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Effect of Response to Intervention on Developmental Education Students' Persistence, Retention, and Completion

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COLLEGE OF EDUCATION

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2016

Abstract

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by

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MLS, University of Oklahoma, 2000

BA, University of Florida, 1976

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

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Abstract

In 2012, national rates of degree or certificate completion for students beginning college in developmental education courses were 35%. At a Midwestern state community college completion rates were even lower, with only 27% of developmental reading/writing (DRW) students completing their program. Therefore, the purpose of this causal-comparative study was to compare success rates for DRW students beginning college in a multileveled (MLI) program and in a response to intervention (RtI) based program. The MLI program was grounded in a scaffolded learning framework, and the RtI program was grounded in a transformative learning framework. Four research questions were posited to identify the associations between success rates (course completion, persistence, retention, and credential completion) for students enrolled in the MLI program and students enrolled in the RtI program. Archival data for a census sample of 13,731 DRW students were analyzed. The chi-square test was used to determine whether associations existed between instructional groups for each dependent variable. Findings confirmed a significant association between instructional group and success factors, with students in the RtI group showing higher success rates for course completion, persistence, and retention than the MLI group. However, the MLI group showed higher success rates for credential completion than the RtI group. Further research will need to investigate the reasons for the divergent outcomes such as the fact that MLI program students began college two years before RtI program students. Implications for social change include an instructional model that may contribute to increased course completion, persistence, retention, and credential completion for DRW students, which is discussed in the appended position paper.

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Dedication

This project study is dedicated to all the students with whom I have worked through the years. Their commitment to improving their lives and the lives of their families has inspired me to give my best to them. This work is also dedicated to the faculty with whom I collaborated to create the program that is the focus of this project study. This group of educators pours their heart and soul into their work with underprepared learners every day. Their commitment to providing the best possible program for their students has strengthened my own commitment to continuing to champion the needs of underprepared adult learners.

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Section 1: The Problem

Introduction

The faculty of the developmental education department at Midwestern Community College (MCC; pseudonym), a midsized urban community college serving multiple campuses in a Midwestern state, began to redesign the overall instructional program for developmental reading/writing DRW in Fall 2012 because even though multiple levels of DRW instruction were offered, according to the 2012 MCC institutional research report only 27% of students beginning college in the upper level of these courses completed credentials, and only 24% of the students who were required to enroll in the lower DRW levels completed credentials. These credentials include certificates leading to employment or to early transfer to a bachelors' degree program, associates' degrees leading to transfer to bachelors' degree programs, and applied associates' degrees leading to certification and employment in technical fields. These data mirrored the nationwide problem of credential completion rates of 35% or below for developmental education students (Bailey, 2012; Bailey, Jeong, & Cho, 2010). Credential completion rates have failed to significantly increase despite attempts to reform the structure of developmental education programs (Accelerated Learning Program, n.d.; Hern, 2014).

The Local Problem

The problem that prompted this study was the low credential completion rate for MCC's DRW students. The national focus for postsecondary education has shifted from access documented by enrollment to success documented by completion (Achieving the

Dream, 2010). Unlike selective admissions institutions that require documentation of high school success such as standardized test scores and high school transcripts showing grade performance (U.S. News and World Report, 2015), open-door community colleges like MCC have traditionally admitted all students (Multin, 2012). Students who did not hold a high school diploma could be admitted and placed into courses through "ability to benefit" testing (U.S. Department of Education, 2011), and students whose literacy skills fell below a level which predicted college success based on entrance placement test scores were enrolled in developmental education courses with the goal of increasing literacy skills (Bailey, 2008).

DRW programs have traditionally offered multiple levels of courses focused solely on instruction in literacy skill-building, with completion of each level required prior to enrollment in any course leading to completion of a degree or certificate (Bailey, 2008). These MLI programs may contribute to failure to complete the developmental course sequence and, ultimately, failure to complete a college credential (Bailey, Jeong, & Cho, 2010). Boylan (2009) suggested that a DRW program based on structured, tiered interventions designed to increase college success, embedded within a compressed course sequence designed to close gaps in literacy and college-readiness skills, could increase success for these students. This tiered-intervention structure is based on response to intervention (RtI) programs in K-12 settings (Fuchs & Fuchs, 2009) but has not been widely implemented at the college level (Boylan, 2009).

Rationale

The problem of low credential completion rates for DRW students directly relates to MCC's ability to obtain federal funding under new guidelines proposed by the federal government (Welsch, 2013), a factor that could affect access to college for the 79% of the group of students that fund their college education through Pell Grant dollars. In response to the proposed federal changes, the state in which MCC is located has instituted significant changes in funding, including an increase of weight from 17% to 30% for completion of degrees and/or certificates and recognizing course completion as a funding metric (National Council of State Legislatures, 2015; Performance Indicators Task Force, 2015). Thus, failure to increase success rates for DRW students could directly impact MCC's ability to retain access to funding that allows the college to serve these students.

Evidence of the Problem at the Local Level

MCC's MLI program for DRW included four levels of reading courses, three levels of writing courses, and two levels of mathematics courses as of January, 2012. Students placing into the two lower levels of reading and writing also enrolled in supplemental reading/writing lab courses. Instruction focused exclusively on skill remediation. Each course in the original sequence carried four credit hours of instruction, and lab courses carried two credits. Thus, students beginning instruction in the four-levels-below-college reading and writing courses would spend two years and a total of 36 credits to complete the required sequence; students also needing to complete the two developmental math courses would use 44 total credits. Because federal financial aid guidelines had limited the total number of Pell Grant dollars that could be used for

developmental courses to 30 credits (U.S. Department of Education, 2011), the program structure resulted in increases in risk for most students needing remedial instruction. When 2012 U.S. Department of Education regulations demanded that these limits be strictly applied, continuing to offer the MLI program would have caused 60% of the total DRW student population to exceed financial aid limits. This would have meant that students would either need to self-pay (a demand that created a financial burden since most of the students qualified for Pell Grants) or take student loans to complete their DRW prerequisites before beginning courses leading to a credential. While student loans offered an option to allow students to continue postsecondary training, loans would add to the students' financial burden, making this an undesirable alternative.

Furthermore, MLI program students' course completion rates fell between 53% for students beginning in the lowest skill placement level and 62% for upper-level students. Credential completion rates for MLI program students fell between 24% and 32%. Table 1 shows success rates by skill placement level for students enrolled in the MLI program from Spring 2011 to Summer 2013.

Table 1

Rates of Dependent Variables for MLI Program

Entry level	Course completion	Persistence	Retention	Credential completion
1-level-below college	62%	66%	22%	27%
2-3-levels-below college reading	56%	64%	25%	24%
2-3-levels-below college writing	60%	40%	38%	32%
4-levels-below college	53%	33%	-	27%

Note. MCC (2012). *Retention data for 4-below college group not reported.*

The MLI program's low success rates showed that students entering with the lowest skill levels were unlikely to complete the developmental sequence and, consequently, were less likely to complete a credential than students entering with college-level skills (Bailey, 2008). Because of the national focus on reforming developmental program structure to increase credential completion (Achieving the Dream, 2010; Bailey, 2008; Complete College America, 2011) and of the financial aid regulations limiting use of Pell Grant dollars for developmental coursework (U.S. Department of Education, 2011), the DRW faculty began to explore possible models for program revision. Since MCC's institutional research reports (2012) documented that 60% of incoming developmental education students tested into the two lower levels of reading and writing, faculty were hesitant to adopt strategies such as placing all students into a college-level course with tutoring support, as the organization Complete College America (2011) has recommended, or of creating a one-semester accelerated program as

recommended by Hern (2010). Instead, the faculty chose to develop a program based on Boylan's (2009) recommendation to design the developmental sequence around an RtI structure. The redesigned program incorporated strategies that research suggested might increase overall college readiness (Boylan, 2009; McClenney & Dare, 2012). Each intervention level also incorporated specific literacy skill-building strategies. While the MCC faculty hoped that this restructured program would increase credential completion, no systematic analysis has been conducted to determine if the RtI program has led to increased success for DRW students. A quantitative analysis examining associations between success rates for students enrolled in the MLI program and students enrolled in the RtI program, including analysis of associations between skill level placements, could inform decisions related to further redesign of curricula for this student population.

Evidence of the Problem from the Professional Literature

The RtI college program is based on the K-12 RtI framework described by Fuchs and Fuchs (2009). The goal of the K-12 RtI framework is to reduce numbers of students referred for special education services by implementing systems to identify students performing below grade level followed by targeted interventions designed to increase on-grade-level literacy performance (Fuchs & Fuchs, 2009). RtI programs begin with a universal literacy screening (Center for Response to Intervention at American Institutes for Research, 2015). Students performing below grade-level are then identified, and primary interventions are developed and implemented based on individual student needs (Center for Response to Intervention at American Institutes for Research, 2015). After retesting, students who continue to demonstrate below-grade-level literacy skills are

identified as needing secondary-level interventions, while students demonstrating grade-level skills return to the mainstream population (Center for Response to Intervention at American Institutes for Research, 2015). Implementation of secondary-level interventions is followed by testing with students who show grade-level literacy skills returning to the mainstream population and students continuing to demonstrate below-grade-level skill attainment identified as needing tertiary-level interventions (Center for Response to Intervention at American Institutes for Research, 2015). Finally, students who continue to demonstrate below-grade-level literacy skills when tested after the implementation of tertiary-level interventions are referred for placement into special education programs (Center for Response to Intervention at American Institutes for Research, 2015). Researchers (Duhon, Mesmer, Atkins, Greguson, & Olinger, 2009; Murray, Woodruff, & Vaughn, 2010; Pearce, 2009) have found that early identification followed by implementation of interventions has successfully closed skill gaps more effectively than the traditional practice of testing for placement into special education courses followed by implementation of individualized interventions after placement.

While Boylan's (2009) targeted intervention for developmental education students (TIDES) model adapted the RtI system to a postsecondary population, in reviewing the research I have not found evidence of program-wide implementation of Boylan's recommendations. My review has indicated that numerous programs have implemented specific interventions to address specific problems in single areas of a program, for example, targeting the use of technology to increase individualization of instruction (Hsu & Wang, 2010) or implementing a program-wide emphasis on increasing reading fluency

(Ari, 2011). However, I have not located a description of a DRW program based on a structure of multiple interventions designed to address both remediation of literacy skills and the noncognitive factors which may affect students' ability to complete a program of study.

Definition of Terms

Several of the terms used in this study carry specific meanings when used within the context of postsecondary educational settings.

Course completion—remaining enrolled throughout a semester and earning the grade designated as the required exit competency for the course by the institution (U.S. Department of Education, 2013).

Credential completion—completing all the coursework required within a certificate or degree curriculum (Institution of Education Sciences National Center for Education Statistics Integrated Postsecondary Data System, n.d.).

Developmental education—a financial-aid-eligible course focused on reviewing basic reading, writing, or mathematics skills at levels that fall above elementary but below college level (U.S. Department of Education, 2011).

Persistence—continuous enrollment from one semester to the next semester (Center for Community College Student Engagement, n.d.).

Retention—continuous enrollment from Fall of one academic year to Fall of the following academic year (Institution of Education Sciences National Center for Education Statistics Integrated Postsecondary Data System, n.d.).

Success—persistence, retention, course completion, and credential completion (Center for Community College Student Engagement, n.d.).

Significance of the Study

The problem of low credential completion rates will negatively affect developmental education students when federal funding, particularly the ability for colleges to disburse Pell Grant dollars, becomes tied to credential completion rates beginning with the 2017-2018 academic year (Welsch, 2013). Since most MCC DRW students fund their postsecondary training with Pell Grants, maintaining the ability to provide this source of funding is critical to MCC's continuing to serve the 4,000 (40% of 10,000 total students) who test into DRW courses on admission. Moreover, current labor market trends have indicated that completion of some form of postsecondary credential is essential to employment offering a sustainable wage, even in an entry-level position job (U.S. Department of Labor, 1999). While students who successfully completed MLI programs earned credentials at comparable rates to students entering with college-level literacy skills (Bailey, 2008), the overall low credential completion rates for students who began college in MLI programs have indicated that most of these students left college without the credential that could increase their employability. The causal-comparative study (Creswell, 2012) which included an analysis of associations between success rates for students enrolled in the MLI program and students enrolled in the RtI program as well as associations between success rates at each skill level placement could identify which strategies most effectively increased college success for students entering postsecondary training with below-college-level literacy skills. These findings could lead to a

description of a program that could be replicated with similar populations in similar educational settings (Lodico, Spaulding, & Voegtle, 2010).

Research Questions and Hypotheses

In this study, I investigated the following research questions.

RQ1: What is the association between students' instructional group type—students in the MLI program and students in the RtI program—and student course completion?

Subquestion: What is the association by skill level placement group?

$H_1$0: There is no association between students' instructional group type—students in the MLI program and students in the RtI program—and student course completion.

H_a1: There is an association between students' instructional group type—students in the MLI program and students in the RtI program—and student course completion.

RQ2: What is the association between students' instructional group type—students in the MLI program and students in the RtI program—and student persistence?

Subquestion: What is the association by skill level placement group?

$H_0$2: There is no association between students' instructional group type—students in the MLI program and students in the RtI program—and student persistence

H_a2: There is an association between students' instructional group type—students in the MLI program and students in the RtI program—and student persistence.

RQ3: What is the association between students' instructional group type—students in the MLI program and students in the RtI program—and student retention?

Subquestion: What is the association by skill level placement group?

H_03: There is no association between students' instructional group type—students in the MLI program and students in the RtI program—and student retention.

H_a3: There is an association between students' instructional group type—students in the MLI program and students in the RtI program—and student retention.

RQ4: What is the association between students' instructional group type—students in the MLI program and students in the RtI program—and student credential completion?

Subquestion: What is the association by skill level placement group?

H_04: There is no association between students' instructional group type—students in the MLI program and students in the RtI program—and student credential completion.

H_a4: There is an association between students' instructional group type—students in the MLI program and students in the RtI program—and student credential completion.

