central analytic concern, and this suggests an interesting theoretical alliance with the cognitive paradigm that is dominant in contemporary psychology. (Yardley & Smith, 2008, p. 54)

Thus, the phenomenological analysis dual lens approach mitigates the probability of skewing the data due in part to its adaptive quality in its construction:

> Utilizing the IPA approach in a qualitative research study reiterates the fact that its main objective and essence are to explore the "lived experiences" of the research participants and allow them to narrate the research findings through their "lived experiences." (Alase, 2017, p. 9)

Therefore, phenomenological analysis was an ideal means to analyze data for the current research in the aggregated so as to ensure generalized applicability.

Discourse Analysis

Discourse analysis extends implementation structure measures that assist in the facilitation for the exploration of the effectiveness of development education reforms for INRW on selected populations: “Discourse analysis is a broad term used to analyse written and spoken text of people’s discourse (text and talk) in everyday social context” (Shanthi et al., 2017, p. 163). For the current study, a table that identifies headers in columns as “Domain, Phenomena, Issues and Methods” was developed to aid in data analysis (Shanthi et al., 2017). In said table, using the identified headers, coding was the initial method of analysis employed for the study: “A code is a researcher-generated construct that symbolizes and thus attributes interpreted meaning to each individual datum for later purpose of pattern detection, categorization, theory building, and other analytic processes” (Saldaña, 2015, p. 4). Coding allows for interpretation of the data within the context of the study; therefore, findings become transferable as opposed isolated in their scope. So, this method of data analysis accounts for an expanded and adaptive analytical framing that lends itself to clear and unbiased data translation. With the current research, this aspect of discourse analysis becomes even more relevant given the complexity associated with the selected cohorts’ performances and vocalized interpretations of their academic conditions.

Frameworks, phenomenological analysis, and discourse analysis were the noted methods used to examine the efficacy of developmental education reforms for Integrated Reading and Writing (INRW) on African-American males and Hispanic males placed into reading-based and writing-based co-requisites at Houston Community College that could be presented as graphic organizers, such as tables and charts, along with detailed explanations of

the interpretation process in prose for the required qualitative data analysis: “The interconnected stages within the framework approach explicitly describe the processes that guide the systematic analysis of data from the development of descriptive to explanatory accounts” (Smith & Firth, 2011, p. 2). The insurance in using a thematic framework enables the researcher to probe the underlying questions for the current study while maintaining transparency of qualitative analytic study procedures. In conjunction with the thematic framework, a phenomenological analysis rooted in the same theme gives rise to consistency in data analysis via triangulation. Transcription grouped by themes within a tabular framing may be a requisite means of data analysis to fully comprehend the breadth of the phenomena and present a clean method of displaying the juxtaposition of data sets. In addition, discourse analysis studies naturally occurring language in social contexts. For the current study, scrutinizing coded transcriptions from participants through the filter of language analysis offered the third leg of inquiry for triangulation for interpreting the data. Thus, the framework acted as the basis for a table with designated headings that were transcribed for a phenomenological analysis and eventually thematically coded for a discourse analysis. All three approaches when aggregated ensure data triangulation and fair analysis.

CONCLUSION

Data from a preliminary 2019 study of Houston Community College’s co-requisite implementation of Integrated Reading and Writing (INRW) was re-examined based upon gender, race, and performance indicators derived from the Fall 2018 data for African-American males and Hispanic males enrolled in an INRW co-requisite. A qualitative research paradigm along with post-positivism theory and grounded theory were used as the paradigm,

methodology, and framework for the study. The selection criteria, sampling, and ethical considerations adhered to strict and stringent guide principles to ensure the integrity of the results. Furthermore, data collection was conducted via interviews, focus groups, surveys, and data from Houston Community College's Office of Institutional Research. Although there are noted limitations and challenges, the established protocols were designed to mitigate the impact of foreseeable barriers. Rigor, quality, and trustworthiness were maintained through the use of an adaptation of Lincoln and Guba's (1986) four-dimension criteria model.

CHAPTER FOUR: FINDINGS AND ANALYSIS

INTRODUCTION

The purpose of the research is to examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading- and writing based co-requisites at Houston Community College.

The main objective was to answers the following research questions:

- How are students placed into reading and writing developmental education co-requisites?
- What are the successful completion rates for African-American males and Hispanic males placed in INRW co-requisites?
- What are the retention rates for African-American males and Hispanic males for subsequent semester enrollment following co-requisite placement?

This chapter presents the findings from a re-examination of a 2019 study of Houston Community College's co-requisite implementation in the areas of Developmental Math, Intensive English (ESOL), and Integrated Reading and Writing (INRW). The re-examination focuses solely on INRW data as disaggregated by gender, race, and performance indicators derived from the 2019 study with specific emphasis on African-American males and Hispanic males enrolled in an INRW co-requisite. Supplemental data are provided based upon organizational public information presented during Houston Community College Board of Trustees meetings following the time frame of the 2019 study. The data noted in Figures 1–4

reflect this information, which is germane to the analysis of the current study. The remainder of the chapter is organized as:

- Description of HCC's Co-requisite Program
- Description of the 2019 Study
- Description of the Participants
- Academic Performance
- Ethnicity
- Retention
- Presentation and Analysis of Findings

DESCRIPTION OF HCC'S CO-REQUISITE PROGRAM

Texas HB 2223 relates to developmental course offerings and developmental course placement at public institutions of higher education for Reading and Writing or Math remediation. Texas HB 2223 requires 75% of all developmental course offerings to be delivered in a co-requisite format by Fall 2020, starting in Fall 2018. The initial minimum cohort of students that were to be placed into the co-requisite model was 25% with annual incremental increases of 25% each subsequent year (50% by Fall 2019 and 75% by Fall 2020) until the mandated 75% threshold is met at each respective public institution of higher education throughout the state. Qualifying students, as determined by each institution within the guidelines as specified by the Texas Higher Education Coordinating Board, who placed into co-requisites must be concurrently enrolled into a college-level math intensive gateway course (i.e., college-level Algebra) or a college-level reading-intensive and/or writing-intensive gateway course (i.e., college-level English). Furthermore, Texas HB 2223 requires public institutions of

higher education to report their enrollment of students in their co-requisite programs accordingly. The impetus of Texas HB 2223 is to improve persistence and completion of underprepared students as designated by placement assessments through developmental education acceleration reform via the co-requisite model.

In response to Texas HB 2223, Houston Community College (HCC) assembled the HCC Co-requisite Acceleration Task Force to develop the HCC Co-requisite Acceleration Program in Spring 2018. In accordance with the HCC Co-requisite Acceleration Task Force recommendations, students determined to be underprepared for Reading and Writing were to be enrolled in a 16-week formatted college-level English course (English 1301) paired with an INRW support course (INRW 0300) or an Intensive English support course (ESOL 0370), depending upon their degree plan. Underprepared math students were enrolled into a stand-alone developmental math course (MATH 0309, 0310, or 0314) paired with its corresponding college-level math course (Math 1314, 1324, 1332, or 1342). Course placement was determined by degree plan and Texas State Initiative Assessment (TSIA) scores.

The HCC Co-requisite Acceleration Program's model adopted for English/INRW/ESOL is an adaption of the Accelerated Learning Program (ALP) model. In HCC's adaption of the model, students are concurrently enrolled in a college-level English course (English 1301) and a 3-hour support course (INRW 0300 or ESOL 0300). The 3-hour support course provides on-demand support for work in the college-level English course. The math model, on the other hand, aligned existing developmental courses to specific math pathways to deliver on-demand support. In addition, HCC Co-requisite Acceleration Task Force develops a set of protocols to guide co-requisite enrollment into the HCC Co-requisite Acceleration Program (see Appendix A).

DESCRIPTION OF THE 2019 STUDY

The framing and data for the study are derived from a re-examination of a 2019 study of HCC's co-requisite model's implementation. The 2019 study's goal was to act as a formative assessment to inform further development of HCC's co-requisite model. The 2019 study consisted of Student Focus Groups and Faculty Focus Groups. The Student Focus Groups were conducted through the recruitment of entire class groupings. The Math Student Focus Group was separated based upon the multiple math pathways as determined by degree plans, whereas the English/INRW Student Focus Group was divided into two sets—(same [one] instructor model and different [two] instructor model). The Faculty Focus Groups were conducted through elective recruitment of discipline-specific groups that meet together (Developmental Math/ College-Level Math or INRW/ English). Since the focus of the current study emphasizes student data, subsequent mention of Faculty Focus Group responses or other faculty-driven data will be provided or discussed only as ancillary information when necessary for student data contextualized analysis.

The 2019 study employed a process of one interviewer and two note takers assigned per class during the Focus Groups. Consent was obtained prior to the Focus Groups, where student participation was optional. Faculty left the room during Student Focus Groups, and students were assured anonymity. The note takers took count of gender and estimates of ethnic groups; additional demographic data were provided by HCC. There was no incentive provided for participation. Tape recording was arranged for each of the Student Focus Group sessions. There was a total of 12 classes participating:

- 6 Math (different courses used to represent all pathways)

- 6 INRW and ESOL (4 INRW—2 with the same [one] instructor model and 2 with the different [two] instructors model—and 2 ESOL)

Courses were selected with different meeting patterns, including weekend. The Student Focus Groups lasted 45 minutes of the selected course meeting time. The questions used for the Student Focus Groups were phrased so as to obtain qualitative information from students. The 2019 study's English/INRW questions were as follows:

a. This semester students were given the opportunity to take INRW at the same time as ENGL 1301. In the past, students have had to complete INRW before enrolling in 1301. What was your impression when you were enrolled in both courses?

b. What did you find beneficial about taking both courses together?

c. What did you dislike about taking the two courses together?

d. If you were talking to a student who had enrolled in the courses together next semester, what advice would you give them to help them be successful?

e. For students taught by two different instructors: What advice do you have for the instructors for teaching the course?

f. Tell about the support you got this semester. What supports were made available to you? What didn't you use?

DESCRIPTION OF THE PARTICIPANTS

Since the scope of the 2019 study was wider than the current study, participation was not restricted to any certain perimeters based on gender, age, or ethnicity. The only requirement was enrollment in a co-requisite course that fit the aforementioned criteria as noted in the Description of the 2019 Study section. Moreover, since the focus of the current study is limited to college-level English and INRW, only information pertaining to this co-requisite from the 2019 study shall be discussed and analyzed. To this end, participants for the college-level English and INRW co-requisite enrollment were 1,343 students, comprised of

males and females from ethnic groups described as Other, Asian, Black, Hispanic, and White (see Appendix B). Of the 1,343 students enrolled in the college-level English and INRW co-requisite during the period of 2019 study, as noted in Appendix B, Black and Hispanic students represented the predominantly enrolled ethnic groups. In fact, Black and Hispanic student enrollment made up 83.6% (1,123) of the total number of students enrolled in the college-level English and INRW co-requisite. Furthermore, of the 1,123 of Black and Hispanic students, 33.9% (381) were Black males (149) or Hispanic males (232).

There were 15 participants in the 2019 study for the college-level English and INRW Student Focus Groups and interviews. Moreover, since identifying data were redacted, there is no way to determine the ethnicity or gender of the participant responses. Still, extrapolation of the data groups' information, nevertheless, provides insight as to possible correlative study participant composition, which provides the premise in the Presentation of Findings section.