Review of the Literature

I began this review of literature with a review of research related to the framework underlying the study, followed by a summary of background related to federal regulations, program accountability requirements, and student demographics. I included research related to strategies that may increase college success along with research related to the specific instructional strategies that faculty incorporated within each intervention level of the MCC RtI program. I conducted this literature review through an online search of educational databases (EBSCO Host Academic Search Complete, ProQuest Central, Sage Premier, and Taylor and Francis Social and Humanities Library) accessed through the Walden University library website. Second, I conducted an online search of state and federal government websites. Search terms included *transformative learning, RtI, persistence, retention, completion, developmental education, developmental reading, developmental writing, financial aid,* and *accountability*.

Theoretical Framework

Freire's (1970) seminal research on literacy as a means of implementing social change created a transformative framework for literacy education. Using literacy to examine societal norms, Freire recommended focusing on critical literacy rather than traditional literacy-skill teaching strategies when working with adult learners from lower socioeconomic backgrounds. Freire stressed the point that, as adult students increased

their ability to critically analyze text, they also increased comprehension and word attack skills. Many adult literacy and developmental educators have incorporated Freire's transformative learning framework into their professional practice because they have recognized the link between lower socioeconomic status and lower literacy skills. The RtI-based program replaced the MLI program, a program grounded in the scaffolded learning model espoused by Vygotsky (Berk & Winsler, 1995). Freire's focus on critical literacy as a transformative tool that produced changes in the learner's approach to life supported the goal of increasing credential completion by adults entering postsecondary training with below-college-level literacy skills, the focus of the RtI-based program. This aligns with the national focus on ensuring that adults with lower levels of literacy skills complete a postsecondary credential, which, when viewed within the context of the economic benefits the credential brings to the learner (U.S. Department of Labor, 1999), could be viewed as an outgrowth of Freire's focus on social change.

Expansion of Transformative Learning Framework

Mezirow (1997) further developed the transformative learning framework, stating that this framework supported personal transformation resulting from an educational experience based on a focus on critical thinking and grounded in the concept of emancipation. Daloz (1986) expanded the transformative learning framework to include developmental learning, stressing that adults pursue education not only for vocational and economic reasons, but also to understand significant issues in their lives. Boyd (1994) included recognizing the importance of the individual student's needs within the transformative learning framework, stressing that individuation can produce motivation

for learning and personal growth leading to vocational and economic development. Dirkx (1998) reviewed transformative learning models for adult education, stressing that the transformative model differed significantly from the instrumental model that focused solely on skills acquisition. Listing Freire (1970), Mezirow, Daloz, and Boyd as contributors to the development of a transformative framework for adult literacy instruction, Dirkx stated that transformative learning incorporated a focus on consciousness-raising, critical reflection, developmental growth, and individuation.

Several more recent studies have supported a focus on literacy instruction as a transformative framework to bring about social change. In a historical analysis of developmental education programs, Arendale (2011) noted that remedial instruction at the college level began in the 1800's when Harvard and other universities implemented remedial literacy programs to provide instruction to students from working-class families. These students had not attended the private schools from which most of the student body had graduated and lacked familiarity with the classical training these schools provided (Arendale, 2011). This background framed Arendale's argument that developmental education programs have acted as an equality-building force in society.

Holst (2010) concluded that adult literacy instruction not only promotes social justice for marginalized members of society but also functions as a force that can move marginalized groups into society's mainstream. Jorgenson and Schwartz (2012) reported the findings of a phenomological study of a citizenship-based literacy education program grounded in a transformative learning framework. The authors found that the participatory instructional style resulted in high levels of student engagement and student

retention and concluded that these factors had led to increased literacy gains and increased student participation in community activities (Jorgenson & Schwartz, 2012). Paris (2012) theorized that "culturally sustaining pedagogy" (p. 93) could increase academic success for minority students. Reviewing the "deficit models" (p. 93) of instruction that focused on correction of errors, Paris stated that a classroom atmosphere in which teachers accept students as they are and recognize the value of each student's cultural heritage may increase academic success.

Belzer and Pickard (2015) reviewed research related to adult literacy learners, concluding that stereotypical depictions of these learners may often reflect unconscious biases of researchers rather than true portrayals of the learner. Belzer and Pickard stated that such portrayals may limit rather than expand the educational outcomes possible for adult learners. Recommending that researchers view adult learners holistically, Belzer and Pickard concluded that meeting learners "where they truly are" (p. 262) could lead to the greatest gains for the learner. Simon and Campano (2013) indicated that teacher research that took place within the classroom setting could lead to increased student achievement, resulting in success that exceeded traditional expectations for low-skilled students. Stating that as adult learners progressed in literacy skills their critical thinking skills also developed, moving from lower-levels of recognition and recall to higher-level analysis and synthesis, Mezirow (2012) concluded that the expansion of critical thinking skills played a vital role in the transformative learning process of adults. These studies emphasized the transformative nature of adult literacy instruction, echoing the need to focus on individuation and cultural awareness emphasized by Dirkx (1998).

RtI as a transformative learning model. Artiles, Bal, and Thorius (2010) stressed that across the country, special education programs have shown disproportionate numbers of minority students referred for services. Artiles et al. stated that the fundamental purpose of RtI was to reduce the number of students placed into special education courses, linking RtI to a transformative learning framework. The authors also stated that providing early, targeted interventions to address skill gaps, thereby increasing grade-level skill attainment, can increase academic achievement.

Abbott and Wills (2012) stated that implementation of an ideal RtI program should result in 80% of students being placed in mainstream programs based on results of universal literacy screenings which demonstrated on-grade-level performance. In this ideal program, only 20% of enrolled students would require any level of intervention. Abbott's and Wills' analysis of the effects of RtI on increasing the initial placement of students into on-grade level courses aligned with the goal of appropriately placing all students, including minority students (Artiles et al., 2010). Because minority students have been referred for special education services in greater numbers than nonminority students (Artiles et al., 2010), RtI could result in more equitable learning environments, justifying including the RtI model within a transformative learning framework.

Vaughn et al. (2010) proposed implementing tertiary-level interventions at the outset of RtI programs for secondary-school students. Vaughn et al. stated that immediate implementation of intense interventions could remediate skill gaps more quickly than gradual implementation of milder interventions, allowing the student to successfully participate in the mainstream instruction in the content areas. Ehren, Deschler, and

Graner (2010) recommended viewing the content literacy continuum as an effective RtI model for secondary students. Like Vaughn et al., Ehren et al. stressed that older learners required more intense interventions from the outset of instruction and benefitted from a more rapid return to mainstream, content-focused instruction. Vaughn's et al.'s and Ehren's et al.'s focus on the differences in learning needs of older students correlated with many aspects of transformative learning theory as synthesized by Dirkx (1998).

Johnston (2010) emphasized RtI's use as an instructional framework rather than as a measurement framework, the focus of RtI implementation at the federal level. Johnston found that when RtI implementation has focused on instructional interventions, even the lowest performing students have developed near-grade-level reading comprehension and word attack skills. Johnston stressed the need for professional development and ongoing evaluation of teaching strategies to identify which interventions most effectively remediate skill gaps. Wilcox, Murakami-Ramalho, and Urick (2013) reviewed implementation of RtI programs in Texas and Michigan, finding that professional development and collaboration were key factors in teachers' viewing RtI as a reforming practice to increase acquisition of literacy skills.

Kozleski and Huber (2010) reviewed RtI implementation, stressing that to affect change, RtI must lead to systemic shifts within educational institutions. The authors noted that an RtI program should be viewed as a system of educational activities, RtI programs should include multiple strategies, and RtI implementation must align across all instructional levels within an institution to support increased educational attainment as students move into mainstream settings (Kozleski & Huber, 2010). Bean and Littlestein

(2012) identified eight essential components of an effective RtI program: (a) establish the conditions required for success; (b) emphasize management and coordination; (c) increase focus on evidence-based instruction; (d) implement a team approach to literacy coaching; (e) provide more focused, evidence-based, frequent interventions for selected students; (f) provide informal support to teachers; (g) work collaboratively with content-area teachers; and (h) increase use of data-driven decision-making. Bean and Littlestein stated that incorporating these elements into an RtI program model could increase success for all students. Increases in educational gains for lower-level students resulting in more equalized educational achievement for all support the transformative learning aspect of an RtI program structure.

Wanzek and Vaughn (2010) described tertiary-level interventions, stressing the need for greater intensity in instructional time and for smaller group size. The combination of a longer instructional period each day with lower teacher-student ratios can increase the effectiveness of the intervention, particularly for older students (Wanzek & Vaughn, 2010). Wanzek and Vaughn stated that tertiary-level interventions serve the needs of learners with the most severe reading disabilities and that these disabilities have often proven difficult to remediate. The authors indicated that tertiary-level interventions should vary in design based on the age of the learner; for example, a phonics-focused intervention might be effective for an elementary-school student, but an intervention designed to remediate decoding difficulties for an older learner would not include the same phonics-focused strategies (Wanzek & Vaughn, 2010). Vaughn and Fletcher (2012) reviewed research on use of RtI with older students, finding that struggling older readers

demonstrated gains in reading comprehension after implementation of interventions based on explicit reading instruction. Likewise, King, Lemons, and Hill (2012) indicated that struggling older readers required intense interventions focused on content literacy instruction to remediate reading difficulties. Fuchs and Vaughn (2012) also stressed that RtI in secondary settings must approach intervention more intensively than in elementary settings and that RtI for secondary students must include content literacy instruction. Wanzek's and Vaughn's, King's et al.'s, and Fuchs' and Vaughn's research supports the concepts of developmentally appropriate education and of individuation, aspects of the transformative learning models described by Dirkx (1998).

Developmental education as RtI. In 2011the Editorial Board of the National Association of Developmental Education (NADE) reviewed the record of NADE suggestions for the reform of programs for DRW students, referencing the fact that NADE researchers' 1980's-era recommendations of allowing enrollment in college-level classes with additional support for high-placing DRW students predated Bailey's 2008 study (Anonymous, 2011). While supporting research-based reforms, the NADE Editorial Board stressed the fact that many of the current legislative policies have been implemented without sufficient research evidence. The NADE Editorial Board emphasized the point that barriers such as lower socio-economic status may affect educational attainment and called for in-depth research related to all interventions for DRW students, stressing that intervention design should correlate to skill level. Edgecombe (2011) reviewed the concept of acceleration, stressing the fact that many types of acceleration models existed. Edgecombe stated that the most important factor in

any developmental program redesign was to structure the program in such a way that students not only progressed more quickly toward credentials, but also received significant support through a curriculum that emphasized college readiness. Edgecombe also stated that overall program redesign may include multiple strategies. The recommendations from NADE and Edgecombe support the concept of designing developmental programs to include an RtI system of structured, tiered interventions that provide instructional support while moving students into college-level work.

Background

In July, 2012 the U.S. Department tightened federal guidelines for financial aid use, which for several years had limited use of federal Pell Grant dollars for developmental instruction to a maximum of 30 credits and total Pell Grant disbursement to the equivalent of sixteen full-time enrolled semesters, or 192 total credits (U.S. Department of Education, 2011). Current regulations have required completion of remedial courses in a maximum of two semesters, reduced total Pell Grant receipt to twelve full-time enrolled semesters, or 144 total credits, and eliminated ability to benefit testing, a program which had allowed students without a high school diploma to begin postsecondary training (U.S. Department of Education, 2012). Today, to receive any form of federal financial aid including a student loan, a student must have earned a high school diploma or GED (U.S. Department of Education, 2012). Moreover, students must declare a program of study and use financial aid dollars only for courses that support that program of study (U.S. Department of Education, 2014). The limits on a student's ability to fund higher education make it essential that developmental education programs

prepare students to succeed in their college-level courses in a maximum of eight months and that the preparation lead to some form of credential in less than ten additional semesters. These limitations on students' funding force developmental education program revisions that ensure compliance with federal guidelines while increasing both skill level gains and credential completion for developmental education students. In addition, President Obama's proposed system of creating a national rating system for postsecondary institutions, like the nation's report card for K-12 systems (National Assessment of Educational Progress, 2014), will tie institutions' credential completion rates to the institutions' ability to disburse financial aid (Welsch, 2013), a system that will force increased focus on credential completion for all postsecondary students. Because most of MCC's developmental education students fund their college education with financial aid dollars (MCC, 2012), designing a program that allows students to complete the developmental sequence within the timeframe designated by the federal government and increases college success for these students is essential to MCC's ability to continue to provide DRW instruction for the neediest group of students.

Federal Accountability and Cost of Developmental Education

Stout (2013) described the Voluntary Framework for Accountability developed by the American Association of Community Colleges. Stout recommended that community colleges join the accountability network, explaining that current higher education assessment models such as the Institute for Education Sciences National Center for Education Statistics Integrated Postsecondary Data Collection System (n.d.) used by the federal government were designed for use with four-year institutions. As a result,

characteristics common to community college students such as greater numbers of part-time, low-income, minority, first-generation college, and academically underprepared students as well as students with a college goal of accessing training to increase employability rather than to complete a degree, all factors that may limit completion of a bachelor's degree, have contributed to community college credential completion rates lagging behind those of four-year institutions (Stout, 2013). Increased demands for accountability (Stout, 2013) support the need to design programs to increase college success for community college students, particularly those students beginning postsecondary training in developmental education classes.

One of the factors influencing federal demands for increased accountability for higher education has been the fact that national organizations such as Complete College America (2011) have declared that developmental education programs are not cost-effective. In response to this charge, Pretlow and Washington (2012) reviewed Benemann's and Harlow's 1993 cost analysis of developmental education programs, arguing that these programs are cost-effective means of increasing literacy skills for underprepared students. Pretlow and Washington contrasted increases in developmental education costs with cost increases associated with several other types of educational programs, showing that the increases in costs of adult literacy instruction were some of the lowest across all types of educational expenditures. Pretlow's and Washington's research has value for developmental educators seeking to document the legitimacy of expenditures for adult literacy programs.

In contrast, Martorell and McFarlin (2011) analyzed the impact of developmental courses on labor market statistics, finding that participation in remedial coursework did not increase employability of individuals assigned to remedial courses. The authors noted several limitations to their study, including the fact that data reflected statistics from only one state, that the research had focused only on the group of students whose placement scores were near the upper cutoff range for placement, and that the question of whether individuals included in the study could have been less employable without the remedial coursework was not addressed (Martorell & McFarlin, 2011). Martorell and McFarlin did not recommend elimination of remedial programs, but did suggest that institutions should examine placement practices, strengthen linkages between remedial and college-level coursework, and assess effectiveness of these two strategies. MCC's RtI program has incorporated both of Martorell's and McFarlin's recommendations into program intervention strategies; the authors' recommendation to assess the effectiveness of programs (Martorell & McFarlin, 2011) supports the need for this study.

Goudas and Boylan (2012) reviewed program evaluations of developmental education programs, noting that in many cases research studies involving small samples and examining specific problems have been taken out of context and used by legislators and other policy makers as justification for extreme changes to developmental program structures such as eliminating or severely limiting access to adult literacy instruction programs. To counter this trend, Goudas and Boylan encouraged developmental instructors and administrators to respond to research and to conduct research themselves with the goal of documenting the positive effects of developmental instruction for adult

learners. In a similar review, Boylan and Bonham (2011) presented research to refute seven claims that detractors of developmental education programs have repeatedly published as evidence of the failure of these programs to increase the college readiness of underprepared students. Goudas' and Boylan's research, combined with Boylan's and Bonham's analysis, support the need for research that may document associations between DRW instruction and college success.

Demographics of developmental education students. Literature produced by researchers working with the Achieving the Dream movement has consistently stressed the fact that each state's system of K-12 education, which forms the pathway into postsecondary training for most newly-admitted community college students, has traditionally differed somewhat in structure, funding, curriculum, and assessment practices (Achieving the Dream, 2010). Community college systems have reflected these differences in K-12 systems such that even within the same state significant differences may be found between urban, suburban, and rural colleges; between single campus and multicampus colleges; between large, midsized, and small colleges; and between the levels of college readiness found among newly-admitted students (Achieving the Dream, 2010). Thus, when examining any community college's program for underprepared students, it becomes important to review state K-12 demographics, particularly as they relate to socio-economic status, high school graduation rates, and high school standardized test scores.

Census bureau data and state K-12 performance. U.S. Census Bureau (2012) data for the state in which MCC is located reflect greater rates of college enrollment of 18

to 24-year-olds than at any time in the past as well as the fact that rates of school enrollment for students over 24 and rates of Hispanic enrollment have increased (U.S. Census Bureau, 2012). Conversely, the state rates of high school completion fell below 30% with rates of college completion falling below 20% for the group of high school graduates who began college (U.S. Census Bureau, 2012). The state report card for K-12 performance as measured by standardized test scores showed performance levels that fell within national averages in reading and below in math (National Assessment of Education Progress, 2014) for MCC's state K-12 performance. However, the state performance levels matched the national numbers only for students performing at Basic or Proficient level; Advanced levels fell below the national averages (National Assessment of Education Progress, 2014). Moreover, while the state average for reading and writing fell within the national averages, only 35% of students tested Proficient in reading and 22% in writing, with the Proficient level identified as the level indicating college readiness (National Assessment of Education Progress, 2014). These data reflected high school performance that fell short of college readiness for most high school graduates, indicating that many of these students would need developmental reading/writing (DRW) instruction to reach college readiness level. State high school performance data, combined with increasing demands for documentation of credential completion by community colleges, support the purpose of the proposed study. In addition, MCC's state has acted as a major refugee resettlement area, with numbers of arrivals of new refugees in 2014 ranking third in the nation following California and New York (Office of Refugee Resettlement, 2015). The school districts surrounding MCC

include students speaking 65 different native languages (MCC, 2012). These data support inclusion of specific strategies to support English Language Learners within the RtI program.

Persistence, Retention, and Completion

Tinto's (1993) work formed a seminal study of the causes of failure to complete postsecondary training. Identifying retention as the key to college success, Tinto highlighted qualities that distinguished successful from unsuccessful students, finding that a major key to success was the student's own goal identification and commitment to that goal. While Tinto's work remains an essential piece of any analysis of retention, persistence, and course/credential completion of adult students, it is important to note that his study addressed only four-year university students, not community college students. Tinto also failed to specifically examine college readiness skill levels of the students included in his study. It is likely, therefore, that significant demographic differences in the student populations studied could affect outcomes of programs based solely on Tinto's recommendations. More recently, Valentine et al. (2011) reviewed research related to programs designed to increase persistence and retention. The authors noted limitations to studies, particularly in research design, that affected generalizability of results and that programs with more intense interventions tended to show stronger associations between program participation and increased persistence and retention. This finding supports the MCC decision to develop more intense interventions for students showing greater gaps in college readiness than for students entering college with higher levels of literacy skills.

Roman, Taylor, and Hahs-Vaughn (2010) reported that, after correlating results from the Community College Survey of Student Engagement (CCSSE) administrations at Florida community colleges, the CCSSE data failed to reliably predict student retention. The authors suggested that viewing the CCSSE information as a possible indicator of at-risk factors while relying on institutional findings as the more reliable measure could help faculty and student services personnel develop more effective interventions to assist students at-risk for failure to complete (Roman et al., 2010). Gibson and Slate (2010) found that the factor that carried the greatest correlation to failure to complete college was first-generation college status. Gibson and Slate suggested that interventions developed for specific demographic groups would more effectively address dropout rates than interventions developed for the college population as a whole. Roman's et al.'s and Gibson's and Slate's research supports the RtI design of specific interventions for specific populations. Danziger (2010) presented evidence from studies that indicated incorporating a focus on the affective domain, particularly on eliminating students' focus on themselves as victims of circumstances over which they have no control, may benefit students placed in developmental education programs. Danziger recommended incorporating an emphasis on the affective domain into literacy instruction, a strategy that has been incorporated into MCC's RtI secondary-level intervention.

Mayo (2013) summarized a review of first year experience programs, suggesting that requiring participation in structured first year experience courses may increase persistence and retention. Mayo's research supports the inclusion of a structured first year experience program as an intervention within the MCC RtI program. McClenney and

Arnsparger (2012) summarized results of a qualitative study of newly-enrolled community college students, finding that students expressed dismay at the differences between their high school experiences, which had led them to believe they would succeed in college, and their actual college experiences. Students discussed frustrations that they experienced related to differences in the amount and level of outside classroom work required in college as opposed to high school, their expectations that high school had prepared them for college contrasted with their actual placement in classes for underprepared students, decreased personal relationships with college instructors compared with high school instructors, and confusion associated with navigating the college system and understanding of college policies and regulations (McClenney & Arnsparger, 2012). McClenney's and Arnsparger's findings support the inclusion of first year experience programs as strategies to increase persistence and retention for underprepared community college students.

Goodman (2013) conducted a quantitative analysis investigating the effects of teaching practices on retention of first year students. Contrasting the responses of White and African American students, Goodman identified significant variance in responses between groups and concluded that different teaching practices impacted the two student groups in different ways. Clarity of teaching and prompt feedback proved to positively affect White students' attitudes toward college but to have limited effect on African American students' attitudes (Goodman, 2013). In contrast, relationship with the teacher and strategies to increase self-efficacy impacted African American students' attitudes to college more than these strategies impacted White students' attitudes (Goodman, 2013).

Goodman recommended incorporating demographic analysis into institutional research related to first year students' retention, and to then disseminate the findings and include the information in professional development activities for faculty to increase retention across demographic groups. Similarly, Barnett (2011) presented data indicating that student-teacher interactions which students found validating could significantly affect the persistence of community college students. Goodman's and Barnett's research supports ongoing analysis of the effectiveness of the First Year Experience RtI intervention as a strategy to increase persistence and retention.

DeAngelo (2013) reviewed First Year Experience programs, concluding that simply having such a curriculum available was not in itself a factor in increasing persistence and retention. Rather, DeAngelo indicated that the link between course participation and increased student engagement with campus activities and with other students formed the decisive link between course enrollment and increased longterm student success. Similarly, Bers and Younger (2014) analyzed research related to the effectiveness of First Year Experience programs in community colleges, stating that the characteristics of community college students created the need to develop distinct First Year programs. Bers and Younger recommended that community colleges offering First Year Experience programs conduct ongoing data analyses to determine the effects of the programs on persistence and retention. Markle (2015) offered similar recommendations after analyzing nontraditional college students' responses to a survey related to factors affecting persistence. Markle found significant differences between traditional and nontraditional students' answers as well as significant differences between male and

female students' responses. Markle noted that failure to recognize differences in responses from different student groups could limit the effectiveness of programs designed to increase persistence and retention.

Gantt (2010) reviewed data from a quantitative survey developed to identify student characteristics that correlated with increased graduation rates at a Texas technical college. For students in the 18-35-age group, declaring a program of study and completing a plan for degree completion within the first two semesters of college enrollment correlated with significant increases in credential completion rates (Gantt, 2010). Gantt noted that early completion of the degree plan appeared to carry greater weight than socioeconomic status, race, or ethnic background. Gantt also noted that gender appeared to factor into credential completion rates, with females showing greater rates of completion than males. Gantt's research supports the requirement of the MCC RtI program that students complete a degree plan within their first semester. Gulley and Mullendore (2014) reported on qualitative research that indicated the positive effects of collaboration between student affairs and academic affairs divisions in community colleges on increasing credential completion. Gulley's and Mullendore's research supports the design of a secondary-level intervention within the MCC RtI program which has focused on increasing collaboration between academic advisors and DRW instructors combined with creating clear pathways to completion of certificates embedded within associate degrees.

RtI Strategies for Developmental Education Students

Brothen (2012) recommended targeting developmental courses to the audience most likely to benefit from the courses; for example, students wishing to major in a health-related area would need to complete the math sequence through college level algebra while a student majoring in a trade such as welding might only enroll in the first-level math course before moving into the content area courses required for the major. Brothen also stressed the need to tie developmental course content to students' career goals to increase motivation to persist. Brothen's recommendations support the content area focus embedded within the MCC RtI program. His focus on motivation and individuation aligns with transformative learning theory as outlined by Dirkx (1998).

Learning communities as RtI strategy. Barbatis (2010) summarized results of a qualitative study which indicated that enrollment in a learning community including a First Year Experience course could significantly increase persistence and retention rates for students placing into the first level of DRW. Popiolek, Fine, and Eilman (2013) found that students who coenrolled in a college credit course and a developmental writing course completed the course, persisted, and re-enrolled in college for their second year at significantly higher rates than students who enrolled only in the developmental writing course. Barnes and Piland (2013) found that, in higher level courses, learning community students outperformed students enrolled in stand-alone developmental English sections and stressed that a one-size-fits-all model of interventions may not produce equal success for all students. The authors recommended developing specific interventions for groups based on entry skill level (Barnes & Piland, 2013). Tukibayeva and Gonyea (2014)

reviewed the effects of three teaching strategies recognized as "high impact practices" (p. 19), service learning, student involvement in research, and learning communities, on student persistence. The authors found that participation in learning communities significantly increased persistence among first year college students (Tukibayeva & Gonyea, 2014). Edgecombe (2011) reviewed the concept of paired courses, stating that the cohort model of coenrollment in both courses appeared to support student course completion and persistence. These authors' research (Barbatis, 2010; Barnes & Piland, 2013; Edgecombe, 2011; Popiolek et al, 2013; Tukibayeva & Gonyea, 2014) supported MCC's inclusion of learning communities and targeted interventions for specific populations within the RtI program.

Fluency as RtI strategy. Paige, Lasinski, and Magpuri-Lavell (2012) emphasized the importance of incorporating fluency into secondary-level reading instruction, noting that fluency affects silent reading comprehension as well as oral reading. Paige et al. recommended including fluency instruction in reading programs and stressed that incorporating broad and deep reading experiences resulted in the most substantial gains in reading comprehension. Paige et al.'s emphasis on the importance of fluency instruction for struggling older readers supports the incorporation of fluency instruction into secondary and tertiary-level interventions within MCC's RtI program.

Guided instruction as RtI strategy. Fisher, Frey, and Lapp (2010) described a guided instruction technique to use with struggling older readers, stating that guided instruction could improve reading comprehension. Huang and Newbern (2012) investigated the effect of explicit instruction on adult ESL learners' improvement in

reading as measured by standardized tests. A second research focus was the effect of explicit instruction in metacognitive reading strategies on the students' application of the strategies while reading (Huang & Newbern, 2012). Huang and Newbern found positive gains in posttest scores and in students' reported reactions to the reading strategy instruction. Marchand-Martella, Martella, Modderman, Petersen, and Pan (2013) proposed a matrix of five components of successful adolescent/adult literacy instruction that included word study, vocabulary, fluency, comprehension, and motivation. Unlike the National Reading Panel Report (2000), the authors did not list phonemic awareness and phonics as essential elements (Marchand-Martella et al., 2013). However, the authors noted that these skill areas should not be overlooked, but should be incorporated through individualized, targeted instruction as indicated through students' diagnostic results (Marchand-Martella et al., 2013). Marchand-Martella's et al.'s research fills a gap in studies of programs for struggling older readers by recognizing that instructional focus must shift to include motivation, but that instruction in individual skill components still should receive emphasis. The research reviewed supports the inclusion of guided instruction as a strategy incorporated into the secondary and tertiary-level interventions of MCC's RtI program.

Language acquisition as RtI strategy. Krashen's (1982) seminal text on second language acquisition led to extensive changes in language teaching methods. While he emphasized the natural process of language acquisition as the primary strategy to develop communicative competence, Krashen noted that grammar instruction could provide a valuable tool by offering a reference point from which to approach differences in forms.

Krashen's work supports the inclusion of grammar instruction in the tertiary and secondary-level interventions of MCC's RtI program. Cummins (2008) introduced the term CALP, cognitive academic learning proficiencies, to identify the academic vocabulary, mechanics, and grammatical structures that do not affect everyday communication but are necessary for academic success. Cummins noted that academic language is a learned rather than a naturally-acquired aspect of communication. His seminal work on acquisition of academic language demonstrated that the timeframes necessary for acquisition of academic language were greater than those needed for acquisition of daily communicative vocabulary and structures and that academic language acquisition required explicit, direct instruction. Cummins' research supports the incorporation of instruction in academic language into MCC's tertiary and secondary level RtI interventions.