ACADEMIC SUCCESS PERFORMANCE

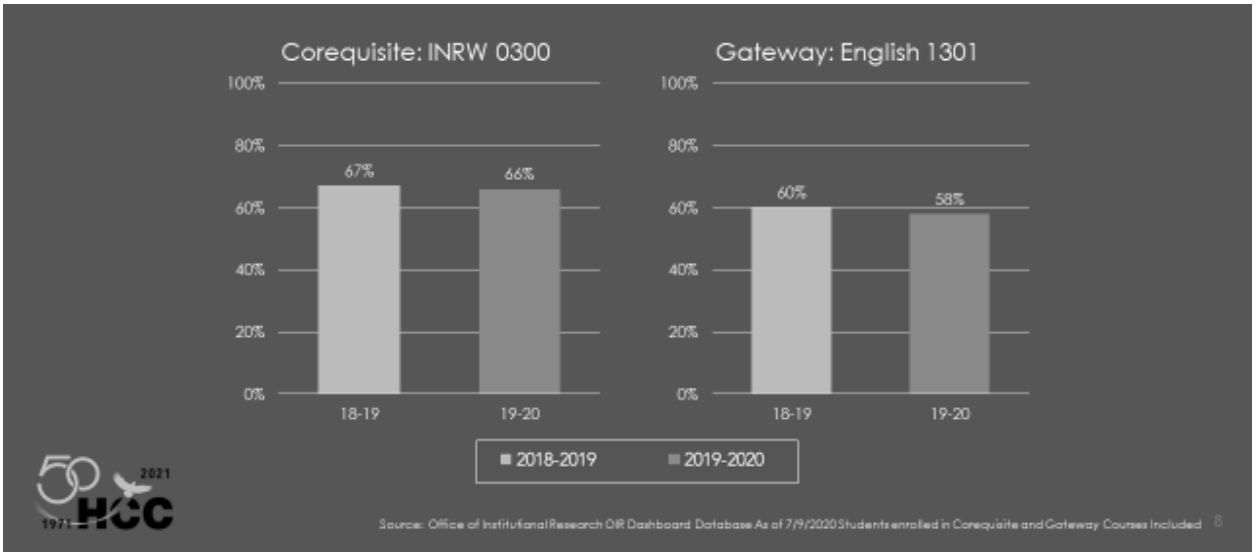
For the purposes of this study, grades of "C" or better constitute satisfactory course completion. A comprehensive description of grade definitions for Houston Community College can be accessed in Houston Community College's Student Handbook (see Appendix C).

Figure 1 shows the comparative success of the co-requisite course (INRW 0300) and the gateway course (English 1301) for 2018-2019 and 2019-2020. Figure 1 presents data to be examined as percentages whereas grades of "C" or better are considered passing (successful).

- Students in INRW 0300 had a successful completion rate of 67% for 2018-2019.
- Students in INRW 0300 had a successful completion rate of 66% for 2019-2020.

- Students in INRW 0300 who were co-enrolled in an ENGL 1301 (co-requisite students) had a successful completion rate of 63% for 2018-2019.
- Students in INRW 0300 who were co-enrolled in an ENGL 1301 (co-requisite students) had a successful completion rate of 58% for 2019-2020.

Figure 1. INRW Co-requisite and Gateway Course Success



Source: Perez & O'Brien, 2020a

Table 2 shows the enrollment and success rate for students enrolled in the co-requisite course (INRW 0300) and the gateway course (English 1301) co-requisite, and the gateway course (English 1301) total enrollment. Table 2 presents data numerically and as percentages whereas grades of "C" or better are considered passing (successful).

- Students in INRW 0300 had a successful completion number of 968 (72%) for Fall 2018.
- Students in INRW 0300 had a successful completion number of 482 (60%) for Spring 2019.
- Students in INRW 0300 had a successful completion number of 815 (74%) for Fall 2019.

- Students in INRW 0300 had a successful completion number of 480 (56%) for Spring 2020.
- Students in INRW 0300 who were co-enrolled in an ENGL 1301 (co-requisite students) had a successful completion number of 846 (63%) for Fall 2018.
- Students in INRW 0300 who were co-enrolled in an ENGL 1301 (co-requisite students) had a successful completion number of 433 (54%) for Spring 2019.
- Students in INRW 0300 who were co-enrolled in an ENGL 1301 (co-requisite students) had a successful completion number of 694 (63%) for Fall 2019.
- Students in INRW 0300 who were co-enrolled in an ENGL 1301 (co-requisite students) had a successful completion number of 433 (51%) for Spring 2020.
- Students in ENGL 1301 (All HCC) had a successful completion number of 4,827 (70%) for Fall 2018.
- Students in ENGL 1301 (All HCC) had a successful completion number of 2,617 (68%) for Spring 2019.
- Students in ENGL 1301 (All HCC) had a successful completion number of 4,048 (63%) for Fall 2019.
- Students in ENGL 1301 (All HCC) had a successful completion number of 2,197 (59%) for Spring 2020.

Table 2: INRW 0300, ENGL 1301 (Co-Requisite Students) and ENGL 1301 (All HCC)

		Fall			Spring	
	Academic Year	Enrollment	Success rate		Enrollment	Success rate
INRW 0300	2018-2019	1344	72%		804	60%
	2019-2020	1,102	74%		858	56%
ENGL 1301 (Co-requisite Students)	2018-2019	1,340	63%		801	54%
	2019-2020	1,102	63%		849	51%
ENGL 1301 (All HCC)	2018-2019	6,896	70%		3,849	68%
	2019-2020	6,425	63%		3,724	59%

Source: Houston Community College, 2020

ETHNICITY

Ethnicity for the data refers to five groups: Asian, African-American (Black), Hispanic, Caucasian, and Other. Table 3 and Table 4 disaggregate successful completion by ethnicity using these groups for INRW 0300 and English 1301 co-requisites for 2018-2019 and 2019-2020.

Table 3 shows disaggregation by ethnicity for INRW 0300 of the co-requisites for 2018-2019 and 2019-2020. Variations in count between Table 3 and Table 4 indicate enrollment differences based upon withdrawals or drops.

- Asian students in INRW 0300 had a successful completion rate of 78% for 2018-2019.
- Asian students in INRW 0300 had a successful completion rate of 81% for 2019-2020.
- African-American (Black) students in INRW 0300 had a successful completion rate of 60% for 2018-2019.
- African-American (Black) students in INRW 0300 had a successful completion rate of 57% for 2019-2020.
- Hispanic students in INRW 0300 had a successful completion rate of 72% for 2018-2019.
- Hispanic students in INRW 0300 had a successful completion rate of 71% for 2019-2020.
- Caucasian students in INRW 0300 had a successful completion rate of 69% for 2018-2019.
- Caucasian students in INRW 0300 had a successful completion rate of 74% for 2019-2020.
- Other students in INRW 0300 had a successful completion rate of 64% for 2018-2019.
- Other students in INRW 0300 had a successful completion rate of 68% for 2019-2020.

Table 3: INRW 0300 by Race/Ethnicity

		Successful		Unsuccessful		Grand total	
INRW 0300	Ethnic Grp	Count	Percent	Count	Percent	Count	Percent
18-19	Asian	109	78%	30	22%	139	100%
19-20	Asian	99	81%	23	19%	122	100%
18-19	African American	508	60%	337	40%	845	100%
19-20	African American	471	57%	350	43%	821	100%
18-19	Hispanic	702	72%	273	28%	975	100%
19-20	Hispanic	606	71%	243	29%	849	100%
18-19	Caucasian	75	69%	34	31%	109	100%
19-20	Caucasian	76	74%	27	26%	103	100%
18-19	Other	51	64%	29	36%	80	100%
19-20	Other	44	68%	21	32%	65	100%

Source: Houston Community College, 2020

Table 4 shows disaggregation by ethnicity for English 1301 of the co-requisites for 2018 - 2019.

- Asian students in ENGL 1301 had a successful completion rate of 76% for 2018-2019.
- Asian students in ENGL 1301 had a successful completion rate of 76% for 2019-2020.
- African-American (Black) students in ENGL 1301 had a successful completion rate of 52% for 2018-2019.
- African-American (Black) students in ENGL 1301 had a successful completion rate of 49% for 2019-2020.

- Hispanic students in ENGL 1301 had a successful completion rate of 64% for 2018-2019.
- Hispanic students in ENGL 1301 had a successful completion rate of 62% for 2019-2020.
- Caucasian students in ENGL 1301 had a successful completion rate of 63% for 2018-2019.
- Caucasian students in ENGL 1301 had a successful completion rate of 66% for 2019-2020.
- Other students in ENGL 1301 had a successful completion rate of 56% for 2018-2019.
- Other students in ENGL 1301 had a successful completion rate of 55% for 2019-2020.

Table 4: ENGL 1301 by Race/ Ethnicity

		SUCCESSFUL		UNSUCCESSFUL		GRAND TOTAL	
ENGL 1301	ETHNIC GRP	COUNT	PERCENT	COUNT	PERCENT	COUNT	PERCENT
18-19	Asian	105	76%	34	24%	139	100%
19-20	Asian	93	76%	29	24%	122	100%
18-19	African American	434	52%	405	48%	839	100%
19-20	African American	403	49%	413	51%	816	100%
18-19	Hispanic	625	64%	349	36%	974	100%
19-20	Hispanic	525	62%	322	38%	847	100%
18-19	Caucasian	69	63%	40	37%	109	100%
19-20	Caucasian	67	66%	35	34%	102	100%

Source: Houston Community College, 2020

RETENTION

There were 6,826 students enrolled in co-requisite courses in Fall 2018 of which 4,984 students re-enrolled in Spring 2019.

Fall 2019 to Spring 2020 2019 retention for the number of students enrolled in co-requisite developmental courses at HCC was 76%. This percentage includes all co-requisite developmental course students, not exclusively those enrolled into an INRW and English 1301 co-requisite. There were 3,760 students enrolled in co-requisite courses in Fall 2019 of which 2,856 students re-enrolled in Spring 2020.

Fall 2018 retention for students enrolled in the INRW 0300 portion of the INRW 0300 and ENGL 1301 co-requisite was 91.9%, and Spring 2019 retention for students enrolled in the INRW 0300 portion of the INRW 0300 and ENGL 1301 co-requisite was 83.3% (see Appendix D).

PRESENTATION OF FINDINGS

To obtain data for the answer to the first research question regarding placement protocols of students into reading and writing developmental co-requisites, the researcher requested data from Houston Community College (HCC) on its process, which is included in Appendix A. Further insight and clarification were obtained through HCC's Co-Requisite Remediation Final Recommendation Report. The information from the first question enabled the researcher to probe further into the second and third research questions pertaining to successful completion rates and persistence rates for African-American (Black) males and Hispanic males placed into INRW co-requisites based upon a 2019 study of Houston Community College's co-requisite implementation.

The researcher acknowledged that developmental education reform and co-requisite design are expansive topics whereas a re-examination of the responses from participants in the 2019 study of Houston Community College's co-requisite implementation would provide deeper insight into participants' perceptions of developmental education reform and co-requisite design for African-American males and Hispanic males. Therefore, reviewing the Student Focus Group's questions from the 2019 study allowed for the understanding that they were designed to gather descriptive data that could allow for further nuancing, disaggregation, and interpretation and extrapolation of responses by ethnicity and gender. Therefore, the questions for the current study placed emphasis on two ethnic groups and one gender, African-American (Black) males and Hispanic males. The construction of the current study's questions reflect several theories associated with developmental education that were discussed in the literature review section, including Critical Race Theory, Social Interdependence Theory, Adult Learning Theory, Educational Equity Theory, and Validation Theory (Boocock & Predow, 1979; Delgado & Stefancic, 2017; Johnson, 2003; Linares & Muñoz, 2011; Merriam, 2018). These questions allow for a qualitative filtering and categorical grouping for analysis.

In alignment with qualitative research practices, the researcher analyzed the 2019 study's Student Focus Group data through a comparative lens with additional statistical data provided by Houston Community College. The re-examination of the 2019 Student Focus Group data, therefore, allowed for a comparative analysis of responses and subsequent success data for correlative observational evaluations.

The researcher reviewed the transcription of the 2019 study's Student Focus Group's interviews for all 15 participants. Participant responses were then grouped to allow for

recognition of the use of similar words or phrases. Descriptive coding was then used to develop categories for responses. While analyzing the descriptive codes, the researcher noted the recurrent mention of common terms. Based upon analysis of these common terms, three themes emerged:

- Theme 1: Relevancy of purpose is critical to co-requisite courses.
- Theme 2: Engagement and interactivity are key to the co-requisite learning environment.
- Theme 3: Connectivity plays a significant role in co-requisite courses.

Each of the three themes is described and discussed below.

THEME 1

Relevancy of purpose is critical to co-requisite courses.