Gonzalez, Pagan, Wendell, and Love (2010) defined the term culturally and linguistically diverse (CLD) learners and provided examples of research based strategies to increase academic language acquisition. In their discussion, Gonzalez et al. recognized that cultural and linguistic diversity could affect learning and that even native English speakers who came from minority populations often exhibited gaps in language fluency like the gaps demonstrated by second-language speakers. Bifuh-Ambe (2011) expanded the linkage between academic language acquisition and academic success, finding that a student's level of academic language fluency could affect not only course success but persistence. Gonzalez et al. and Bifuh-Ambe linked current practice to Krashen's and Cummins' work, supporting the need to focus on academic language acquisition in

literacy instruction. Because over 50% of MCC's DRW students come from minority backgrounds (MCC, 2012), the RtI program design included instructional strategies to build academic language fluency.

Hornberger and Link (2012) examined bilingual education in the context of No Child Left Behind (U.S. Department of Education, 2001). The authors concluded that CLD students' academic performance fell below levels reported for standard English speakers (Hornberger & Link, 2012). Hornberger and Link recommended incorporating translanguaging, defined as using multiple linguistic formats in discourse, as a strategy to increase academic performance for CLD students. In a qualitative study of the effectiveness of teacher incorporation of culturally responsive reading strategies McIntyre and Hulan (2012) found that blending culturally responsive instruction with evidence based practices increased reading achievement. Hornberger's and Link's and McIntyre's and Hulan's research supports including a focus on the needs of CLD students in literacy instruction programs, an important factor for MCC where 20% of the developmental student population (MCC, 2014) come from nonstandard English-speaking backgrounds.

Technology integration as RtI strategy. Mongilio and Wilder (2012) found that incorporating expository writing activities designed according to online gaming parameters could improve writing skills for at-risk college students. The system examined by Mongilio and Wilder required participants to provide feedback on why they had made choices in developing their written descriptions, also allowing the instructor to analyze students' reading comprehension skills. Mongilio and Wilder suggested that

further research was needed on the relationship between online gaming simulations and increased reading and writing skills for at-risk students. Mongilio and Wilder's research supports the integration of technology instruction into the primary and secondary skill levels of the RtI program.

Content literacy as RtI strategy. Flippo (2011) concluded that integrating reading/writing instruction with instruction in study strategies could increase college readiness for underprepared students. Flippo's findings support MCC DRW faculty's inclusion of study skills in the secondary-level intervention of the RtI program. Johnson, Watson, Delahunty, McSwiggen, and Smith (2011) examined the curriculum design of content literacy programs, finding that focusing on discipline-specific reading strategies increased student performance at greater rates than instruction in content area vocabulary without instruction in reading strategies related to the content area. Perin, Bork, Peverly, Mason, and Vaselewski (2011) provided a quantitative analysis of a DRW course which incorporated a focus on content literacy into a program of contextualized reading and writing instruction. Perin's et al.'s findings that the experimental group that received contextualized reading/writing instruction showed greater gains in literacy skills than the control group, which received traditional reading/writing instruction focused on basic skills, also support the inclusion of a content literacy intervention within MCC's RtI program.

Perin (2012) reviewed 27 studies of literacy instruction programs for adults, contrasting integrated-skills models in which a content area instructor taught reading and writing skills embedded into content instruction with contextualized learning models

where a basic skills instructor taught reading/writing strategies using contextualized materials. In the contextualized learning programs reviewed, students were also enrolled in a content area course. Perin concluded that contextualizing instruction led to greater gains in literacy skills and acquisition of content knowledge than embedding literacy instruction within a content area course. Hamilton (2013) recommended contextualization as a strategy to increase both literacy skills and content area knowledge after reviewing the Washington State program models. Hamilton stressed that contextualization should not be viewed as a panacea and recommended that decisions related to contextualization strategies should include consideration of student skill levels. In a causal-comparative analysis of six Arkansas community college developmental education programs, Carrol, Kersh, Sullivan, and Fincher (2012) found the highest credential completion rates in a career pathway program. Carrol et al. indicated that incorporating concurrent enrollment in content area courses with contextualized DRW instruction had contributed to the increased credential completion rates for developmental education students. Edgecombe (2011) stated that designing contextualized reading/writing support courses to complement enrollment in a college level course can increase success for developmental students. All the research reviewed (Carrol et al., 2012; Edgecombe, 2011; Hamilton, 2013; Perin, 2012) supports the MCC primary-level intervention of enrollment in a content area course with concurrent enrollment in a reading/writing course focusing on content literacy instruction.

Acceleration as RtI strategy. Brothen (2012) presented suggestions for refocusing developmental education programs, emphasizing the importance of examining

success measures other than course completion alone as an indicator of program success. While recommending concurrent enrollment in college level courses as an effective method to increase student retention and credential completion, Brothen stated that students with lower ranges of placement scores would struggle if they initially enrolled in a college level course, even if significant levels of teacher based or tutoring support were provided. Hern (2014) documented significantly increased success for students who self-placed into a one-semester accelerated developmental writing course as opposed to the traditional two-semester sequence. Hern's discussion of the accelerated program focused on the fact that 62% of all students enrolled in the one-semester sequence passed the course. However, Hern accompanied this information with a statement that only 48% of students scoring below 50 on the Accuplacer exam (College Board, 2014), the group normally targeted for a two-semester sequence, passed the accelerated course. While Hern's data clearly documented increased success in college level courses for the students who succeeded in the accelerated course, she included no discussion of persistence, retention, or completion rates for the total 38% of nonpassing students or the 52% of low-scoring students who did not pass the accelerated course. This gap in practice contributed to MCC's faculty rejecting the one-semester sequence and choosing instead to develop an RtI program incorporating structured interventions targeted to specific skill levels as recommended by Brothen and Boylan.

The Community College of Baltimore County (CCBC) has offered an Accelerated Learning Program (ALP) for developmental English students since 2007 (Coleman, 2014). In this model, students placing one level below college ready on institutional

placement measures enrolled in freshman composition combined with an additional support course taught by the same instructor, with the composition course ratio approximately 1:3 developmental to 2:3 college ready students (Coleman, 2014). While Coleman's review of six Michigan colleges that have implemented ALP programs indicated increased success for near-college ready students placed into college level courses, she cautioned against assuming that this acceleration strategy would prove equally effective for lower-skilled learners. In a quantitative study using multivariate analysis, Cho, Hopko, Jenkins, and Smith Jaggars (2012) reviewed ALP data, finding that students who enrolled in the highest-level developmental English course while concurrently enrolling in freshman composition showed substantially higher success rates than did students who enrolled sequentially in the stand-alone developmental English course followed by enrollment in freshman composition. The ALP students also showed higher persistence, retention, and credential completion rates than students in traditional developmental writing classes although these rates were slightly lower than those of students initially placing college ready (Cho et al. 2012). CCBC's ALP data did not include students whose college entrance placement scores reflect skills below tenth-grade equivalency (Cho et al., 2012). Both studies support the inclusion of acceleration as an intervention for upper-level students but indicated that alternative interventions for lower-scoring students would more effectively address the needs of this group. These conclusions support the structure of tertiary-level, secondary-level, and primary-level interventions in MCC's RtI program.

Placement revisions for acceleration as RtI strategy. Brothen (2012)

recommended implementing multiple assessment measures prior to placing students into developmental reading, writing, and math courses. Capt and Oliver (2012) recommended incorporating a holistic view of student characteristics to increase appropriate placement. Pretlow and Wathington (2013) provided a quantitative analysis of population demographics related to students placing into developmental education programs at Texas community colleges. While Pretlow and Wathington recommended eliminating the requirement of placement testing for students graduating with the recommended or distinguished Texas high school diploma, stating that the rigorous coursework and GPA requirements for award of these credentials could be accepted as evidence of readiness for college level work, the authors cautioned that variations among states in high school graduation requirements and in systems for awarding high school diplomas should lead community colleges to investigate ways to align high school exit and college entrance requirements before eliminating placement testing (Pretlow & Wathington, 2013). Smith Jaggars and Hodara (2013) conducted a case study of an urban community college district, finding that the college's emphasis on success versus access could affect whether a student placed into developmental or college level courses and could also affect student progression into college level courses. Jackson and Kurlaender (2014) reviewed placement systems, finding that incorporating use of high school grade point average could add an extra measure of placement accuracy beyond that of the placement instruments used by colleges. The research cited supports MCC's faculty's inclusion of a revised placement system, including multiple assessment measures for placement and progression, into the RtI program for DRW.

Implications

The findings from the data analysis offered insight into what associations were between overall success rates for students enrolled in the MLI DRW program and students enrolled in the RtI DRW program. Findings also indicated what associations existed between skill level placement and student success. These findings could support an outcomes-based curriculum evaluation report or a position paper supporting a policy recommendation.

Summary

The MCC DRW RtI program evolved in response to national trends that encourage acceleration of developmental students into college level courses and to changes in federal funding that mandate a focus on credential completion for all students. The DRW faculty selected this structure after conducting a review of the literature that indicated the RtI program might be a more appropriate strategy for the local population than acceleration models implemented in other educational settings. Because the faculty had not conducted a systematic analysis of each intervention level or of overall program effectiveness since the implementation of program revisions, I analyzed associations between rates of course completion, persistence, retention, and credential completion for students enrolled in the MLI program and students enrolled in the RtI program in this quantitative study. I also included an analysis of associations between college success and skill level placements for each program. In the next section I addressed the methodology including research design and approach, setting and sample, instrumentation, and data collection/analysis procedures. I addressed the limitations of

the study, and I reported the findings in relation to the research questions. Based on the results of data analysis, I developed a project study, using the genre of a position paper supporting a policy recommendation. In the description of the project study I addressed implications for social change and the importance of the project to local stakeholders. I discussed conclusions derived from the policy recommendation project, followed by a personal analysis of my growth as a scholar, a practitioner, and a project developer. I concluded the study with a discussion of the importance of the work in the context of the local institution, the community, and the potential impact on the field of higher education.

Section 2: The Methodology

Introduction

In this quantitative study, I used a quasiexperimental design (Creswell, 2012) to examine archival data. According to Creswell (2012), quasiexperimental research is an appropriate research design for situations in which it would be either impossible or unethical to conduct a true experimental study. In the case of this study, at the point at which data analysis began (Fall 2015), the RtI program had replaced the MLI program, with implementation of interventions beginning in Fall 2012 and continuing through Fall 2014. Thus, random assignment to a control group formed by students enrolled in the original MLI program and to an experimental group formed by students enrolled in the RtI program was not possible.

Research Design and Approach

I used a causal-comparative approach (Lodico, Spaulding, & Voegtle, 2010) to determine what the associations were between college success rates for students beginning postsecondary training in DRW courses at MCC in the MLI program and students beginning in the RtI program. According to Lodico, Spaulding, and Voegtle (2010), causal comparative research "seeks to explain differences between groups by examining differences in their experiences" (p. 13). The RtI program incorporated experiences that were not built into the design of the MLI program for DRW. Faculty selected all the intervention strategies because of research indicating these experiences might increase success for DRW students. Because specific interventions were

implemented at each instructional skill level, I included analysis of success rates for each skill level placement.

Setting and Sample

MCC was the setting for the study. The population I studied included all the students enrolled in any level of DRW between Spring 2011 and Spring 2015. The control group included the 10,079 enrolled in the MLI program between Spring 2011 and Summer 2012. The treatment group included the 3,852 students enrolled in the RtI program between Fall 2012 and Spring 2015. Data analysis began with the Spring 2011 semester because during this semester the college instituted an enrollment verification process through which any student failing to attend during the first two weeks of a course was purged from the course enrollment (MCC, 2011). A result of this collegewide attendance monitoring was that course completion data prior to Spring 2011 could include students who had never attended, with those students showing either a W (withdrawal) or 0.0 (failing grade). This fact would skew data and, therefore, these data needed to be excluded.

According to Lipsey (1999), the minimum sample size based on a power analysis of .80 with alpha of .05 and effect size of .5 is 65. When broken into groups by program (MLI/RtI), subject area (reading/writing), and skill placement levels, the smallest group size was 160, a large enough sample to yield sufficient power for the data analysis. Study participants met criteria for inclusion by enrolling in one or more DRW courses at MCC during the time frame covered by the study. Table 2 shows the numbers of participants included in each of the study's groups.

Table 2

Numbers of Participants by Program and Skill Level Placement

Skill placement level	MLI program	RtI program
Total program	10,079	3652
4-or-more-below college	348	299
2-3-below-college reading	3457	1298
2-3-below-college writing	3437	160
1-below college	2858	1914

This criterion defined the population as being age 18 or older and having tested into one or more DRW courses through MCC's required placement testing. The control group included instructional levels for students beginning college with tenth-grade to early twelfth-grade-level equivalency (one-level-below-college ready), beginning eighth-grade to starting tenth-grade-level equivalency (two-levels-below-college ready), beginning sixth-grade-level to eighth-grade-level equivalency (three-levels-below-college ready level), and below sixth grade-level equivalency (four-levels-below-college ready). The treatment group included intervention levels for students beginning college with scores ranging from beginning tenth-grade to early twelfth-grade-level equivalency (primary-level intervention), beginning eighth-grade to starting tenth-grade-level equivalency (secondary-level intervention), and below beginning eighth-grade-level equivalency (tertiary-level intervention). Each subgroup represented a group enrolled in

an instructional level in the control group and a group receiving a specific intervention in the treatment group.

Instrumentation and Materials

I collected archival data from the MCC institutional database (2014). I did not use any other instruments. I entered data into the Statistical Package for the Social Sciences (SPSS) software program and analyzed the data using SPSS.

Data Collection and Analysis

The 2014 MCC institutional database housed raw data including archival records of placement levels, enrollment records, records of course grades, and records of degrees/certificates awarded. According to the MCC director of institutional research (personal communication, March, 2012), program administrators may access records of placement levels, enrollment, and grades through the institutional database. The database had the capability of generating reports of students progressing through sequences of courses and of students earning degrees and certificates. Program administrators may also generate progression reports indicating enrollment in subsequent semesters and levels of coursework as well as data related to credentials awarded and students transferring to four-year institutions (MCC director of institutional research, personal communication, March, 2012). I documented permission to use institutional data for the purposes of this study in a letter from the MCC director of institutional research as part of the Walden University Institutional Review Board approval process. I received approval from the Walden University Institutional Review Board to proceed to the final study on June 26, 2015 with the approval number 6-26-15-0300754.

Data Used for Measurement of Each Study Variable

The independent variable was placement in a DRW course in either the MLI program (control group) or the RtI program (treatment group). I used archival records of students enrolled in DRW courses to provide data to measure the primary independent variable. For the subquestion related to each primary research question, an additional independent variable was skill level placement. For subquestions, I disaggregated enrollment records by skill level placement. Dependent variables were course completion, persistence, retention, and credential completion. All variables were nominal.

Descriptive and Inferential Statistics

Because all data related to the research questions for this study were nominal data, I did not calculate descriptive statistics (Triola, 2012). I assessed the association between the instructional group and each dependent variable through cross tabulations with chi-square analysis (Triola, 2012). I included the distributions of participants within groups and by the variables examined in each chi-square analysis I performed. I used the phi coefficient (Triola, 2012) for the effect size. I also used chi-square analysis (Triola, 2012) to address the subquestions related to each primary research question, the associations by skill placement level. For each dependent variable, I repeated the chi-square analysis for each skill level placement subgroup. Table 3 shows the definitions of dependent variables, the coding assigned to each, the scale for each dependent variable, data collection tools, data points yielded, and type of data analysis used.

Table 3

Data Collection Tools and Analysis for Dependent Variables

SPSS coding	Scale	Data collection tools	Data points	Analysis
0 = completed course no; 1 = completed course yes	Nominal	Archival records of students achieving skill placement level gains – student level data	Course completion MLI and RtI groups and skill level placement groups	Crosstabulations with chi-square analysis; phi coefficient used for effect size statistic
0 = persisted no; 1 = persisted yes	Nominal	Archival enrollment records – student level data	Persistence MLI and RtI groups and skill level placement groups	Crosstabulations with chi-square analysis; phi coefficient used for effect size statistic
0 = retained no; 1 = retained yes	Nominal	Archival enrollment records – student level data	Retention MLI and RtI groups and skill level placement groups	Crosstabulations with chi-square analysis; phi coefficient used for effect size statistic
0 = earned degree/certificate no; 1 = earned degree/certificate yes	Nominal	Archival records of students earning degrees and/or certificates – student level data	Credential completion MLI and RtI groups and skill level placement groups	Crosstabulations with chi-square analysis; phi coefficient used for effect size statistic

Assumptions

I assumed that any increase in student success rates was attributable to implementation of the DRW program and that the students were similar. The second assumption was that success rates might differ by skill placement level. Because

students' entry-level skills varied, data analysis included groupwide analysis for each program as well as analysis by skill placement level for each program.

Limitations

The timeframe of the study (academic semesters Spring 2011 through Spring 2015) formed a limitation in that intervention levels were implemented at different times during the overall study period. Although the DRW population remained the same throughout the study, interventions had been in place for varying amounts of time, limiting the total amount of data available for comparison of some of the RtI program interventions with the comparable skill placement level in the MLI program. The limitation of time could have affected the accuracy of conclusions related to the effectiveness of the revision of the upper-level reading course and the two-to-three-below-college level writing course, which were piloted between Fall 2014 and Fall 2015 and brought to scale during Spring 2015, the final semester of the study. Finally, completion of a degree or certificate required a minimum of two semesters for students beginning postsecondary education in a college ready program of study. For students requiring developmental reading and/or writing instruction, a minimum of four semesters was required to complete the first certificate. Moreover, the total numbers of semesters required to complete a degree or certificate vary by program, with ranges from one semester for certificates such as Certified Nursing Assistant and Pharmacy Technician to five for an associate's degree (MCC, 2014). Adding the semesters required for developmental instruction means that students needed at least seven semesters to complete an associate's degree. Thus, findings related to credential completion by

students beginning college in the RtI program for DRW were limited because their total time in college had not allowed completion of the credential that was their goal.

Scope and Delimitations

The scope of this study was to examine what associations were between enrollment in a MLI program for DRW and enrollment in a RtI program for DRW and college success for developmental students. The study was delimited to one community college. A second delimitation was that the study did not address increases in reading/writing skills as measured by standardized test scores.

Measures Taken for the Protection of Participant Rights

For the purposes of this study, I examined de-identified, archival data. I assigned numbers (student one, student two, and so on) to individual student records so that I included no records of individual student name, student number, or student social security number in the data analysis. Population subgroups were large, making it difficult to identify individual students simply by identifying instructional/intervention level. Moreover, because of my supervisory role in the program undergoing evaluation, I did not include any information that could identify individual instructors. I did not collect any information related to course section numbers, instructor names, instructor employee numbers, or instructor social security numbers.

Data Analysis Results

To address the research questions related to this study, I conducted a chi-square analysis of data related to each research question and sub question. The data related to Research Question 1, what is the association between instructional group— students in

the MLI program and students in the RtI program— and student course completion, included course completion records of all students enrolled in the MLI program and the RtI program during the study timeframe. I defined successful course completion as students' successfully completing the course and meeting exit competency by showing at least one level advance in skill versus students' failing to complete the course or failing to advance at least one skill level. The chi-square analysis showed that 59% of students enrolled in the MLI program successfully completed coursework while 65% of students enrolled in the RtI program successfully completed coursework, advancing at least one skill level at the end of their semester's enrollment. Based on the analysis, the chi-square value was equal to 39.765 ($\chi 2 = 39.765$) with $p = 0$. Since the p value was less than .05, the value generally accepted for educational research (Lodico et al., 2010), the test was statistically significant. Because of this data analysis, I rejected the null hypothesis that there was no association between instructional group and course completion. Students enrolled in the RtI program showed greater rates of course completion than students enrolled in the MLI program. Table 4 shows the results of the chi-square test.

Table 4

Association Between Instructional Group and Course Completion

Program	Course completion no		Course completion yes	
	n	Rate	*n*	Rate
MLI program	4141	41%	5938	59%
RtI program	1283	35%	2369	65%

Note. $\chi 2 = 39.765$; $p = 0$

Subquestion

Analysis of data related to the subquestion referring to what was the association by skill placement level yielded the following results. For the four-or-more-below-college skill level placement group (combined reading and writing instruction), 53% of students enrolled in the MLI program successfully completed courses while 58% of students enrolled in the RtI program successfully completed courses, increasing at least one skill level within a semester. The chi-square value was 648.971 ($\chi 2 = 648.791$) with $p = 0$. The result was statistically significant, so I rejected the null hypothesis that there was no association between instructional group and course completion by skill level placement for the four-or-more-below-college skill level placement group. Students enrolled in the RtI program showed greater rates of course completion than those enrolled in the MLI program. Table 5 shows the results of the chi-square test for the four-or-more-below-college skill level placement group.

Table 5

Course Completion for Four-or-more-below-college Skill Level Group

Program	Course completion no		Course completion yes	
	n	Rate	*n*	Rate
MLI program	163	47%	185	53%
RtI program	116	42%	163	58%

Note. $\chi 2 = 648.971$; $p = 0$

For the two-to-three-below-college skill level placement group (separate reading and writing instruction), 56% of students enrolled in reading courses in the MLI program successfully completed courses, increasing at least one skill level, and 74% of students enrolled in reading courses in the RtI program successfully completed courses, increasing at least one skill level. The chi-square value of 127.458 ($\chi 2 = 127.458$) with $p = 0$ was statistically significant; thus, I rejected the null hypothesis that there was no association between instructional group and course completion by skill level placement for the two-to-three-below-college level reading skill level placement group.

Reading courses for students placing two to three levels below college ready in both the MLI program and the RtI program offered opportunities for students to advance by more than one skill level, skipping an additional semester of reading instruction. Analysis of data related to students advancing two or more skill levels showed that 5% of students enrolled in the MLI program advanced more than one skill level in reading within a semester while 60% of students enrolled in the RtI program advanced more than one skill level in reading within one semester. Because the chi-square value of 1764.95

($\chi 2 = 1764.95$) with $p = 0$ was statistically significant, I rejected the null hypothesis that there was no association between instructional group and course completion by skill level placement for the two-to-three-below-college reading skill level placement group advancing two or more skill placement levels. In each case, students successfully completing courses and advancing one skill level as well as students successfully completing courses and advancing two or more skill levels, students enrolled in the RtI program showed greater rates of course completion than students enrolled in the MLI program. Table 6 shows the results of the chi-square analysis for the two-to-three-below-college-reading skill level placement group.

Table 6

Course Completion for Two-to-three-below-college-reading Skill Group

Program	Course completion no		Course completion yes	
	n	Rate	*n*	Rate
MLI program 1-level increase	1523	44%	1934	56%
RtI program 1-level increase	339	26%	959	74%
MLI program 2+-level increase	3275	95%	182	5%
RtI program 2+-level increase	516	40%	782	60%

Note. $\chi 2$ (1-level increase) = 127.458; p = 0; $\chi 2$ (2+level increase) = 1764.95; p = .001

For the two-to-three-below-college skill level placement group of writing instruction, 60% of students enrolled in the MLI program successfully completed courses while 72.5% of students enrolled in the RtI program successfully completed courses. The

chi-square value of 10.032 ($\chi 2 = 10.032$) with $p = .001$ was statistically significant. Consequently, I rejected the null hypothesis that there was no association between instructional group and course completion by skill level placement for the two-to-three-below-college level writing skill level placement group. Students enrolled in the RtI program showed greater rates of course completion than students enrolled in the MLI program. Table 7 shows the results of the chi-square analysis for the two-to-three-below-college-writing group.

Table 7

Course Completion for Two-to-three-below-college-writing Skill Group

Program	Course completion no		Course completion yes	
	n	Rate	*n*	Rate
MLI program	1380	40%	2057	60%
RtI program	44	27.5%	116	72.5%

Note. $\chi 2 = 10.032$; $p = .001$

For the one-below-college skill level placement group (reading instruction only), 62% of students enrolled in the MLI program successfully completed reading courses, increasing one skill level while 59% of students enrolled in the RtI program successfully completed reading courses, increasing one skill level. The chi-square value of 4.533 ($\chi 2 = 4.533$) with $p = .034$ was statistically significant, resulting in the rejection of the null hypothesis that there was no association between program and course completion by skill placement level. For the one-below-college level group, students enrolled in the MLI program showed a greater rate of course completion than students enrolled in the RtI

program. Table 8 shows the results of the chi-square analysis for the one-below-college skill level placement group. Figure 1 summarizes the results for findings related to the associations between course completion and instructional group and the association by skill placement level.

Table 8

Course Completion for One-below-college Skill Level Group

Program	Course completion no		Course completion yes	
	n	Rate	*n*	Rate
MLI program	1078	38%	1760	62%
RtI program	786	41%	1128	58%

Note. $\chi 2 = 4.533$; $p = .034$

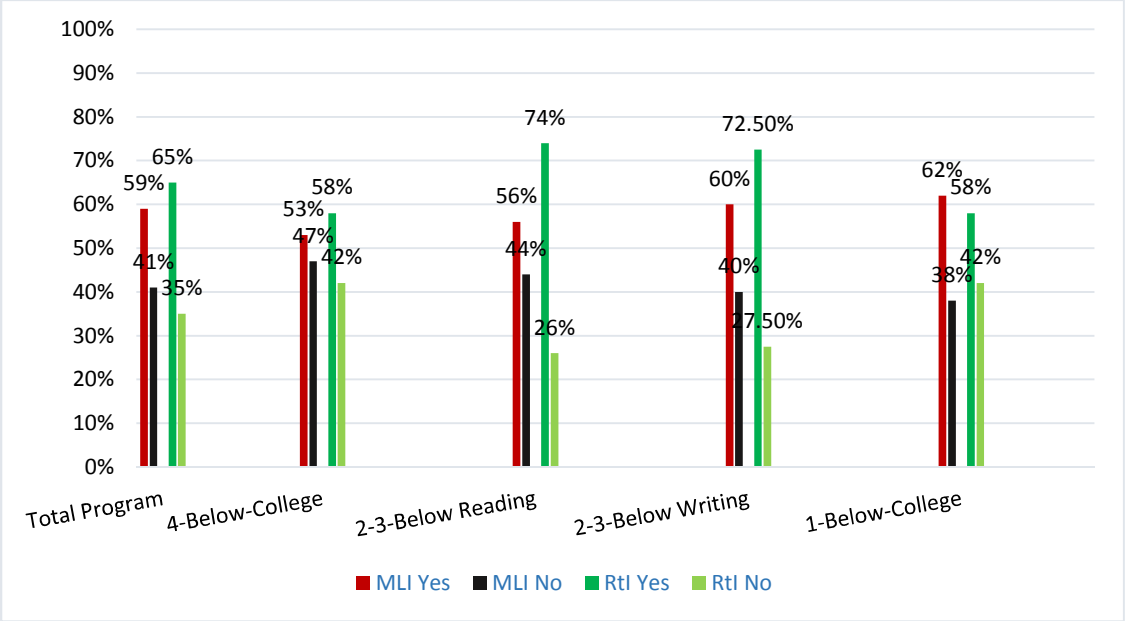

Figure 1. Course completion for instructional group and skill placement levels

One-below college RtI-group intervention. The basis of the intervention designed for the one-below-college skill level placement students enrolled in the RtI instructional group was contextualized reading instruction linked to a college level course in which students coenrolled. Implementation of this intervention across the RtI one-below-college skill level placement group took place in Spring 2015. Students enrolled in the MLI program did not have the opportunity to coenroll in a college level course until they had successfully completed the final level of reading instruction; therefore, it was not possible to determine an association between completion of a college level course and instructional group (MLI program or RtI program) for this study.

Analysis of one-below-college RtI intervention. To assess the association between successful completion of the reading course designed to support coenrollment in the college level course and successful completion of the college level course, the purpose of the intervention, I conducted a chi-square analysis for the RtI group of coenrolled students. The chi-square analysis showed that 45% of coenrolled students failed to successfully complete their reading course while 55% of coenrolled students successfully completed the reading course, advancing to a skill placement level of college ready reading. The analysis also showed that 0% of students failing the reading course successfully completed their college level course while 64% of students who successfully completed their reading course passed their college level course, defined by earning the exit competency specified by the course in which they had coenrolled. The chi-square

value for this analysis was 50.601 ($\chi 2$ =50.601) with $p = 0$. The test was significant; therefore, I rejected the null hypothesis that there was no association between successful completion of the contextualized reading course and successful completion of concurrent enrollment in a college level course. Table 9 shows the results of this analysis.