In the INRW Student Focus Group interviews, participants noted that they needed clarity as to the relevancy of co-enrollment. In describing their views, participants expressed a level of ambiguity as to whether the support course (INRW 0300) provided credit. Some participants used phrases such as “not at college reading level” and “we don’t get credit” to convey their lack of understanding of the support course’s purpose. Other participants seemed have a more concrete understanding of the course’s purpose. These participants used phrases such as “it is kind of a good thing” and “more of a benefit for us” to express their understanding of the support course’s purpose.

One participant described the support course’s instructor as an extra tutor. Participants clearly grasped the notion that the content of the support course was to reinforce the learning outcomes of their college-level English course (English 1301). One participant referred to the

support course as “one on one tutoring.” Another participant stated, “She [the instructor] helped us with the thought process behind writing. The brainstorming—you know how to flesh that out, narrowing down all the detail. How to put it in order.”

Another student added that “the College is just helping you by having you take this class, getting you prepared for your other classes.”

Some participants also found relevance in being given extended course time to complete assignments and contextualization of instruction within their support course. During the Student Focus Groups, participants expressed their appreciation of the ability to receive on demand support in real time. They valued instructors’ inclusion of stories to enhance content delivery and make it relevant to real-world applications and experiences. One participant explained:

> If you didn’t finish something, you had a little bit more time to finish up in the other class. And, then, [the instructor] would explain how to finish it. [The instructor] will interact with you—share personal stories that aren’t too personal.

Another student expressed, “But they are personal enough to where you can connect with [the instructor].”

Participants spoke of the time saved by enrolling in co-requisite courses. They also noted an appreciation of not having to travel from one classroom to another for their support courses. Two students described their co-requisite experiences as “less time consuming.” Another student said, “You don’t have to move separate classes for three hours.”

THEME 2

Engagement and interactivity are key to the co-requisite learning environment.

Engagement and interactivity were indicated as key factors that inform performance within the co-requisite courses. Participants emphasized that agency and interactions promoted a conducive learning environment. One participant described the co-requisite course as “fun.” Another participant mentioned that “[the instructor] interact[s] with you [and] shares personal stories” to decrease stress and foster the development of a community of inquiry. Through the development of a community of inquiry that is engaging, students felt encouraged to interact more with one another. A participant stated, “I feel like we get to know [our] fellow students better instead of, like, in [other] classes where you are in there for an hour or 20 minutes and then you leave.”

Participants indicated that assistance in various ways and through various means was helpful. A participant said that the instructor “assists” in writing. The idea of pervasive assistance was not isolated to a single mode of delivery; however, the contextualization of the assistance to the course seemed to be of significance in relation to engagement and interactivity. One participant noted that “[the instructor] give[s] you [the instructor’s] way of [an] outline.” Another participant added that “[the instructor] shows a lot of examples on the projector.”

Student-to-student engagement was mentioned by several participants. The practice of peer course support as part of shared co-requisite experience was also stated pertaining to the alignment of the support course and the college-level course. One participant said that “if [you] learn something in [the support course] that someone in the [college-level course] does not understand, try having another student explain it a different way.” Another participant interjected that “what [students] might learn in the [support course] can also reflect in the

[college-level course] and help the [other college-level] students [who are not in the support course]."

Maintaining attention and being encouraged to utilize other institutional support functions were stated as helpful engagement mechanisms. One participant reiterated that to keep student attention that instructors have to "just make it fun." Another participant commented that being "allowed to use the tutoring services" during course time was useful. Still, a different participant stated that students "[should not] be afraid to ask questions because there [are] no stupid questions."

A participant commented that "[the instructor has made the co-requisite experience] easier because [the instructor] helps [students] afterwards if [they] need help." Another participant added that the help can be things such as "how to avoid [a] weak word." One participant stated that the instructor prompted discourse by having students "talk about how high school taught [them] and how college teaches [them]." Correlations to cultural and contextual real-world applicability of course content was implied by the responses of several participants as means to increase engagement and interactivity.

THEME 3

Connectivity plays a significant role in co-requisite courses.

Participants were asked about benefits of the co-requisites. Their responses described student-faculty connections and student-student connections as important course anchors that promoted student success. One participant noted that "personality" was a critical factor to connection. Another participant commented that the students and instructor "are more like friends." The personal dimension of the student-faculty relationship was reemphasized in

several participants' statements. One participant noted that the connections were "personal enough to where you can connect with [the instructor]." The connections were further stressed with references to "becoming a family."

The familial dynamic of the connections that were developed were evidenced by the development of social interdependence beyond the student-faculty connections. Student-student connections, therefore, were also created. One participant said that "you get help from other students as well" in addition to the support from the instructor. Moreover, the process of selecting an instructor that fit the students' learning proclivities was noted by one participant's discussion of "choosing" a certain instructor referred to as "the best."

Participants who were co-enrolled in two-instructor co-requisite courses offered that coordination between the two instructors is vital. One participant stated:

> Connect with your students in the extra [support course] and see [the] process in the [English] 1301 to see if [the support course's activities] are helping or if [students] are not understanding clearly. [I] am not saying [to] give them extra attention but see if what they are learning in [the support course] is reflecting in the [English] 1301.

Other participants said that connections could be fostered if instructors "learn[ed] the students' ways of thinking." Still, some participants reflected on the development of their connections within the co-requisite course by saying that "if we had any questions, we would just ask [the instructor] in the second part of the class." Another participant added, "[the instructor] would go back to what we were doing if we have any questions. Then, [the instructor] would even give us papers on what we were doing before." The mention of additional support mechanisms was recorded several times over through comments such as "there's a really good connection with the teacher."

Participants stated that patience is fundamental to cultivating a trusting learning environment. To achieve this end, one participant suggested for instructors to "be patient with [their students]. Be sure to have an open mind when it comes to their ideas." Another participant advised instructors "to try to be more specific on what [they] want in [their] essays." Clear articulation of expectations and open lines of communication were heavily implied through participant response as necessary for course connections to develop that were often predicated on the instructor's personality and openness.

ANSWERING THE RESEARCH QUESTIONS

The objective of this study was to answer three research questions regarding African-American males' and Hispanic males' INRW co-requisite experiences at Houston Community College based on a re-examination of a 2019 study of the Houston Community College's implementation of co-requisites. The re-examination of the 2019 study's research provided insight into the impact and efficacy of co-requisites on African-American males and Hispanic males enrolled in INRW and college-level English co-requisites.

RESEARCH QUESTION 1

The first research question looked to determine the process of course placement as an indicator of relevance. As the responses from participants in the 2019 study were analyzed, the researcher noted an alignment between placement and success that was clear through data analysis. By examining the manner in which student placement protocols were implemented, the researcher, thereafter, discovered that the alignment between placement and relevance of purpose in the INRW and English co-requisites were evident.

The first question was designed to frame the lens through which subsequent analysis could be conducted from an objective perspective on the general process of course placement sans any gender or ethnic nuancing. To better address this question, the researcher asked a general question about placement protocols employed for Houston Community College's co-requisite programming. The purpose of asking about placement protocols was to provide guidance in the comprehensive development of understanding how students are relegated to developmental education co-requisite courses at Houston Community College. The researcher believed that fostering a clear concept of this process would result in more focused interpretations of participant responses that could, thereafter, inform the impact of co-requisites on African-American males and Hispanic males.

When re-examining Houston Community College's (HCC) placement protocols exercised during the time frame of the 2019 study, it indicated a mandated process that stemmed from legislative efforts to impact student success through developmental education reform. HCC adhered to Texas's directed guidelines for co-requisite placement. The direct guidelines came after a lowering of placement score standards by the Texas Higher Education Coordinating Board's (THECB) assessment tool, the Texas Success Initiative Assessment (TSIA). Specifically, the writing sample score dropped, which increased the number of students who were deemed college-ready for writing but remained designated underprepared by the TSIA's reading placement standards. Moreover, some students who, prior to the lowering of the placement score standards, would have been placed in adult education courses were up placed into developmental courses or co-requisite courses. The process for co-requisite placement during the 2019 study, in accordance with the state mandate, called for 25% of developmental

students, who were deemed underprepared for college reading and writing, to be placed into a co-requisite course (see Appendix A). Accordingly, Houston Community College advisors provided every other qualifying student an opportunity to enroll into the co-requisites through an opt-out process until the 25% enrollment target was met.

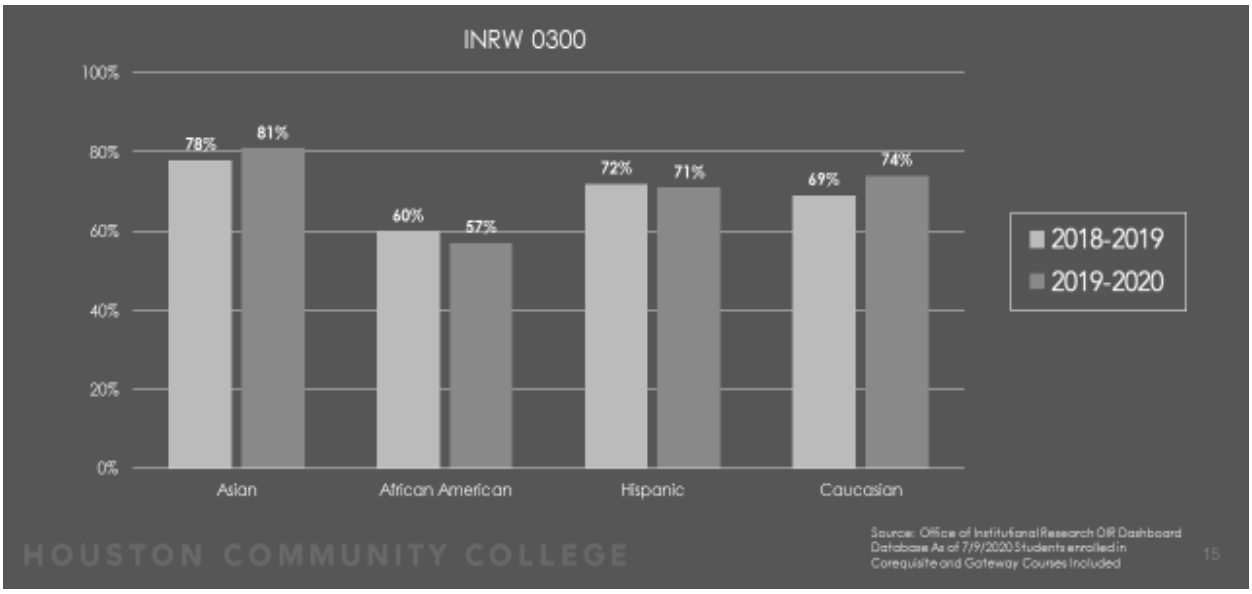
Research Question 2

The second research question built upon the information derived from the first research question to allow for a more focused examination of success metrics for African-American males and Hispanic males enrolled in INRW and English co-requisites. Engagement and interactivity were pervasive undertones reflected in participant responses that attributed to successful completion. The research data indicate consistent academic performance for the included ethnic groups—Asian, African-American (Black), Hispanic, and Caucasian (White)—during the 2019 study's time frame. The available data disaggregates only by ethnicity, which limits the extent of analysis. Gender designation was not provided; however, cross referencing co-requisite enrollment by ethnicity data tables (see Appendix B) with the co-requisite and gateway courses success data disaggregated by race and ethnicity allows for evaluative examination that further informed on the impact of co-requisites for African-American males and Hispanic males enrolled in an INRW and college-level English co-requisite.

The successful completion rates of African-Americans and Hispanics enrolled in the INRW course directly correlated with the successful completion rates of African-Americans and Hispanics enrolled in the accompanying college-level English course. Of the ethnic group data included, African-American students' successful completion rates were the lowest for AY 2018-

2019 and AY 2019-2020, whereas Hispanic students' successful completion rates were second highest in AY 2018-2019 and third highest in AY 2019-2020 (see Figure 2).

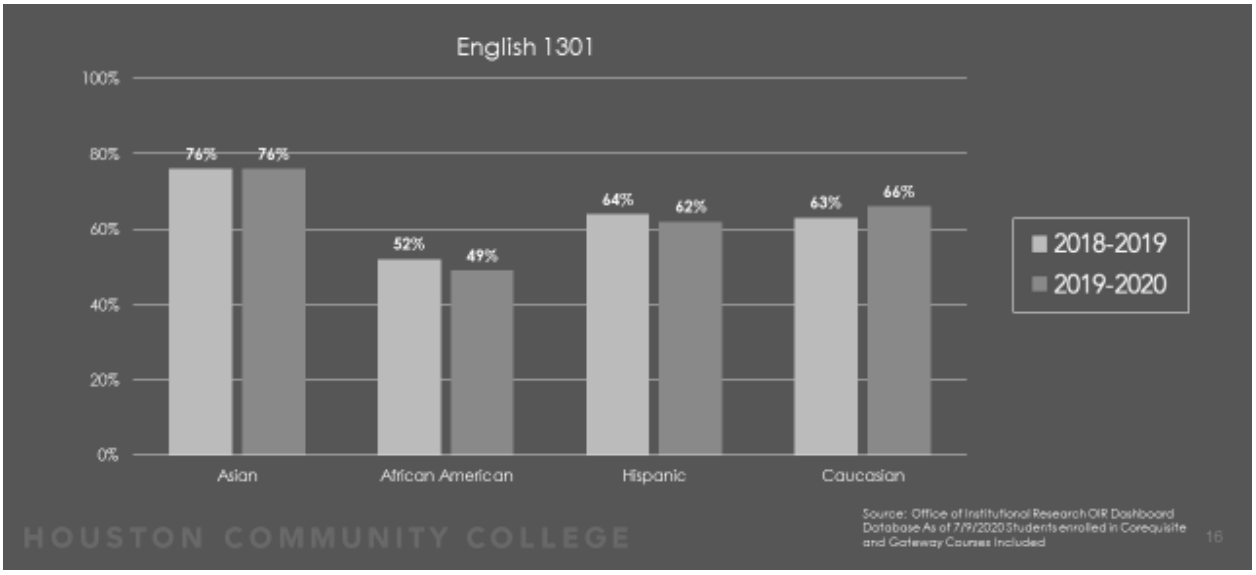
Figure 2. INRW Success Rates by Ethnicity, AY 18-19 and 19-20



Source: Perez & O'Brien, 2020a

The successful completion rates of African-Americans and Hispanics enrolled in the college-level English course directly correlated with the successful completion rates of African-Americans and Hispanics enrolled in the accompanying INRW course. Of the ethnic group data included, African-American students' successful completion rates were the lowest for AY 2018-2019 and AY 2019-2020, whereas Hispanic students' successful completion rates were second highest in AY 2018-2019 and third highest in AY 2019-2020 (see Figure 3).

Figure 3. Gateway English Success Rates by Ethnicity AY 18-19 and 19-20



Source: Perez & O'Brien, 2020a

These successful completion rates were indicative of clear gaps for both African-Americans and Hispanics in juxtaposition to the successful completion rates of the other included ethnic groups. However, Hispanic student successful completion rates were consistently higher than African-American student successful completion rates in the INRW course and the college-level English course. When taking into due consideration the proportionality of the enrollment composition of students enrolled in the INRW and college-level English co-requisites by race/ethnicity and cross-referencing the available gender data for students enrolled in the INRW and college-level English co-requisites (see Appendix B), it is apparent that African-Americans and Hispanics make up the bulk of INRW and college-level English co-requisite enrollment. For Fall 2018, data indicate that of the 1,343 INRW and college-level English co-requisite students, 1,123 were African-American (Black) and Hispanic. This means that 84% of the Fall 2018 INRW and college-level English co-requisite was comprised of

African-American (Black) students and Hispanic students. Of the 1,123 African-American (Black) students and Hispanic students enrolled in the INRW and college-level English co-requisite, 492 (44%) were African-American (Black) and 631 (56%) were Hispanic. African-American (Black) and Hispanic female students made up the majority of the INRW and college-level English co-requisite enrollment for the Fall 2018 data. There were 742 African-American (Black) and Hispanic female students and 381 African-American (Black) and Hispanic male students. Of the 492 African-American (Black) students, 343 (70%) were female and 149 (30%) were male. Of the 631 Hispanic students, 399 (63%) were female and 232 (37%) were male. This would, therefore, indicate that of the 1,123 African-American (Black) and Hispanic students enrolled in the INRW and college-level English co-requisite, 381 (34%) African-American (Black) and Hispanic students were germane to research question two.

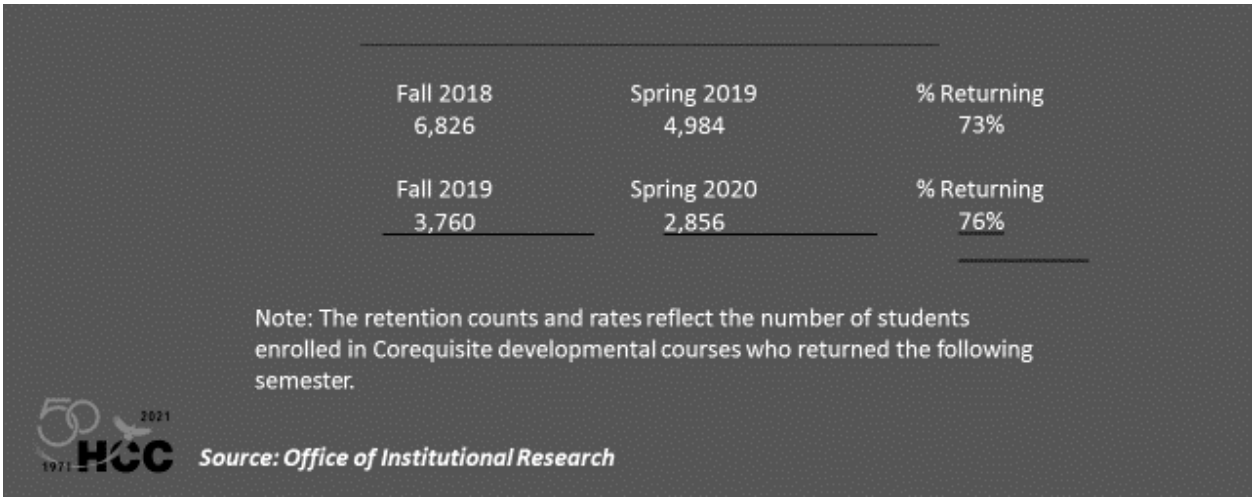
RESEARCH QUESTION 3

The persistence rates of African-American males and Hispanic males enrolled in INRW and college-level English co-requisites during the 2019 study is a reflection of students' connectivity to Houston Community College and the efficacy of its co-requisite structure as it relates to student success. The acquired data for retention relevant to the focused time frame of the current study did not disaggregate based on co-requisite course pairings, ethnicity/race, or gender. Therefore, specific data analysis for African-American males and Hispanics enrolled in an INRW course and college-level English course was not available. However, the co-requisite retention data from Fall 2019 to Spring 2019 and from Fall 2019 to Spring 2020, which include Math co-requisites, INRW co-requisites, and Intensive English co-requisites, do offer insight into

possible impacts on African-American males and Hispanic males enrolled in an INRW and college-level English co-requisite during the period of the 2019 study.

To more accurately assess the persistence rates for African-American males and Hispanic males enrolled in co-requisites during the 2019 study with the available data, a cross analysis of the Math co-requisites data and ESOL co-requisite data provides correlative framing for discussion. As noted in Figure 4, there was a 73% retention rate for the period of the 2019 study. Of the 73%, a significant percentage was attributed to INRW and college-level English course enrollment. This was determined through analysis of the low enrollment number for ESOL and college-level English co-requisites during the 2019 study (see Appendix E) and high unsuccessful completion rates for Developmental Math and Math co-requisites during the 2019 study (see Appendices F– I). Still, the researcher was not able to identify isolated data for African-American male and Hispanic retention with the available data.

Figure 4. Retention Fall 2018 to Spring 2019 and Fall 2019 to Spring 2020



Source: Perez & O'Brien, 2020a

ANALYSIS

African-Americans (Blacks) and Hispanics represented the bulk of enrollment in INRW and college-level English co-requisite courses during the 2019 study. However, successful completion did not correlate to enrollment data. Caucasian (White) student success was the highest with African-American (Black) students being the lowest in the INRW and college-level English co-requisites for the period of the 2019 study. The retention rate from Fall to Spring for the 2019 study's co-requisite students at Houston Community College was high, 73%. The percentage, due to the available data, was not disaggregated by course but instead included all co-requisite courses delivered at HCC for that semester-to-semester breakdown (see Figure 4). Furthermore, the retention data were not disaggregated by ethnicity or gender. Still, the provided data on enrollment populations for the 2019 study's time frame offered reasonable insight into the likelihood of African-American and Hispanic student enrollment within the data. To this end, with the large percentage of the students enrolled in the co-requisites at Houston Community College being African-American or Hispanic, it was feasible to assert that a significant number of African-American students and Hispanic students are a part of the 73% retained co-requisite students.

Although the redaction of the gender and ethnicity of the participants of the 2019 study prevented from the disaggregation of the responses to be specific to only African-American males and Hispanic males, enrollment patterns in the INRW and English co-requisites did offer some indication as to the probability of the composition of said participants in the Student Focus Groups. As stated earlier, the premise for the analysis stemmed from this assertion and, therefore, the research questions and subsequent data analytics provided by Houston

Community College allowed for a degree of extrapolation in the interpretation of the responses in correlation to success and retention data. To this end, there remained noticeable gaps in African-American and Hispanic success rates in comparison to other ethnic groups. Still, the re-examination of the responses to the three research questions as informed by responses from participants in the 2019 study of the INRW Student Focus Group interviews and additional provided data from Houston Community College, in turn, suggest that successful completion rates and persistence rates for African-American males and Hispanic males were influenced by student interpretation of relevance of the INRW and college-level English co-requisite experience, the degree of engagement or interactivity within the INRW and college-level English co-requisite experience, and the level of connection developed from the INRW and college-level English co-requisite experience.

CONCLUSION

This chapter presented three themes that emerged from the re-examination of the 2019 study of Houston Community College's implementation of co-requisite for INRW and college-level English as it pertained to African-American males and Hispanic males. The three research questions were then answered. The key findings that emerged from the themes, conclusions, and recommendations will be presented in Chapter Five.

CHAPTER FIVE: DISCUSSION, CONCLUSION, AND RECOMMENDATIONS FOR FUTURE WORK

INTRODUCTION

The key themes gleaned from the data were presented in Chapter Four. Three research findings were derived from the key themes. Answers to the research questions for this study were, thereafter, noted based upon the re-examination of the data. This chapter offers those findings and aligns them with literature on Critical Race Theory, Social Interdependence Theory, Adult Learning Theory, Educational Equity Theory, Validation Theory, and Developmental Education Best Practices. The conclusions arrived from this study, implications for action, and recommendations for further research are also presented.

SUMMARY OF THE STUDY

Developmental education reforms have become an ever-present topic in higher education in recent years. As mentioned in Chapter One, the return on investment by way of student success has not equated to the funds allocated for developmental education efforts and is not reflected in the data of traditional developmental education sequences for students, especially subsets of marginalized groups of students such as African-American males and Hispanic males. Although efforts to address the needs of underprepared students entering into higher education have remained steady, correlated challenges continue to compound said efforts as revenue shortfalls are becoming a more pronounced part of the narrative in higher

education funding models. In addition, a veritable litany of competing institutional priorities and a host of ancillary considerations exacerbate the issue to an even further extent when taking into account a myriad of contributing factors to less-than-ideal developmental education success rates. In response to these realities, many states have turned to legislative mandates to address underprepared students' success rates to mitigate future drops in already low underprepared students' success rates for those who enroll in traditional developmental education programming. These mandates many times attempt to improve outcomes for underprepared students through developmental education reform efforts. One of the more popular developmental education reform efforts being adopted is the co-requisite remediation model. The co-requisite remediation model allows developmental students to enroll into a gateway college course with a developmental education support course in their first semester of college. One of the main ideas driving co-requisite remediation is that students can earn a college-credit toward their degree during that initial college semester instead of following an often lengthy developmental sequence before being able to enroll into a credit-bearing course that counts toward degree or certification attainment. The researcher was interested in the impact of the co-requisite model as a developmental education reform effort at one community college, which is a designated Minority Serving institution (MSI) and Hispanic Serving Institution (HSI).