Table 9

Association Between Completion of Reading and College Level Course

RtI contextualized reading	Pass college course no		Pass college course yes	
	n	Rate	*n*	Rate
Failed to complete reading	40	100%	0	0%
Completed reading	49	35%	87	65%

Note. $\chi 2 = 50.601$; $p = 0$

Research Question 2

The chi-square analysis of records of students enrolling in the semester following initial enrollment, the data related to Research Question 2, relating to the association between instructional group— students in the MLI program and students in the RtI program— and student persistence, showed that 61% of students enrolled in the MLI program persisted while 66% of students enrolled in the RtI program persisted. Analysis yielded a chi-square value of 16.661 ($\chi 2 = 16.661$) with $p = 0$. Because the p value was less than .05, the test was statistically significant. Therefore, I rejected the null hypothesis that there was no association between instructional group and persistence. Students enrolled in the RtI program showed greater rates of persistence than students enrolled in the MLI program. Table 10 shows the results of the chi-square analysis.

Table 10

Association Between Instructional Group and Persistence

Program	Persisted no		Persisted yes	
	n	Rate	*n*	Rate
MLI program	1497	39%	2365	61%
RtI program	1516	34%	2887	66%

Note. $\chi 2 = 16.661$; $p = 0$

Subquestion

While MCC's institutional data base included persistence data for students enrolled in the four-or-more-below-college skill level placement group within the MLI instructional group, the design of the RtI-program intervention for this skill level was enrollment in a noncredit, non-financial-aid-eligible course. MCC's data base did not track persistence, retention, or credential completion for noncredit programs. The institutional data base included course completion data for the noncredit reading/writing course, allowing the comparison of course completion rates for students enrolled in the MLI and the RtI programs. The lack of data related to persistence, retention, and credential completion for noncredit students prevented an analysis of an association by skill level placement with respect to these dependent variables for the four-or-more-below-college skill level placement group.

Analysis of data related to what was the association (persistence) by skill placement level showed that for the two-to-three-below-college skill level placement group (separate reading and writing instruction), 64% of students enrolled in reading

courses in the MLI program persisted while 69% of students enrolled in reading courses in the RtI program persisted. The chi-square value was 9.571 ($\chi 2 = 9.571$) with $p = .002$. The result was statistically significant, so I rejected the null hypothesis that there was no association between instructional group and persistence by skill level placement for the two-to-three-below college reading skill level placement group. Students enrolled in the RtI program showed greater rates of persistence than those enrolled in the MLI program. Table 11 shows the results of the chi-square analysis.

Table 11

Persistence for Two-three-below-college-reading Skill Level Group

Program	Persisted no		Persisted yes	
	n	Rate	*n*	Rate
MLI program	692	36%	1211	64%
RtI program	391	31%	989	69%

Note. $\chi 2 = 9.571$; $p = .002$

For the two-to-three-below-college-writing skill level placement group, 40.5% of students enrolled in the MLI program persisted, and 56% of students enrolled in the RtI program persisted. The chi-square value of 24.826 ($\chi 2 = 24.826$) with $p = 0$ was statistically significant. I rejected the null hypothesis that there was no association between instructional group and persistence by skill level placement for the two-to-three-below-college-writing skill level placement group. Students enrolled in the RtI program showed greater rates of persistence than students enrolled in the MLI program. Table 12 shows the results of the chi-square analysis.

Table 12

Persistence for Two-to-three-below-college-writing Skill Level Group

Program	Persisted no		Persisted yes	
	n	Rate	*n*	Rate
MLI program	1127	59.5%	766	40.5%
RtI program	119	44 %	154	56 %

Note. $\chi 2 = 24.826$; $p = 0$

For the one-below-college skill level placement group (reading instruction only), 66% of students enrolled in the MLI program persisted while 65% of students enrolled in the RtI program persisted. The chi-square value of 420 ($\chi 2 = 420$) with $p = .271$, a value greater than .05, was not statistically significant; therefore, I resulting in the decision to failed to reject the null hypothesis that there was no association between instructional group and persistence for the one-below-college skill level placement group. Table 13 shows the results of the chi-square analysis. Figure 2 shows the results related to the association between persistence by instructional group and by skill level.

Table 13

Persistence for One-below-college Skill Placement Group

Program	Persisted no		Persisted yes	
	n	Rate	*n*	Rate
MLI program	481	34%	875	66%
RtI program	568	35%	1044	65%

Note. $\chi 2 = 420$; $p = .271$

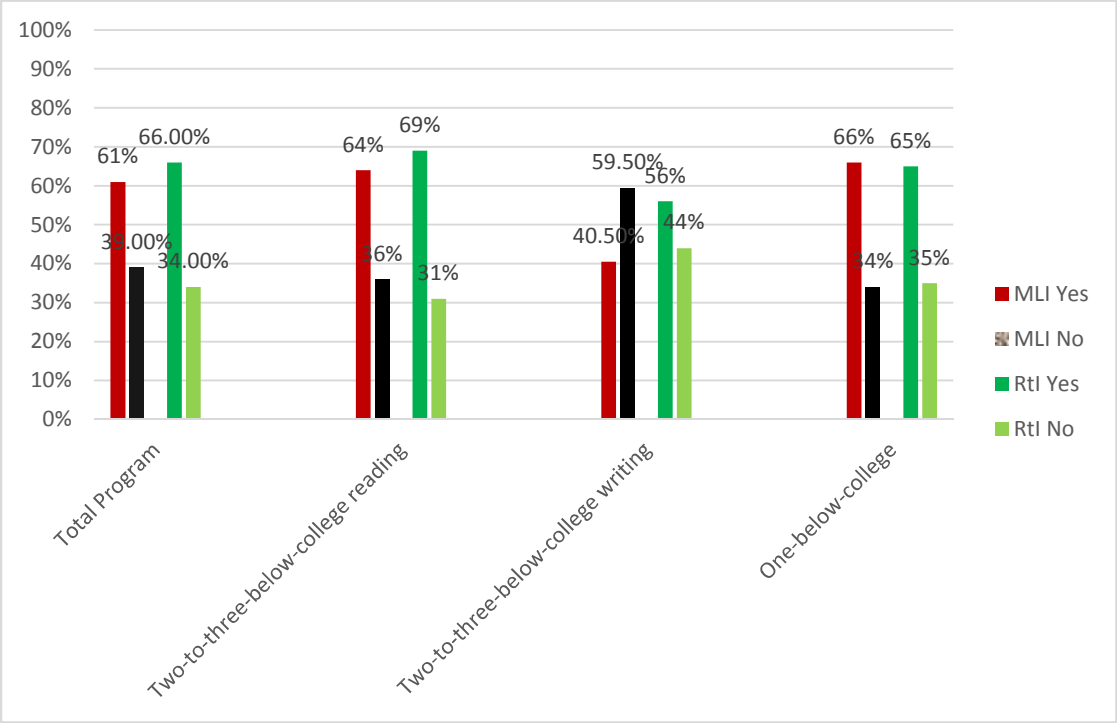

Figure 2. Persistence for instructional group and skill placement levels

Research Question 3

The chi-square analysis of records of students enrolling in the Fall semester following initial Fall enrollment, the data related to Research Question 3, what is the association between instructional group— students in the MLI program and students in the RtI program— and student retention, showed that 25% of students enrolled in the MLI program were retained as college students while 32% of students enrolled in the RtI program were retained as college students. The analysis yielded a chi-square value of 51.03 ($\chi 2 = 51.03$) with $p = 0$. The p value less than .05 was statistically significant; consequently, I rejected the null hypothesis that there was no association between instructional group and retention. Students enrolled in the RtI program showed greater

rates of retention than students enrolled in the MLI program. Table 14 shows the results of the chi-square analysis.

Table 14

Association Between Retention and Instructional Group

Program	Retained no		Retained yes	
	n	Rate	*n*	Rate
MLI program	2902	75%	980	25%
RtI program	2995	68%	1408	32%

Note. $\chi 2 = 51.03$; $p = 0$

Subquestion

The analysis of data related to what was the association by skill placement level showed that for the two-three-below-college-reading skill level placement group 25% of students enrolled in the MLI program were retained as college students while 36% of students enrolled in the RtI program were retained as college students. The chi-square value was 44.952 ($\chi 2 = 44.952$) with $p = 0$. Because the test was statistically significant, I rejected the null hypothesis that there was no association between instructional group and retention by skill placement level for the two-to-three-below-college-reading skill level placement group. Students enrolled in the RtI program showed greater rates of retention than those enrolled in the MLI program. Table 15 shows the results of the chi-square analysis.

Table 15

Retention for Two-to-three-below-college-reading Skill Level Group

Program	Retained no		Retained yes	
	n	Rate	*n*	Rate
MLI program	1427	75%	476	25%
RtI program	805	64%	455	36%

Note. $\chi 2 = 44.952$; $p = 0$

For the two-to-three-below-college-writing skill level placement group, 38% of students enrolled in the MLI program were retained as college students while 29% of students enrolled in the RtI program were retained as college students. The chi-square value of 9.788 ($\chi 2 = 9.778$) with $p = .001$ was statistically significant; therefore, I rejected the null hypothesis that there was no association between instructional group and retention by skill placement level for the two-three-below-college level writing group. Students enrolled in the MLI program showed greater rates of retention than students enrolled in the RtI program. Table 16 shows the results of the chi-square analysis.

Table 16

Retention for Two-to-three-below-college-writing Skill Level Group

Program	Retained no		Retained yes	
	n	Rate	*n*	Rate
MLI program	1167	62%	726	38%
RtI program	195	71%	78	29%

Note. $\chi 2 = 9.778$; $p = .001$

For the one-below-college skill level placement group, 22% of students enrolled in the MLI program were retained as college students while 27% of students enrolled in the RtI program were retained as college students. The chi-square value of 8.485 ($\chi 2 = 8.485$) with $p = .002$ was statistically significant, resulting in the rejection of the null hypothesis that there was no association between instructional group and retention by skill placement level for the one-below college skill level placement group. Students enrolled in the RtI program showed greater rates of retention than students enrolled in the MLI program. Table 17 shows the results of the chi-square analysis. Figure 3 summarizes the results of the findings related to the association between retention and instructional group and the association by skill placement level.

Table 17

Retention for One-below-college Group

Program	Retained no		Retained yes	
	n	Rate	*n*	Rate
MLI program	1032	78%	294	22%
RtI program	1178	73%	432	27%

Note. $\chi 2 = 8.485$; $p = .002$

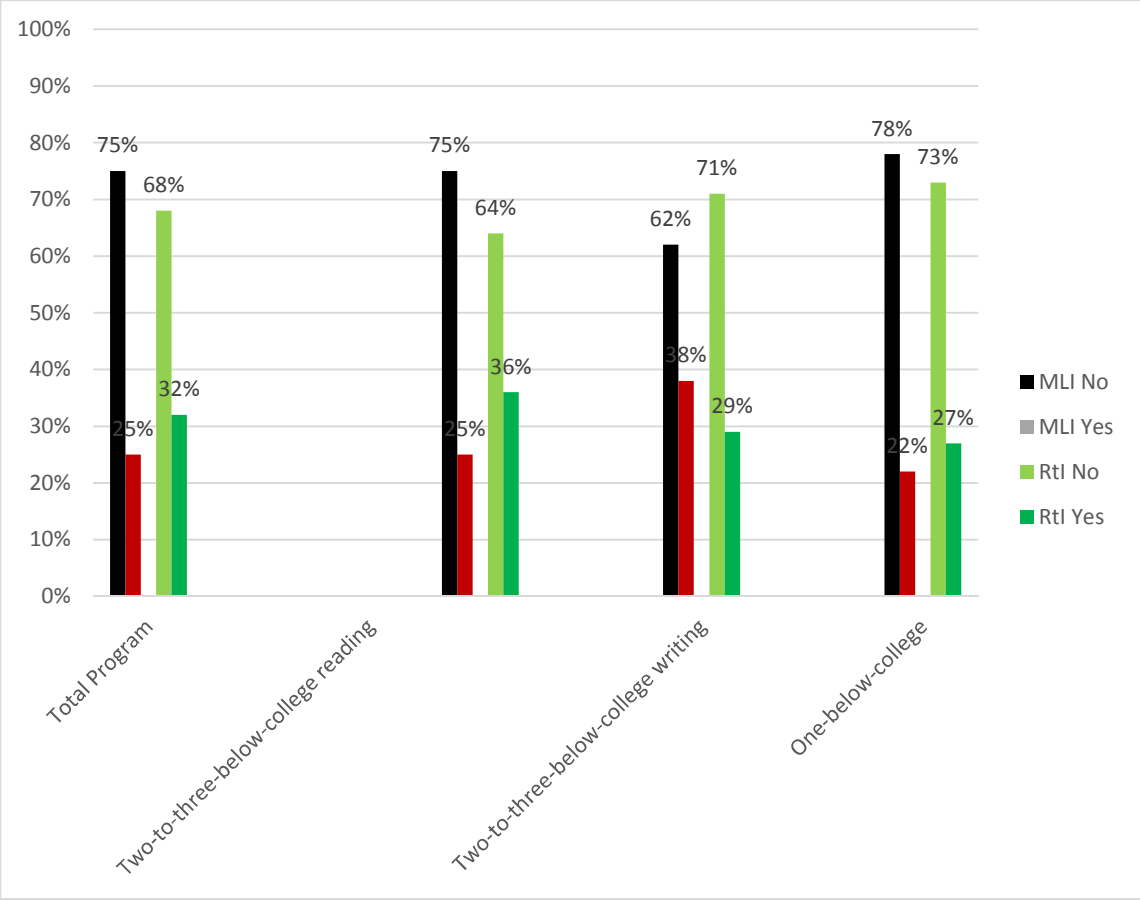

Figure 3. Retention for instructional group and skill placement levels

Research Question 4

The chi-square analysis of records of students completing credentials, the data related to Research Question 4 relating to the association between instructional group—students in the MLI program and students in the RtI program— and student credential completion, showed that 23% of students enrolled in the MLI program and 12% of students enrolled in the RtI program completed credentials. Analysis yielded a chi-square value of 153.602 ($\chi 2 = 153.602$) with $p = 0$. The test was statistically significant; thus, I rejected the null hypothesis that there was no association between instructional group and credential completion. Students enrolled in the MLI program showed greater rates of credential completion than students enrolled in the RtI program. Table 18 shows the results of the chi-square analysis.

Table 18

Association Between Instructional Group and Credential Completion

Program	Completed credential no		Completed credential yes	
	n	Rate	*n*	Rate
MLI program	2988	77%	874	23%
RtI program	3860	88%	643	12%

Note. $\chi 2 = 153.602$; $p = 0$

Subquestion

The analysis of data related to the subquestion relating to the association by skill level placement showed that for the two-to-three-below-college skill level placement group (separate reading and writing instruction) 24% of students enrolled in the MLI

reading program completed credentials while 8% of students enrolled in the RtI reading program completed credentials. The chi-square value was 131.072 ($\chi 2 = 131.072$) with $p = 0$. The test was statistically significant; therefore, I rejected the null hypothesis that there was no association between instructional group and credential completion by skill placement level. Students enrolled in the MLI program showed greater rates of credential completion than those enrolled in the RtI program. Table 19 shows the results of the chi-square analysis.

Table 19

Credential Completion for Two-to-three-below-college-reading Group

Program	Completed credential no		Completed credential yes	
	n	Rate	*n*	Rate
MLI program	1454	76%	449	24%
RtI program	1161	92%	99	8%

Note. $\chi 2 = 131.072$; $p = 0$

For the two-to-three-below-college-writing skill level placement group, 32% of students enrolled in the MLI program completed credentials while 24.5% of students enrolled in the RtI program completed credentials. The chi-square value of 5.971 ($\chi 2 = 5.971$) with $p = .008$ was statistically significant; thus, I rejected the null hypothesis that there was no association between instructional group and credential completion by skill level placement for the two-three-below-college skill level placement group of writing instruction. Students enrolled in the MLI program showed greater rates of credential

completion than students enrolled in the RtI program. Table 20 shows the results of the chi-square analysis.

Table 20

Credential Completion for Two-to-three-below-college-writing Group

Program	Completed credential no		Completed credential yes	
	n	Rate	*n*	Rate
MLI program	1280	68%	603	32%
RtI program	206	75.5%	67	24.5%

Note. $\chi 2 = 5.971$; $p = .008$

For the one-below-college skill level placement group, 27% of students enrolled in the MLI program completed credentials while 9% of students enrolled in the RtI program completed credentials. The chi-square value of 163.549 ($\chi 2 = 163.549$) with $p = 0$ was statistically significant, so I rejected the null hypothesis that there was no association between program and credential completion for the one-below-college skill level placement group. Students enrolled in the MLI program showed greater rates of credential completion than students enrolled in the RtI program. Table 21 shows the results of the chi-square analysis. Figure 4 summarizes the results of the findings related to the association between credential completion and instructional group and the association between skill placement level.

Table 21

Credential Completion for One-below-college Skill Level Group

Program	Completed credential no		Completed credential yes	
	n	Rate	*n*	Rate
MLI program	970	73%	356	27%
RtI program	1481	91%	345	9%

Note. $\chi 2 = 163.549$; $p = 0$

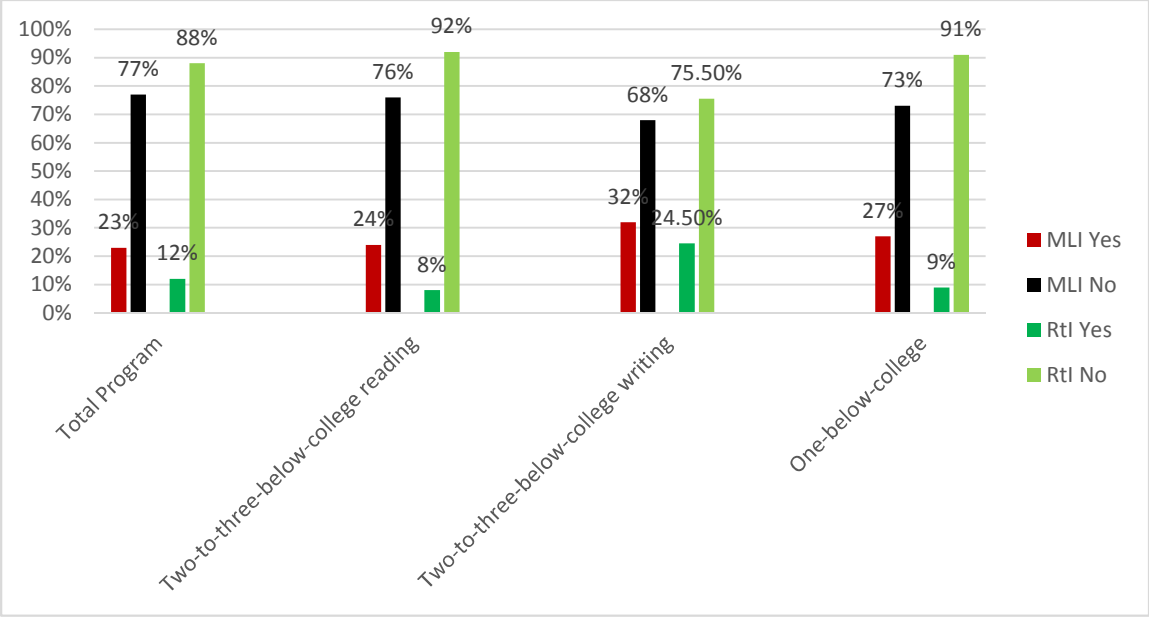

Figure 4. Credential completion for instructional group and skill levels

Discussion

Data analysis of course completion, persistence, retention, and credential completion rates consistently indicated an association between instructional group (MLI program or RtI program) and the success factors examined. For course completion, persistence, and retention, students enrolled in the RtI program showed greater success rates than students enrolled in the MLI program. For credential completion, students enrolled in the MLI program showed greater success than RtI-program students. Figure 5 depicts these results.

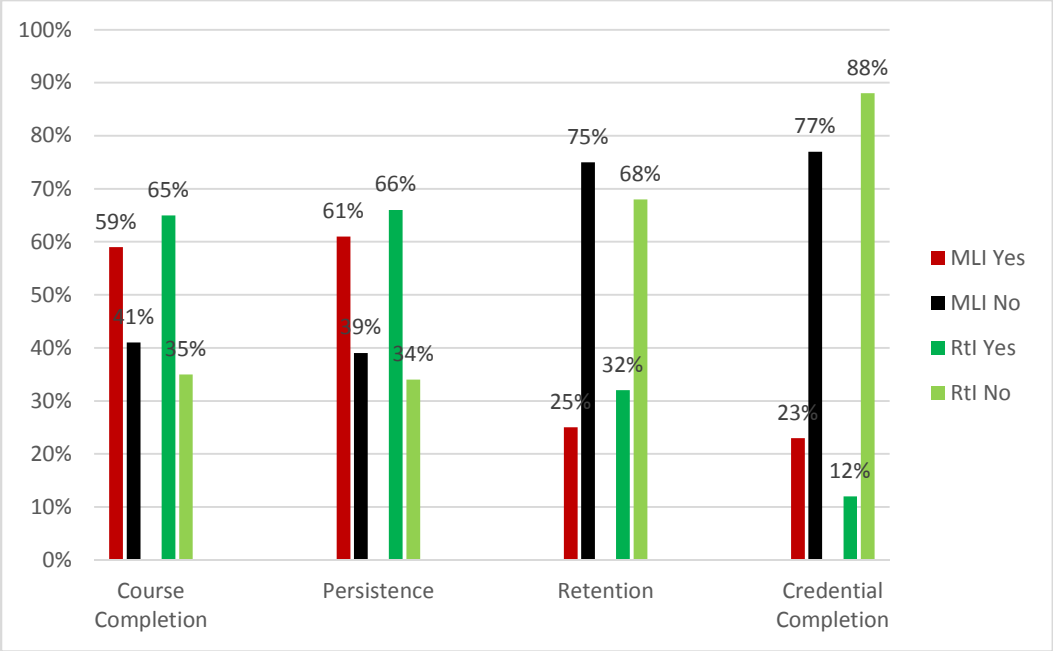

Figure 5. Dependent variables by instructional group

Credential Completion

One factor affecting the dependent variable credential completion was total enrollment time. Nonconventional students in community college programs take more time to complete programs (Bailey, Jeong, & Cho, 2010). Students enrolled in the MLI

program entered college in 2011 and 2012 while the RtI-program students first enrolled in college in 2013. Thus, MLI-program students who had completed credentials had done so over a maximum period of 13 semesters while the RtI-program credential completers had been enrolled in college a maximum of five semesters. The time factor could have affected differences in credential completion rates for the two groups, giving the MLI group the distinct advantage. Analysis of longitudinal data related to credential completion for both groups of students is necessary to determine if, over time, the RtI-program students show increased rates of credential completion.

Subquestions

For the subquestions relating to the association by skill placement level, all skill placement levels showed significant associations between the instructional group and the dependent variables except for the one-below-college reading group and persistence. For this skill placement level, the chi-square analysis showed no significant difference between instructional group. Table 22 summarizes these findings.

Table 22

Significance of Associations for Dependent Variables

Dependent variable	4-below-college	2-3-below-college reading	2-3-below-college writing	1-below-college
Course completion	Significant	Significant	Significant	Significant
Persistence	Significant	Significant	Significant	Not Significant
Retention	Significant	Significant	Significant	Significant
Credential completion	Significant	Significant	Significant	Significant

There is no clear indication as to why the one-below-college skill level placement group failed to show an association between instructional group and persistence when, for all other skill placement level groups and for all other dependent variables, an association between skill placement level and the dependent variable was identified. Moreover, for all other skill placement levels, the RtI-program students showed greater rates of both course completion and persistence than did the MLI-program students. (Tables 5, 6, 7, 11, and 12). In contrast, the one-below-college skill placement level group showed greater rates of course completion for the MLI-program students than for the RtI-program students, although the significant level was for this test. (Table 8).

A possible explanation for the difference in performance of the one-below-college RtI group in relation to course completion and persistence is that the design of the RtI program's intervention for this skill level placement group (contextualized reading

instruction linked to concurrent enrollment in a college level course) was not fully implemented until Spring 2015. Teacher resistance to change, a factor not explored in this research study, could have contributed to lower student performance in the first few semesters of implementation of the RtI-program intervention. As the intervention of contextualized reading instruction was scaled, leading to more one-below-college-level students enrolling in a college credit course, course completion rates improved as referenced in Table 9. Increased course completion has been linked to increased persistence (Coleman, 2014; Community College Research Center, 2011). Therefore, it is possible that the RtI-one-below-college students may increase their course completion and persistence rates as the contextualized-reading intervention continues to be offered at scale. Further research focused on the course completion and persistence of concurrently-enrolled developmental students may indicate whether, over time, the RtI-program students' rates of course completion and persistence exceed those of the MLI-program students at the one-below-college skill level.

An additional area for exploration is the rate of retention for the two-to-three-below-college-writing skill level placement group. For the other skill level placement groups, the RtI-program students showed greater rates of retention than did the MLI-program students. A possible explanation for the retention-rate drop for the RtI-program students at this skill level placement is that retention is measured by comparing rates of initial Fall enrollment with a return to college in the following Fall. Thus, retention is only measured for Fall to Fall enrollment (Institute of Education Sciences National Center for Education Statistics Integrated Postsecondary Data System, n.d.). The

RtI-program intervention for the two-to-three-below-college-writing group was implemented as a pilot in Fall 2013 but was not scaled across the entire group of developmental writing students until Spring 2015, the final semester of the study. Therefore, most of the RtI-program students in this skill level placement group began coursework in Spring rather than in Fall, making it impossible to measure retention. Further examination of data over time is necessary to determine if retention rates for the RtI-program students continue to fall below those of the MLI-program students or if, over time, retention rates increase for this skill level placement group of RtI-program students.

Gaps in Data

The process of data collection and analysis for this study revealed that MCC does not collect persistence, retention, or credential completion data for students enrolled in noncredit programs. Because the RtI-program intervention for the four-or-more-below-college group was based on enrollment in a noncredit reading/writing course, this gap in data prevented an accurate assessment of an association by skill level placement for the four-or-more-below-college group in relation to all success factors other than course completion. While data for students who persisted by enrolling in more advanced skill level placement groups were captured within those higher-level skill groups, it was impossible to assess whether the group overall performed at an equal, lower, or higher rate than students in the MLI instructional group. This gap in data suggests that MCC's data collection process should expand to include persistence, retention, and credential completion data for some noncredit programs so that those programs can be more accurately evaluated for their effectiveness.

Conclusion

It is important to note that, in most cases, the RtI-program students showed greater rates of success at each skill level in relation to the dependent variables course completion, persistence, and retention than did the MLI-program students. While the MLI-program students showed greater rates of credential completion within all skill level placement groups, it was noted that a confounding variable contributing to this result was the lack of time the RtI program had been in place relative to the MLI program (13 semesters and 5 semesters, respectively). Table 23 summarizes these overall findings.

Table 23

Skill Placement Levels and Dependent Variable by Instructional Group

Dependent variable	4-below college	2-3-below-college reading	2-3-below-college writing	1-below-college
Course completion	MLI 53% RtI 58%	MLI 1-level increase 56% RtI 1-level increase 74% MLI 2-level increase 5% RtI 2-level increase 60%	MLI 60% RtI 72.5%	MLI 62% RtI 58%
Persistence	—	MLI 64% RtI 69%	MLI 60% RtI 72.5%	MLI 66% RtI 65%
Retention	—	MLI 29% RtI 36%	MLI 38% RtI 29%	MLI 22% RtI 27%
Credential completion	—	MLI 24% RtI 12%	MLI 32% RtI 24.5%	MLI 27% RtI 9%

Note. Data not reported for 4-below-college persistence, retention, and credential completion.