The purpose of this study is to determine the efficacy of developmental education reforms through co-requisite implementation in Integrated Reading and Writing (INRW) course and gateway college-level English course co-requisite pairings as it pertains to African-American males and Hispanic males at Houston Community College (HCC).

The researcher used a qualitative approach based on a 2019 study of the implementation of the co-requisite model at HCC. The 2019 study used Student Focus Group interviews to collect the data used and re-examined for this study. Four INRW and gateway college-level English course pairings were included in the 2019 study. Two of the pairings used a same (one) instructor model, and two of the pairings used a different (two) instructor model. Fifteen participants provided answers to the 2019 study's INRW and gateway college-level English questions, which were as follows:

a. This semester students were given the opportunity to take INRW at the same time as ENGL 1301. In the past, students have had to complete INRW before enrolling in 1301. What was your impression when you were enrolled in both courses?

b. What did you find beneficial about taking both courses together?

c. What did you dislike about taking the two courses together?

d. If you were talking to a student who had enrolled in the courses together next semester, what advice would you give them to help them be successful?

e. For students taught by two different instructors: What advice do you have for the instructors for teaching the course?

f. Tell about the support you got this semester. What supports were made available to you? What didn't you use?

The transcribed responses to these questions were then re-examined and filtered through the subsequent research questions for this study. The objective of gathering the qualitative data via the re-examination of the 2019 study's responses along with additional information provided by HCC was to answer the following research questions:

- How are students placed into reading and writing developmental education co-requisites?
- What are the successful completion rates for African-American males and Hispanic males placed in INRW co-requisites?

- What are the retention rates for African-American males and Hispanic males for subsequent semester enrollment following co-requisite placement?

Data were analyzed and coded by the researcher to identify themes. From this process, three key research findings resulted. These findings are:

> Finding 1: Student placement into the reading and writing developmental education co-requisites requires an explicit explanation as to the relevance (cultural/ contextual) of the purpose for the INRW and English co-requisite courses to develop a sense of agency.
>
> Finding 2: Successful completion of the INRW co-requisites requires a high level of student engagement and content interactivity within the courses as key components of the co-requisite learning environment and subsequent student success in the INRW and gateway college-level English courses co-requisite pairings.
>
> Finding 3: Retention rates of students placed in the INRW co-requisites have a direct correlation to student's sense of connectivity to the co-requisite course pairing and the college as a whole.

CONCLUSIONS AND RECOMMENDATIONS

The three noted research findings respond to and provide insight into the three research questions, which were designed to determine the efficacy of developmental education reforms by way of examining data related to INRW and college-level gateway English course co-requisites for African-American males and Hispanic males at Houston Community College (HCC). The study was developed to re-examine a 2019 study of HCC's implementation of the co-requisite model with specific emphasis on the INRW and college-level gateway English co-requisite pairings as it pertained to African-American males' and Hispanic males' placement into the co-requisites, successful completion of the co-requisites, and subsequent semester retention. The re-examination of the 2019 study, as thematically categorized using this study's research framing and questions, allowed for the 2019 study's participant responses to draw

conclusions regarding the efficacy of the aforementioned co-requisite effort for African-American males and Hispanic males at HCC. Those responses led to the following conclusions.

CONCLUSION 1

The first conclusion derived from the re-examination of the 2019 study's Student Focus Group responses and additional provided data is that African-American males' and Hispanic males' placement into the INRW and college-level gateway English co-requisite pairings requires an explicit explanation as to the relevance (cultural/ contextual) of the purpose for the INRW and English co-requisite courses to develop a sense of agency. Participants in the 2019 study seem to have a tenuous, or at best, unsure understanding as to the significance of being placed into the co-requisite model. The pervasive queries that were brought about through their Student Focus Group interview discussions often led to statements about credits. Many participants seemed to make broad assumptions about the INRW support course's function in the co-requisite and its relationship to accumulating credits toward a degree. As referenced in Chapter Four of this study, one participant in the 2019 study's Student Focus Group interviews stated that "we don't get credit." This participant's statement resonated with others which prompted further discussion among participants on the matter. Said discussion underscored the participants' lack of a firm grasping of the relevance of placement into the co-requisite model, especially if the student was an African-American male or Hispanic male.

The undergirding of the 2019 study's participants' sentiments regarding relevance takes on even more prominence when couched within a Critical Race Theory framing. As the Critical Race Theory asserts, traditional systemic structures, such as those found in higher education and developmental education placement practices, can inhibit the extent of relevance that

marginalized students comprehend when working within or enrolled into established programmatic structures (Delgado & Stefancic, 2017; Dovidio et al., 2002, as cited in Ogbonnaya-Ogburu et al., 2020). Furthermore, the absence of interest convergence has an impact upon these students' ability to fully understand, or at least translate, the co-requisite opportunity in an easily digested manner that fosters implicit meaning within the scope of the students' academic and cognitive assets (Sleeter, 2017). In other words, racial considerations may have some relationship with students' interpretative stance on the relevance of enrollment and subsequent engagement in co-requisite course pairings that reflect some degree of racialized nuancing. This assertion is further stressed by the admitted ill-preparedness of higher education institutions to sustainably appeal to the cultural and racial sensibilities of students of color in developmental education programs (Preston, 2017).

Nonetheless, the social component of the co-requisite courses also plays a significant role in African-American and Hispanic male students being able to fathom the relevance of placement into an INRW and college-level gateway English co-requisite pairing. As such, the responses of participants in the 2019 study's Student Focus Group interviews reflect the interdependence of students on one another through various transcribed verbal exchanges to better grasp the purpose of the co-requisite model. These exchanges evidence cooperative learning discourse in a very clear manner. To this end, tenets of Social Interdependence Theory are strewn throughout the students' responses that demonstrate "promotive interaction" (Johnson, 2003). This promotive interaction aligns with deep learning experiences that are often associated with the bonds that students develop throughout shared educational and collaborative experiences (Visschers-Pleijers et al., 2006, as cited in Scager et al., 2016). So, the

placement of African-American males and Hispanic males into INRW and college-level gateway English co-requisite courses correlates to the recognized relevance of such iterations of developmental education reform through accelerated remediated co-requisite course design by said marginalized groups.

CONCLUSION 2

The second conclusion derived from the re-examination of the 2019 study's Student Focus Group responses and additional provided data is that African-American males' and Hispanic males' successful completion of the INRW co-requisites requires a high level of student engagement and content interactivity within the courses. Engagement and interactivity within the INRW and college-level gateway English course co-requisites are paramount to students' degree of investment. Participants in the Student Focus Group interviews made it clear that active engagement was essential to their learning experiences. One participant's reference to the course as "fun" indicates that engagement within the course promoted a learning environment with an active composition that functioned as an anchoring for the aforementioned engagement. This actively composed learning environment lent itself to prompt a higher degree of student-to-student interaction. Therefore, the interactivity within the course cultivated into a multi-directional and reciprocal process between the instructor and students, and among students and other students.

The 2019 study's participant responses in the Student Focus Groups reflect tenets of Adult Learning Theory. Engagement through the fostering of a cooperative learning climate that works to assess the learner's needs and interest is important when building a meaningful co-requisite experience (Knowles & Associates, 1984, as cited in Corley, 2011). This co-requisite

experience, in this case the INRW and college-level English course co-requisite experience for African-American males and Hispanic males, should also evaluate the learning experience and make adjustments accordingly to meet the learners' needs (Knowles, 1984 as cited in Corley, 2011). In turn, this level of interactivity allows for clear alignment with the notion that adults learn by doing (Merriam, 2018). Moreover, the engagement and interactivity should take into account the life experiences of students, as also noted in participant responses that mention the sharing of "personal stories." In addition, a participant stated that learning by teaching others allowed for more concrete embedding of intended learning outcomes. Furthermore, the engagement and inactivity, as mentioned through participant responses, translate beyond the co-requisite experience into the use of other institutional academic supports. Participants emphasized this point when discussing the use of "tutoring services."

African-American males' and Hispanic males' successful completion of the INRW and college-level gateway English course co-requisite calls into question educational equity as captured in participant responses from the 2019 study's Student Focus Groups. Educational Equity Theory addresses efforts to mitigate gaps among different students of different races and socio-economic backgrounds (Hoang, 2020). The INRW and college-level gateway English course co-requisite represents an attempt to achieve this end. Therefore, the level of engagement and interactivity within the aforesaid co-requisite pairing is associated with African-American males' and Hispanic males' successful completion of the INRW and college-level gateway English course co-requisites. It would therefore seem that higher engagement and interactivity within the courses, based on the 2019's Student Focus Group responses, would reflect in successful completion data, which dually reflects a more equitable outcome

than those previously being achieved through prior efforts to improve success rates for underprepared students.

CONCLUSION 3

The third conclusion derived from the re-examination of the 2019 study's Student Focus Group responses and additional provided data is that African-American males' and Hispanic males' retention rates following placement into the INRW and college-level gateway English course co-requisites have a correlative relationship to students' sense of connection to the co-requisite course pairing and the college. Connectivity cultivated during the INRW and college-level gateway English course co-requisite experience impacts the retention of African-American males and Hispanic males enrolled in the aforesaid co-requisite pairing. The connectivity mentioned references connections or bonds developed between the students and the courses' content, the students and faculty, the students and other students, and the students and the college. Each of the connections contributes to a cumulative effect on whether the student develops a sense of belonging at the college. This sense of belonging creates a tether that links the student to the identity of the college through various connective or bonding experiences. These connective or bonding experiences are the result of the development of close-knit relationships forming as support networks are created. Participants in the 2019 study's Student Focus Group interviews make multiple mention of friendship and family when speaking to their respective co-requisite courses. The concept of kinship as a retention mechanism is reinforced by the validation of students in many regards, especially through their academic assets and individuality.

The responses of the 2019 study's Student Focus Group illustrate the affirming and connective aspects of Validation Theory. Validation Theory asserts that the removal of deficit-oriented challenges that students encounter allows for greater academic success (Rendon, 1994). This success is a by-product of students feeling a sense of connection to the college learning community, which prompts personal and social growth (Linares & Muñoz, 2011). The growth of these students translates to persistence, which then impacts retention. In the 2019 study, the responses of the Student Focus Groups are indicative of such a transformative experience. One participant detailed the instructor's willingness to thoroughly review material and provide additional information to ensure understanding. Another participant recanted how students helped one another in addition to the extra support provided by the instructor, which enhanced student confidence. In other words, based on the 2019 study's responses, students felt a sense of validation through their experiences in the INRW and college-level gateway English course co-requisite that seem to have effected their continued enrollment.

The co-requisite model seems to align with developments in Developmental Education Best Practices, which suggest positive changes to retention rates. Developmental Education Best Practices rely on institutional commitment and the implementation of a coherent model to address the needs of underprepared students, which are often disproportionately populated by African-American males and Hispanic males. Co-requisite course design is meant to act as the model that is supposed to allow for greater gains in student success and retention through accelerated developmental education pathways (Edgecombe, 2011). One participant from the 2019 study's Student Focus Group noted that clearly articulated expectations are important when working in the co-requisite course model. Another participant noted the ability to receive

credit toward graduation in one semester as a way that the college is working to help students by reducing time spent in developmental course sequences. Based on these and other responses from the 2019 study, it can be asserted that adherence to Developmental Education Best Practices impacts the retention rates of African-American males and Hispanic males who were enrolled into an INRW and college-level gateway English course co-requisite.

IMPLICATIONS FOR ACTION

The review of literature in Chapter Two of this study suggests that the success of African-American males and Hispanic males enrolled in an INRW and college-level gateway English course co-requisite is dependent upon multiple overlapping factors that influence contextual and cultural framing of the co-requisite experience that is underscored by asset-based, affirming instructional practices. The subsequent findings of the re-examination of the 2019 study further indicate that relevance, engagement and interactivity, and connectivity align with the findings of this study. The alignment suggests that the college's INRW and college-level gateway English course co-requisite may benefit from a redesign of the co-requisite experience that is asset-based, highly interactive with cultural and contextual framing, and intentional in its strategies to connect students to the college's identity and culture of learning. From the conclusions, the researcher recommends three equity-minded structural changes pertaining to expansion, exposure, and experience for consideration when moving forward with African-American male and Hispanic male enrollment into INRW and college-level gateway English course co-requisites.

EXPANSION OF THE INRW CO-REQUISITE PAIRING OPTIONS

The first recommendation is the expansion of INRW co-requisites beyond the pairing with college-level gateway English courses that would allow for the development of greater relevance to African-American males and Hispanic males through the integration of cultural and contextual content within the INRW co-requisite pairing. For example, college-level gateway Humanities, History, or Sociology courses offer salient alternatives to solely pairing with college-level gateway English courses. The Humanities course, for instance, has a cultural framing as an implicit component of its discipline. Therefore, the inclusion of cultural and contextual content within the course would not necessitate an all-out overhaul or revamping of course design. Instead, the cultural and contextual content of the Humanities course would make for a prudent outline by which to tailor instruction via culturally inclusive readings and assignments that better reflect the student population.

As Critical Race Theory tenets purport, inequities that are embedded in traditional education practices are often deemed normal and accepted as a part of rigorous academic programming (Delgado & Stefancic, 2017). Still, the argument can be made that some accepted rigorous academic programming inequitably, albeit unconsciously, includes frameworks for learning that wholly exclude the contributions of marginalized groups within the discourse of many respective disciplines. In other words, the discourse may be homogenous in many, if not all, regards but is presented to a heterogeneous population. This heterogeneous population is then expected to recognize relevance in the material or programmatic structures that bear no semblance of familiarity to information or processes that they have previously encountered. However, to ensure that the continuance of those practices ceases, it is incumbent upon higher

education institutions and discipline experts/practitioners to vigilantly guard against such eventualities. Thus, the unconscious biases that may be considered inherent can lessen to give way to an environment of inclusive practices that expand the opportunities for INRW co-requisite learning with multiple disciplines that may align better with cultural and contextual frameworks.

In addition, relevance for African-American males and Hispanic males enrolled in an INRW and college-level gateway English course co-requisite can be improved by fostering a cooperative learning culture within a community of inquiry that promotes the practice of academic interdependence. To this point, Social Interdependence Theory denotes the interlacing of such interactions as a means to fortify understanding and promulgate deep learning experiences (Visschers-Pleijers et al., 2006, as cited in Scager et al., 2016). These deep learning experiences lend themselves to the development of agency within students. Thus, expansion of INRW co-requisite pairings beyond English pairings to better integrate into the college's degree plans and to prompt a stronger sense of relevance of the INRW co-requisite presents a pragmatic opportunity to lay the foundational building block for African-American males' and Hispanic males' exposure to institutional processes and supports that can improve their probability of success.

Exposure Through Project-Based Learning

Increased exposure for African-American males and Hispanic males enrolled in an INRW and college-level English course co-requisite to otherwise unexplored pathways for learning and materials through engaging and interactive instructional practices that promote active learning experiences is another recommendation. Programs geared toward increasing success gains for

specific marginalized groups, such as a Minority Male Initiatives Program or a PUENTE Program, can act as boons to such processes that dovetail ancillary support mechanisms into learning opportunities afforded within the INRW co-requisite model. In addition, these learning opportunities would need to be designed to engage and interact with learners in such a way as to provide ample exposure to new ideas that could then be non-evasively assimilated into their existing knowledge and become self-directed learning experiences.

Self-directed learning processes, thereby, can be folded into INRW co-requisite course structures through scaffolded, project-based assignments. Adult Learning Theory asserts self-directed learning as one of its major tenets that lead to deep learning experiences (Knowles, 1980, as cited in Corley, 2011). Additionally, the INRW co-requisite's engaging and interactive instructional practices should include a literacy-level diagnostic tool that allows for constant and consistent assessment of reading comprehension as students build their academic vernacular to a level of adequacy for college-level reading expectations. Moreover, as a developmental course, the INRW component of the INRW co-requisite offers the greatest opportunity to integrate academic course rigor and support services through guided principles of adult learning and development (Boylan & Bonham, 2014, as cited in Levine-Brown & Anthony, 2017). This end can be achieved through the use of innovative technology, such as virtual reality (VR), into the course via a project that allows students to explore careers and find VR applications on their phones or a computer that possess practical uses within a chosen field of study or career.

Furthermore, the inclusion of such a project could also shorten equity gaps through increased access to learning through engaging and interactive means that are familiar (i.e.,

smartphones) and of particular interest to students. Educational Equity Theory research notes three standards of educational equity: access, participation, and outcomes (Brookover & Lezotte, 1981, as cited in Hoang, 2020). In this case, all three standards can be reached through the employment of the aforesaid project-based assignment structure that integrates the standards within the assignment as incremental components that build on one another to ultimately form an end product that clearly demonstrates understanding of intended learning outcomes. These outcomes would then reflect the student's exposure to a myriad of learning paths that emphasize the student's strengths while encouraging exploration to meet designated goals within a learning environment that is not as polarizing as some other more traditional instructional models. Also, the exposure to the new learning paths would translate into acquired lived educational experience that can be drawn from in various other contexts as the student moves forward toward completion.

Experience Through Experiential Learning Opportunities

The third recommendation is developing an experiential learning component to the INRW co-requisites that creates multiple opportunities to connect students to the college and gain transferrable skills through shared experiences with other co-requisite students. These experiences can be attached to participation in scholarship applications, internships, or work-study. If students are guided through internal and external scholarship application processes as part of their co-requisite courses, this would offer them an opportunity to learn how to navigate the steps to seek out and compete for funding to supplement or pay for their education. This type of assignment aligns well with exploratory learning models in that it includes a built-in incentive that most students would easily understand the relevance of.

Moreover, if internships are made expressly available to INRW co-requisite students, the experiences gained would be immediate and could possibly lead to employment opportunities. In addition, those who opt for work-study experiences would conceivably develop a better understanding of the college's resources and remain on campus for longer periods of time than they would have otherwise. These experiences could then easily translate into an organically born connection to the college and deeper investment in completion.

The enabling and supportive processes of INRW co-requisite experiential learning opportunities align with affirming higher education research, literature, and theories. Validation Theory is one such theory that reinforces the benefits of experiential learning models through its premise of enabling and confirming support inside and outside of the class to aid in academic and interpersonal development (Linares & Muñoz, 2011). This development is germane to the connections that students foster with one another and the college. It also extends to post-completion employment if students are provided the opportunity to intern. Furthermore, the fostering of social adjustment behaviors through said experiential learning opportunities pairs well with the recognition of the diversity and individuality of students, which also is an aspect of Validation Theory (Linares & Muñoz, 2011). This, in turn, could help marginalized students overcome inherent barriers to completion that otherwise would impede their persistence and retention, which is especially relevant for African-American males and Hispanic males.

Shifts in developmental education practices point toward change models, such as the co-requisite model, that accelerate learning and progression pathways to targeted experiences in gateway courses sooner than would have been possible through previous traditionally

sequenced developmental education programs. Therefore, INRW co-requisite students would potentially benefit from the opportunity to build networks with peers and faculty that are experientially oriented. These networks would then connect students to students as an ongoing support mechanism that could have any number of positive ancillary impacts within and outside of the college.

RECOMMENDATIONS FOR FURTHER RESEARCH

In addition to the aforesaid recommendations regarding expansion of the INRW co-requisite pairing options, exposure through project-based learning, and experience through experiential learning opportunities, the researcher recommends further longitudinal studies on impacts that INRW co-requisites have on African-American males and Hispanic males in relation to different degree and workforce certification pathways.

The long-term efficacy of developmental education reform efforts through reading and writing co-requisite remediation through pairings of support courses and different reading-intensive and writing-intensive college-level courses warrant examination. This could be accomplished by reviewing INRW co-requisite data for the three academic years (2018-2020) in which the co-requisites were implemented at Houston Community College to meet the state mandated 75% developmental student enrollment threshold. An impact study on this topic that increases the sample size and employs a mixed-method approach would allow for deeper analysis of the results thereafter.

The limitations of this study were defined by the 2019 study's data and subsequent institutional data provided. A duplication of this study that conducts the interviews and compiles the data specifically from African-American males and Hispanic males with

participants from each of the academic years of the INRW co-requisite's implementation would offer valuable information as to the impact of INRW co-requisite pairings on completion and success.

CONCLUSION

The purpose of this study was to examine the efficacy of the developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading- and writing-based co-requisites at Houston Community College. The literature on developmental education reforms calls into question the effectiveness of traditional developmental education sequence-based programs. Although significant resources have been dedicated toward efforts to remediate underprepared students entering college, success and completion rates have not equated to the amount of monies devoted to these efforts. With an increasingly disproportionate number of marginalized students directed into developmental education programs, co-requisite remediation has become the developmental education acceleration model that many institutions and states have adopted to compensate for the less than optimal returns on investment via developmental student success and completion.

Houston Community College's (HCC) adoption of its INRW co-requisite model was state-mandated through legislation. Nevertheless, as a Minority Serving Institution, the placement and success of its developmental population is of the utmost importance to the college's ability to meet the needs of the community. As such, developmental education reforms for Integrated Reading and Writing (INRW) as they pertain to African-American males and Hispanic males placed into reading- and writing-based co-requisites at HCC had an impact on successful

completion and retention that hinged upon success primers regarding relevance, engagement and interactivity, and connection. This impact, however, was affected by the college's abrupt shift to a remote learning environment in spring 2020 due to the COVID-19 pandemic, which was reflected in the ancillary data provided in the Appendix. Still, the re-examination of the 2019 study provided clear insight as to the potential of the INRW co-requisites, but it also leaves much to be yet examined in future studies.

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APPENDIX A: PROTOCOLS FOR CO-REQUISITE ENROLLMENT

Math:

The appropriate pathway is chosen based upon a student's degree plan. In each of these pathways, students are required to take an entry level college math course (Math 1314, Math 1324, Math 1332, or Math 1342). Each of these courses have been included in a corequisite pair whereby the college level math course is **linked** with a developmental level support course (Math 0314, Math 0324, Math 0332, or Math 0342). The math corequisite course linked pairings are the following:

Math 0314 with Math 1314
Math 0324 with Math 1324
Math 0332 with Math 1332
Math 0342 with Math 1342

Students will be required to enroll in one of these Math Corequisite Course pairings.

Furthermore, students must maintain satisfactory attendance in **BOTH** the developmental level support course and the college level math course. If a student withdraws/drops one course in the math corequisite pair, then he/she will be dropped from the other linked course.

ENGL/INRW/ESOL

If a student is identified as being at the developmental level for INRW, that student is placed into ENGL 1301 and INRW 0300.

APPENDIX B: COREQ ENROLLMENT BY RACE/ETHNICITY

Coreq Enrollment by Race/Ethnicity			
Course	Race/Ethnicity	Gender	Fall 2018
ESOL 0370			
ESOL 0370			
ESOL 0370	ASIAN	F	90
ESOL 0370	ASIAN	M	61
ESOL 0370	BLACK	F	51
ESOL 0370	BLACK	M	29
ESOL 0370	HISPA	F	22
ESOL 0370	HISPA	M	14
ESOL 0370	WHITE	F	24
ESOL 0370	WHITE	M	14
INRW 0300	Other	F	22
INRW 0300	Other	M	26
INRW 0300	ASIAN	F	53
INRW 0300	ASIAN	M	48
INRW 0300	BLACK	F	343
INRW 0300	BLACK	M	149
INRW 0300	HISPA	F	399
INRW 0300	HISPA	M	232
INRW 0300	WHITE	F	34
INRW 0300	WHITE	M	37

APPENDIX C: HCC STUDENT HANDBOOK

To view the HCC Student Handbook, visit:

https://www.hccs.edu/resources-for/current-students/student-handbook/

APPENDIX D: INRW FALL 2018 AND SPRING 2019 GRADE DISTRIBUTION

Term	Subject	Catalog Number	A%	B%	C%	D%	F%	W%	1%	IP%	>= C%	Retained %	#Of Grades
Fall 2018	INRW	0300	20.9%	26.6%	24.2%	.4%	6.5%	6.1%	.0%	13.2%	71.7%	91.9%	1343
Spring 2019	INRW	0300	20.3%	21.0%	16.5%	.0%	9.6%	16.7%	.9%	13.1%	59.8%	83.3%	804
"Total			**20.7%**	**24.5%**	**22.1%**	.3%	**7.7%**	**11.3%**	.3%	**13.1%**	**67.3%**	**88.7%**	**2148**

APPENDIX E: SUCCESS RATES OF STUDENTS ENROLLED IN THE ESOL/ENGL 1301 CO-REQUISITE PAIR, COMPARED TO HCC ENGL SUCCESS RATES

Success Rates of Students Enrolled in the ESOL/ENGL 1301 Co-requisite Pair, Compared to HCC ENGL Success Rates

		Fall		Spring	
Course	Year	Enrollment	Success Rate	Enrollment	Success Rate
ESOL 0370	2018-2019	311	90%	249	88%
	2019-2020	250	92%	261	86%
ENGL 1301 (Corequisite students)	2018-2019	311	82%	249	88%
	2019-2020	249	90%	261	86%
ENGL 1301 (All HCC)	2018-2019	6896	70%	3849	68%
	2019-2020	6425	63%	3724	59%

APPENDIX F: OVERALL MATHEMATICS SUCCESS RATES, HOUSTON COMMUNITY COLLEGE

Overall Mathematics HCC Success Rates,
Houston Community College

Term	Subject	Catalog Number	Success Rates	Enrollment
Fall 2018	MATH	1314	49.3%	4668
		1324	54.8%	1749
		1332	60.8%	812
		1342	58.1%	1012
Fall 2019	MATH	1314	46.6%	5268
		1324	55.2%	2177
		1332	58.5%	1362
		1342	56.5%	1183
Spring 2019	MATH	1314	44.7%	3914
		1324	50.8%	1681
		1332	52.8%	595
		1342	57.6%	1032
Spring 2020	MATH	1314	63.0%	4177
		1324	64.5%	1825
		1332	59.9%	960
		1342	71.7%	1019

APPENDIX G: SUCCESS IN MATH CO-REQUISITE COURSES

Success in Math Co-requisite Courses

			Successful		Unsuccessful		Grand Total	
	Subject	**Catalog Number**	**Count**	**Percent**	**Count**	**Percent**	**Count**	**Percent**
18-19	**Math**	**0309**	239	65%	130	35%	369	100%
	Math	**0310**	492	65%	267	35%	759	100%
	Math	**0314**	191	52%	174	48%	365	100%

			Successful		Unsuccessful		Grand Total	
	Subject	**Catalog Number**	**Count**	**Percent**	**Count**	**Percent**	**Count**	**Percent**
19-20	**Math**	**0324**	560	60%	381	40%	941.0	100%
	Math	**0332**	815	66%	420	34%	1235	100%
	Math	**0342**	280	68%	133	32%	413	100%
	Math	**0314**	1085	60%	714	40%	1799	100%

APPENDIX H: SUCCESS IN MATH GATEWAY COURSES

Success in Math Gateway Courses

			Corequisite Students		HCC Total	
	Subject	**Catalog Number**	**Enrollment**	**Percent Successful**	**Enrollment**	**Percent Successful**
18-19	**Math**	**1314**	377	29%	8582	47%
19-20	**Math**	**1314**	1768	50%	9445	54%
18-19	**Math**	**1324**	477	29%	3430	53%
19-20	**Math**	**1324**	930	53%	4002	59%
		1324				
18-19	**Math**	**1332**	361	45%	1407	57%
19-20	**Math**	**1332**	1224	58%	2322	59%
18-19	**Math**	**1342**	282	32%	2044	58%
19-20	**Math**	**1342**	409	61%	2202	64%

APPENDIX I: SUCCESS BY RACE/ETHNICITY IN CO-REQUISITE COURSES: PART I

Success by Race/Ethnicity in Co-requisite Courses

		Successful				Unsuccessful					
		Fall 2018		Spring 2019		Fall 2018		Spring 2019		Total	
Course	Ethnic Grp	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Fall 2018	Spring 2019
0309	Asian	7	88%	7	70%	1	13%	3	30%	8	10
	African American	71	74%	23	43%	25	26%	30	57%	96	53
	Hispanic	65	69%	32	53%	29	31%	28	47%	94	60
	Caucasian	17	85%	8	67%	3	15%	4	33%	20	12
0310	Asian	18	72%	29	83%	7	28%	6	17%	25	35
	African American	83	61%	68	52%	52	39%	62	48%	135	130
	Hispanic	131	70%	102	65%	56	30%	56	35%	187	158
	Caucasian	24	69%	23	72%	11	31%	9	28%	35	32
0314	Asian			15	63%	1	100%	9	38%	1	24
	African American	5	50%	54	46%	5	50%	64	54%	10	118
	Hispanic	4	44%	76	53%	5	56%	68	47%	9	144
	Caucasian	4	67%	22	63%	2	33%	13	37%	6	35

APPENDIX J: SUCCESS BY RACE/ETHNICITY IN CO-REQUISITE COURSES: PART II

Success by Race/Ethnicity in Co-requisite Courses

		Successful				Unsuccessful					
		Fall 2019		Spring 2020		Fall 2019		Spring 2020		Total	
Course	Ethnic Grp	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Fall 2019	Spring 2020
0314	Asian	56	72%	37	70%	22	28%	16	30%	78	53
	African American	197	56%	142	60%	152	44%	96	40%	349	238
	Hispanic	296	56%	200	64%	228	44%	114	36%	524	314
	Caucasian	59	60%	46	69%	39	40%	21	31%	98	67
0324	Asian	31.0	78%	26	76%	9	23%	8	24%	40	34
	African American	84.0	46%	65	48%	99	54%	71	52%	183	136
	Hispanic	166.0	70%	100	60%	70	30%	67	40%	236	167
	Caucasian	43.0	63%	26	60%	25	37%	17	40%	68	43
0332	Asian	11.0	85%	19	90%	2	15%	2	10%	13	21
	African American	196.0	66%	94	48%	103	34%	101	52%	299	195
	Hispanic	272.0	75%	129	65%	90	25%	69	35%	362	198
	Caucasian	47.0	76%	20	47%	15	24%	23	53%	62	43
0342	Asian	13.0	81%	8	80%	3	19%	2	20%	16	10
	African American	39.0	57%	49	71%	29	43%	20	29%	68	69
	Hispanic	97.0	69%	46	65%	44	31%	25	35%	141	71
	Caucasian	8.0	73%	7	78%	3	27%	2	22%	11	9

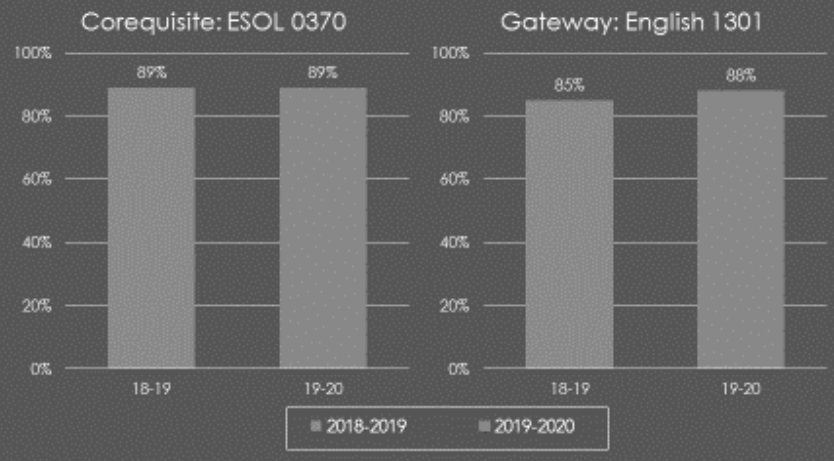
APPENDIX K: SUCCESS BY RACE/ETHNICITY IN GATEWAY COURSES

Success by Race/Ethnicity in Gateway Courses

		Successful				Successful			
		Fall 2018		Spring 2019		Fall 2019		Spring 2020	
Course	Ethnic Grp	Enrollment	Success	Enrollment	Success	Enrollment	Success	Enrollment	Success
1314	**Asian**	3	67%	26	35%	78	53%	53	66%
	African American	13	31%	120	26%	335	42%	234	53%
	Hispanic	9	22%	144	28%	511	42%	314	59%
	Caucasian	7	29%	35	31%	98	48%	67	73%
1324	**Asian**	22	50%	23	52%	40	70%	33	79%
	African American	90	21%	73	18%	181	36%	135	46%
	Hispanic	114	28%	93	31%	233	59%	165	59%
	Caucasian	25	36%	23	35%	66	58%	43	58%
1332	**Asian**	4	50%	7	57%	13	77%	21	86%
	African American	98	44%	52	19%	298	52%	192	44%
	Hispanic	95	55%	58	43%	359	65%	195	59%
	Caucasian	20	55%	11	73%	61	70%	43	49%
1342	**Asian**	6	33%	14	64%	16	75%	10	80%
	African American	43	33%	57	23%	68	53%	69	61%
	Hispanic	72	31%	65	26%	141	61%	69	58%
	Caucasian	9	56%	9	33%	11	73%	7	100%

APPENDIX L: ESOL CO-REQUISITE AND GATEWAY COURSE SUCCESS

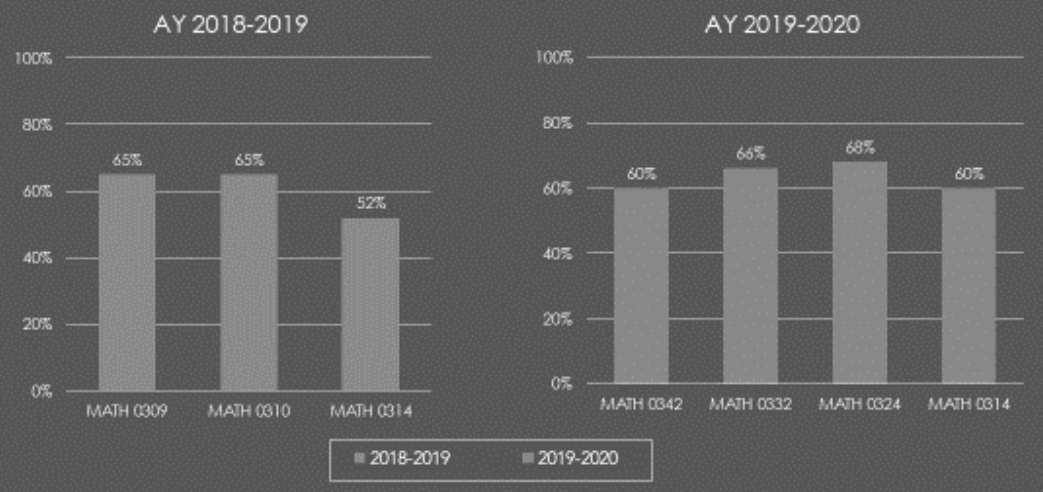
ESOL Corequisite and Gateway Course Success Have Remained High



Source: Office of Institutional Research OIR Dashboard Database As of 7/9/2020 Students enrolled in Corequisite and Gateway Courses Included

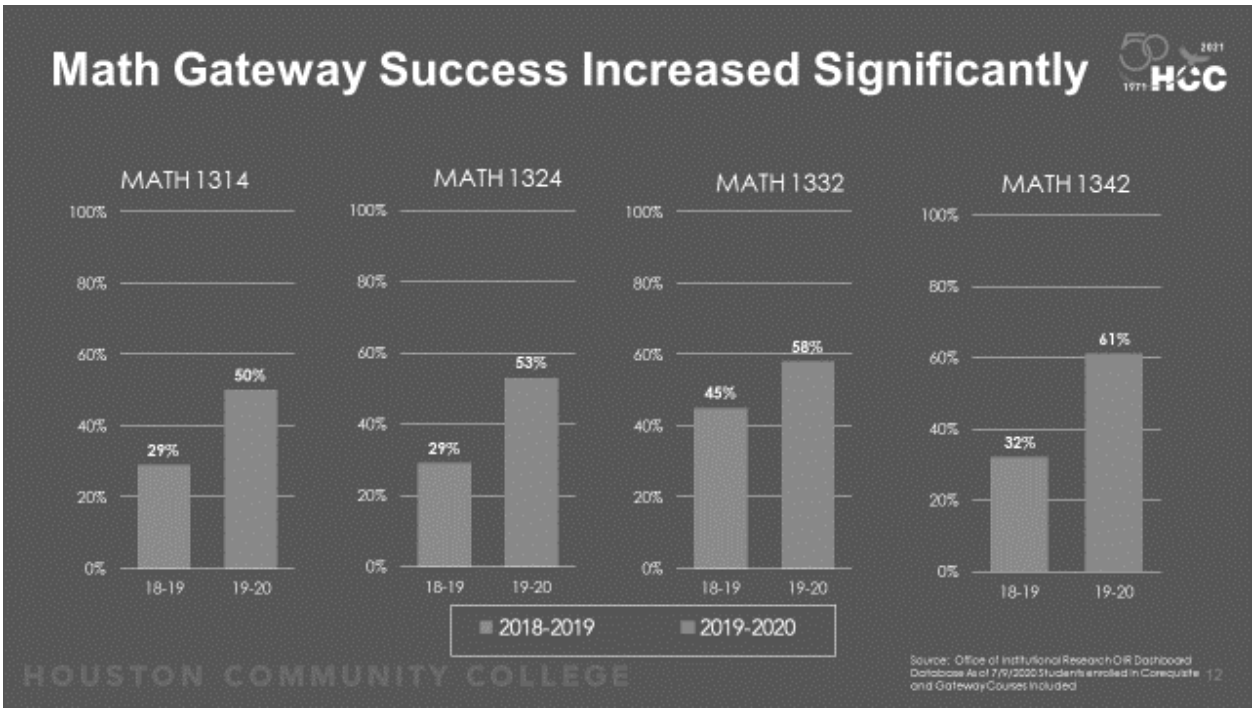
APPENDIX M: MATH CO-REQUISITE SUCCESS LARGELY STABLE

Math Corequisite Success Largely Stable

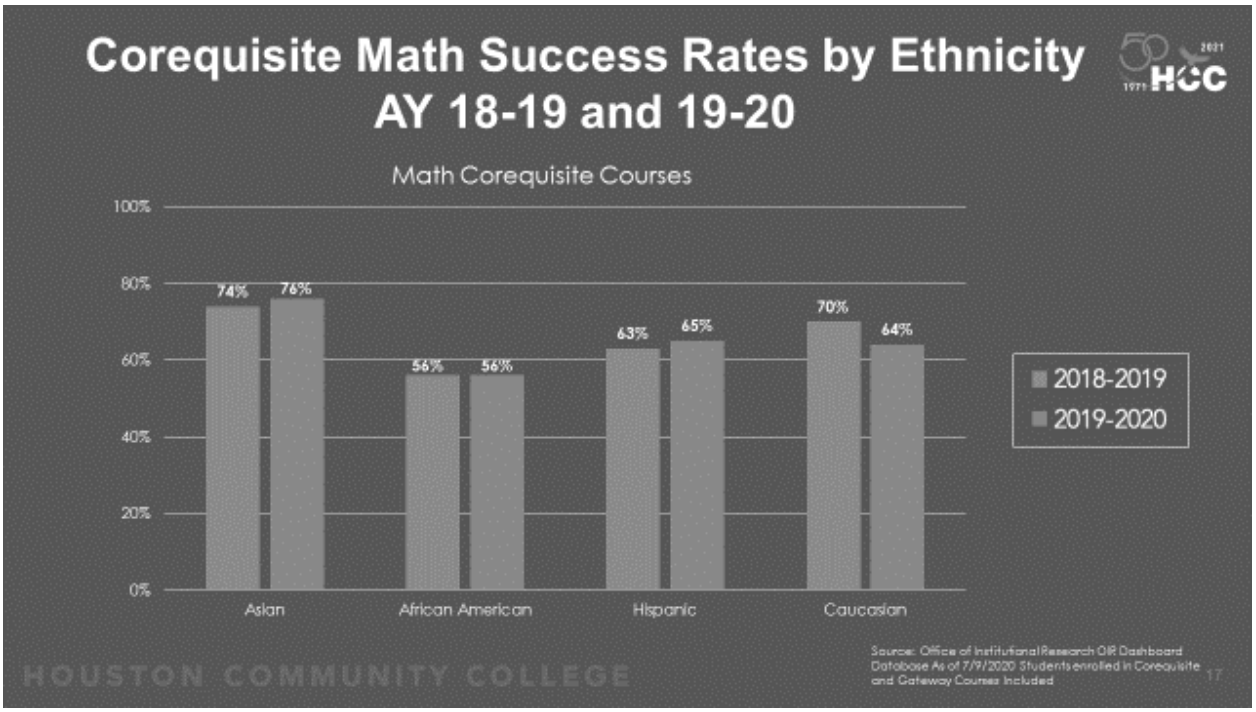


Source: Office of Institutional Research OIR Dashboard Database As of 7/9/2020 Students enrolled in Corequisite and Gateway Courses Included

APPENDIX N: MATH GATEWAY SUCCESS INCREASED SIGNIFICANTLY

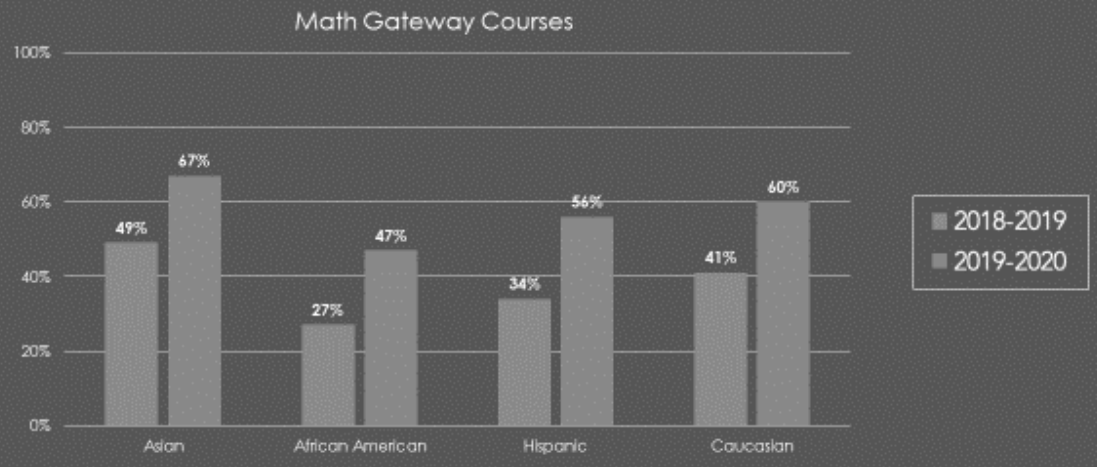

Math Gateway Success Increased Significantly
MATH 1314
MATH 1324
MATH 1332
MATH 1342
100%
80%
60%
40%
20%
0%
29%
50%
29%
53%
45%
58%
32%
61%
18-19
19-20
2018-2019
2019-2020
HOUSTON COMMUNITY COLLEGE
Source: Office of Institutional Research OIR Dashboard Database As of 7/9/2020 Students enrolled in Corequisite and Gateway Courses Included
12

APPENDIX O: CO-REQUISITE MATH SUCCESS RATES BY ETHNICITY


Corequisite Math Success Rates by Ethnicity
AY 18-19 and 19-20
Math Corequisite Courses
100%
80%
60%
40%
20%
0%
74%
76%
56%
56%
63%
65%
70%
64%
Asian
African American
Hispanic
Caucasian
2018-2019
2019-2020
Source: Office of Institutional Research OIR Dashboard Database As of 7/9/2020 Students enrolled in Corequisite and Gateway Courses Included
HOUSTON COMMUNITY COLLEGE
17

APPENDIX P: GATEWAY MATH SUCCESS RATES BY ETHNICITY

Gateway Math Success Rates by Ethnicity AY 18-19 and 19-20



HOUSTON COMMUNITY COLLEGE

Source: Office of Institutional Research OIR Dashboard Database As of 7/9/2020 Students enrolled in Corequisite and Gateway Courses Included

18

APPENDIX Q: FERRIS STATE UNIVERSITY IRB APPROVAL LETTER

FERRIS STATE UNIVERSITY

INSTITUTIONAL REVIEW BOARD
1010 Campus Drive FLITE 410 Big Rapids, MI 49307
www.ferris.edu/irb

Date: December 4, 2020

To: Sandra Balkema, PhD and Mr. Desmond Lewis
From: Gregory Wellman, R.Ph, Ph.D, IRB Chair
Re: IRB Application for Review

A reliance agreement has been put in place between the Ferris State IRB and Houston Community College IRB which governs this study; **Ferris State IRB is relying upon the approval determination of Houston Community College IRB**. It is your responsibility to ensure and inform the FSU IRB that all necessary institutional permissions are obtained from Houston Community College IRB and that all policies are met prior to beginning the project. Approval applies only to the activities described in the protocol submission; should revisions need to be made, all materials must be approved by Houston Community College IRB prior to initiation and submitted to Ferris IRB for our records. In addition, each IRB must be made aware of any serious and unexpected and/or unanticipated adverse events as well as complaints and non-compliance issues.

As mandated by Title 45 Code of Federal Regulations, Part 46 (45 CFR 46) you are required to submit an annual status report during the life of the research project and a Final Report Form upon study completion. Thank you for your compliance with these guidelines and best wishes for a successful research endeavor.

Regards,

Gregory Wellman, R.Ph, Ph.D, IRB Chair
Ferris State University Institutional Review Board

APPENDIX R: HOUSTON COMMUNITY COLLEGE IRB APPROVAL LETTER

HOUSTON COMMUNITY COLLEGE

Institutional Review Board

Desmond Lewis
Ferris State University
7703 Chadbourne Trace Ct.
Richmond, TX 77407

September 4, 2019

Dear Mr. Lewis:

This is to inform you that your research proposal

"The Efficacy of Developmental Education Reforms for Integrated Reading and Writing"

has been reviewed and is approved with the modifications and clarifications as addressed.

All data collection and analysis are subject to the legal and procedural requirements of Houston Community College and other local, state and federal regulations. Approval by the HCC Institutional Review Board does not mean that HCC implicitly or explicitly endorses research projects. Other approvals may be required.

The effective dates are June 1, 2019 through May 31, 2020. Extensions may be granted, but must be requested in writing.

You will be responsible for the coordination of the research with HCC faculty and staff.

If you have further questions, please contact me.

Cordially,

Martha Oburn, PhD
Chair, HCC IRB
Houston Community College

cc: Dr. Kurt Ewen, Vice Chancellor of Planning and Institutional Effectiveness

P.O. Box 667517, Houston, TX 77266-7517 T: 713.718.8625 F 713.718.2031 W hccs.edu/oir

APPENDIX S: HOUSTON COMMUNITY COLLEGE IRB APPROVAL LETTER EXTENSION

HOUSTON COMMUNITY COLLEGE

Institutional Review Board

Desmond Lewis
Ferris State University
7703 Chadbourne Trace Ct.
Richmond, TX 77407

July 10, 2020

Dear Mr. Lewis:

This is to inform you that your request for an extension to the research proposal

"The Efficacy of Developmental Education Reforms for Integrated Reading and Writing"

has been reviewed and is approved. This approval is based on the fact that no changes have been made to the protocol that was previously approved in 2019.

Please note that Houston Community College is functioning under limited operations related to Covid19. All third party research activities are contingent on HCC resuming normal operations

All data collection and analysis are subject to the legal and procedural requirements of Houston Community College and other local, state and federal regulations. Approval by the HCC Institutional Review Board does not mean that HCC implicitly or explicitly endorses research projects. Other approvals may be required.

The effective dates are July 1, 2020 through June 30, 2021. Further extensions may be granted, but must be requested in writing.

You will be responsible for the coordination of the research with HCC faculty and staff.

If you have further questions, please contact me.

Cordially,

Martha Oburn

Martha Oburn, PhD
Chair, HCC IRB
Houston Community College

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