Data analysis indicated that, overall, RtI-program students outperformed MLI-program students except for the success indicator credential completion. However, as noted, total enrollment time in college may have contributed to reduced credential completion rates for RtI-program students. It is also possible that the MLI program structure contributed to successful credential completion by providing greater focus on building literacy skills, increasing college success over time. While this explanation may indicate value in the MLI structure, the changes in total lifetime financial aid availability (U.S. Department of Education, 2012) have forced faculty and administrators working with underprepared students to revamp program structures so that students may complete their developmental coursework in a shorter time, leaving sufficient Pell Grant dollars available to allow completion of a degree.

Moreover, the ratio of credential completion rate over time for lower-placing students has increased for students enrolled in the RtI program. For two-to-three-below-college-reading students, 24% of MLI-program students completed a credential in a maximum of 13 semesters, for a ratio of .018. In contrast, 12% of RtI-program students completed a credential in a maximum of five semesters, for a ratio of .024. Two-to-three-below-college-writing students showed a similar increase in the ratio of credential completion over time. For this skill placement level, 32% of MLI-program students completed a credential in a maximum of 13 semesters, for a ratio of .025. Conversely, 24.5% of RtI-program students completed a credential in a maximum of five semesters, for a ratio of .49. While the ratio of credential completion over time has remained static at .018 for both MLI and RtI program students, the increases in rate over time for lower-

placing students suggest that, for this group the RtI program has contributed to overall increases in credential completion.

The data analysis related to this study established whether associations existed between the MLI and RtI instructional groups by total group and by skill placement level and college success factors used for state and federal reporting. Because increased success of developmental students has formed a major national focus over the past several years (Bailey, Jeong, & Cho, 2012; Coleman, 2014), it is important to establish which programs contribute to increased success for this student group. MCC administrators and Board of Trustees routinely seek information related to the success of developmental students as referenced by Board agenda items from 2011 through 2015 (MCC, 2015). Therefore, a project that could develop from this study would be a detailed white paper exploring factors related to the associations between the MLI and RtI program structures and potential effects on overall college success for developmental students. These research results, when combined with an appropriate project, could be used to inform stakeholders to improve program effectiveness, as well as to support continued funding of programs for developmental students, funding that could be substantiated for allocation proportionately based on the empirically demonstrated effectiveness of those programs.

Section 3: The Project

Introduction

After considering the available options for a project (program evaluation, professional development, curriculum development, or policy recommendation) that could evolve from the results of the data analysis, I decided that a detailed policy recommendation in the form of a position paper best aligned with the purpose of the study. The genre of policy recommendation allowed me to present an analysis of the outcomes of the RtI-based reorganization of the MCC DRW program and to place the findings from this research study into the context of the national focus on developmental education reform (Achieving the Dream, 2012; Bailey, Jeong, & Cho, 2010; Complete College America, 2011). This project allowed me to explore possible explanations for findings and to discuss the role that the RtI-based program could play in increasing success rates for DRW students, a goal identified by MCC's chief academic officer (MCC Board of Trustee minutes, May, 2015) as a critical point in increasing overall institutional success. The project also allowed me to inform stakeholders not only of the results obtained from data analysis, but of the theoretical background and evidence from research that supported the RtI-based program design and to recommend that the program be incorporated into the student degree pathways that MCC is currently creating (MCC Board of Trustee minutes, May, 2016).

This project holds relevance for the MCC community because, like most U.S. community colleges (Multin, 2012), MCC has identified itself as an open-door institution (MCC Board of Trustee minutes, October, 2016). The open-door policy places no

restrictions on admission other than the current requirement that students must hold a high school diploma or GED to access federal financial aid (U.S. Department of Education, 2012). Because of the open-door policy and the fact that most of the high school graduates from schools surrounding MCC failed to place at proficient levels on federally-mandated tests (National Assessment of Educational Progress, 2014), approximately one-third of newly admitted MCC students presented placement scores that fell below the level of college readiness in reading and/or writing at the time the developmental education faculty began designing the RtI-based program (MCC institutional data base report, 2012). Moreover, federal oversight of financial aid recipients requires that these students maintain satisfactory academic standing (U.S. Department of Education, 2012), which at MCC equates to maintaining a cumulative grade point average of 2.0 and a course completion ratio of 70% The course completion ratio is calculated by dividing the number of courses in which students earned a minimum grade of 60% in a given semester by the total number of courses in which the student has enrolled over the student's entire college career (U.S. Department of Education, 2012). Rates of course completion for students enrolled in the MLI instructional group, as shown in the data analysis, consistently fell below 70% for all instructional skill levels, a fact that could have contributed to their failure to achieve satisfactory academic progress, in turn jeopardizing their ability to continue to access financial aid to support their enrollment in college. Establishing college policies that support increased success can play an essential role in helping these students maintain progress toward graduation.

An additional factor affecting all community colleges is that default rates on student loans are monitored by the federal government; colleges with default rates that exceed the federally-determined threshold may face limitations on their ability to disburse financial aid (U.S. Department of Education, 2012), limiting a college's ability to serve all students. Because developmental students who fail to complete degrees or certificates have the highest default rate across the nation (Bailey, 2008), community colleges have begun to take ownership of the progress of developmental education students, realizing that to fail to address the needs of these students to complete programs may not only impact the students, but the colleges overall (Bailey, Jeong, & Cho, 2010). While these factors have created the need to revise developmental education programs to increase not only acquisition of literacy skills by underprepared students, but to significantly increase completion rates for underprepared students, many colleges have addressed developmental education reform at the departmental and curricular level, not at the level of institutional policy (Bailey, Smith Jaggars, & Jenkins, 2015). Presenting a position paper recommending the continuation of the RtI-based program, a structured process that demonstrated an increase in overall college success for DRW students, aligns with recommendations from research (Bailey, Smith Jaggars, & Jenkins, 2015; Boylan, 2009; Jenkins, 2011) on educational policy change. This section provides an overview of the policy recommendation project including project goals and timelines for implementation.

Description and Goals

The policy recommendation project allowed in-depth exploration of issues related to developmental education program redesign, both at MCC and at community colleges nationwide (Bailey, 2008; Bailey, Jeong, & Cho, 2010; Boylan, 2009; Boylan & Bonham, 2011; Edgecombe, 2011; Goudas & Boylan, 2012). Over the past three years at MCC, institutional focus on the DRW program has shifted from an area that received departmental oversight with supervision from a divisional dean and occasional consultation with executive level administrators. This was the system that was in place in 2012 and 2013 when faculty began designing the RtI program (MCC dean, personal communication, 2012). However, since June, 2013 the topic of developmental education programs has begun to receive collegewide attention (MCC Board of Trustee minutes, May 2015; June 2015), and MCC's provost frequently has addressed the topic in collegewide meetings (August, 2013; May, 2014; August, 2014; May, 2015; December, 2015). Thus, MCC's interested stakeholders including the MCC Board of Trustees, Academic Senate, and executive level administration will benefit from reviewing the structure of the RtI-based program and significant findings of this study through the policy recommendation project (Appendix A). This section includes a discussion of how the program redesign has addressed issues of increased persistence and retention while placing the RtI-based program within the institutional context of degree pathways and within the context of the national move to reform developmental education. These descriptions can help stakeholders understand the complexities involved in providing intervention-based supports for underprepared college students (Boylan, 2009). But more

importantly, collegewide recognition of the increased success rates shown by students enrolled in this promising RtI-based program, evidenced by the findings from this study, can support ongoing funding for developmental education students.

Rationale

I used the findings from this study combined with literature defining an RtI-based approach and the application of that approach to underprepared college students to develop a position paper justifying the policy recommendation that MCC continue to develop the RtI-based program as a collegewide strategy to reform its developmental education program. I used a causal-comparative approach to investigate whether associations existed between instructional groups for the entire group of DRW students and for each skill placement level within each group. The data analysis identified associations between enrollment in the RtI instructional group and increased rates of course completion, persistence, retention, and credential completion compared with the success rates of students enrolled in the MLI program. The causal-comparative research study was not a program evaluation (Lodico, Spaulding, & Voegtle, 2010), eliminating an evaluation report as a possible choice of project genre. The genres of curriculum development and professional development could have contributed to further development of the RtI-based program because creating lesson plans and materials would expand instructional options for faculty, and training sessions would build faculty capacity to effectively work with DRW students. However, for either of these project genres to effectively influence development of the RtI-based program, MCC must first make an institutional commitment to continue to serve DRW students through a program

of structured interventions. The genre of a position paper supporting a policy recommendation required that the theoretical framework underlying the program as well as the outcomes of the program be presented to stakeholders (Mattern, 2013). Thus, the genre of policy recommendation in the form of a detailed position paper allowed me to present these findings to stakeholders with the goal of building support for continuation of the RtI-based program. This goal best aligned with the purpose of the study.

Review of the Literature

This review of literature begins with literature related to the project genre of a position paper supporting a policy recommendation. Following this is a review of research related to recent policy recommendations designed to increase postsecondary education's effectiveness, including performance-based funding, data-driven decision making, and implementing a guided pathways approach to students' programs of study, an approach that MCC is in the process of implementing (MCC Board of Trustee minutes, May, 2015). These policies have been implemented at the national level (Welsch, 2013) and have resulted in institutional policy changes, which often have not involved stakeholder input (Florida Senate Bill 1720, 2013; Mattson & Klafehn, 2016). The genre of policy recommendation in the form of a position paper deliberately includes stakeholders in discussions of local policy, creating buy-in which can support the policy change (Community Sustainability Evaluation Toolbox, n.d.). Therefore, research related to the policies that are driving higher education reform is relevant to a discussion of the genre of policy recommendation. In addition, the review includes research specifically related to policy recommendations for reform of programs serving underprepared

students because the success of these students has been linked to the larger issue of overall institutional effectiveness (Bailey, 2008). Research on strategies to increase success for underprepared students (Achieving the Dream, 2010) has emphasized the importance of creating stakeholder buy-in, supporting the choice of a position paper as the project genre associated with this research study. This literature review was conducted through an online search of educational databases (EBSCO Host Academic Search Complete, ProQuest Central, Sage Premier, ERIC, and Taylor and Francis Social and Humanities Library) accessed through the Walden University library website and through Google Scholar. Search terms included *policy recommendation*, *white paper*, *evaluation*, *assessment*, *data-driven decision making*, *guided pathways*, *performance based funding*, and *educational policy reform*.

Since 1996, the Columbia University Teachers' College Center for Community College Research (CCRC) has focused on educational policy specifically related to community colleges (CCRC, 2016). CCRC working papers and policy briefs have provided the foundation for many of the policy changes that have been implemented across the country over the past twenty years. While CCRC researchers publish articles summarizing their research to peer-reviewed journals, the primary sources for their research are the CCRC publications. CCRC reports (working papers, policy briefs, research briefs, books) exemplify the public policy impact that can result from position papers placing evidence from research within the context of a local or national problem. Consequently, this review of literature demonstrates saturation through a review of

articles from peer-reviewed journals combined with a review of CCRC documents related to the issue of educational policy for community colleges.

Policy Recommendation and Position Papers

The purpose of a position paper is to influence opinion by presenting arguments supporting a position or proposed solution (Sakamuro, Stolley, & Hyde, 2015). Sakamuro's, Stolley's, and Hyde's (2015) description of the purpose of a position paper supported the choice of this project genre because the findings from data analysis demonstrated that students enrolled in the RtI-based DRW program had shown increases in course completion, persistence, and retention, metrics by which current federal policy evaluates postsecondary institutions are judged (Welsch, 2013). These outcomes can inform local stakeholders, leading to support for the policy recommendation of continuation of the RtI-based program. Sakamuro et al. also stated that position papers should focus on the needs of the audience, clearly demonstrating how the proposed solution could meet the audience's needs. Because the position paper associated with this project study includes a detailed explanation of the problem and how the problem affects stakeholders as well as students, evidence from data analysis supporting the proposed solution, and a discussion of how the solution could benefit students and stakeholders, the paper's structure aligns with Sakamuro's et al.'s requirement that audience needs should direct the focus of the paper.

Graham (2015) stated that required elements for position papers included audience analysis, definition of the purpose of the position paper, a "call to action" (p. 1), identification of the problem, a presentation of the limitations of other solutions to the

problem, and details of how acceptance of the policy recommendation would result in the most effective solution to the problem. Graham's list of required elements matched recommendations from Tucker, Derelian, and Rouner (1997). Tucker et al. also emphasized the importance of evaluating the feasibility of program implementation as well as considering the political and/or social climate surrounding the issue discussed. Stelzner (2010) stressed the importance of focusing on the needs of the audience during the preparation of a position paper and recommended providing both a historical overview of the problem and details of alternative solutions while demonstrating how alternative solutions fell short of resolving the problem. Graham's, Stelzner's, and Tucker's et al.'s recommendations support the inclusion of information on the theoretical framework on which the RtI-based program was structured in this project's position paper. The authors' (Graham, 2015; Tucker et al., 1997; Stelzner, 2010) statements also support including a discussion of limitations to other DRW models that have been proposed at MCC in a position paper recommending continuation of the RtI-based program.

Curriculum Evaluation in Policy Recommendation

Højlund (2014) stated that the ultimate purpose of all evaluation, including analysis of assessment data, is to improve policy. Højlund recommended viewing evaluation within the context of the organizational structure in which the evaluation was conducted, stressing the need to inform stakeholders of the data analysis related to the evaluation and to connect that data analysis to policy recommendation. Dowell and Bickmore (2012) explored the role of data analysis in curriculum evaluation and resulting

policy recommendations, finding that the 1998 definition of data analysis as the "process of systematically searching and arranging accumulated data to increase personal understanding to present what you discover to others" (p. 10) best described the use of data analysis in policy recommendation. Similarly, Mandinach (2012) stressed the need to use data-driven decision making to inform policy and practice. Højlund's and Dowell's and Bickmore's descriptions of the relationship between curriculum evaluations and policy decisions along with Mandinach's emphasis on the need to include data analysis in policy recommendation link curriculum evaluation, including data analysis, to policy decisions. This research (Højlund, 2014; Dowell & Bickmore, 2012; Mandinach, 2012) also supports including information related to the theoretical framework underlying the RtI-based program for DRW and information from the data analysis of this study in the position paper recommending continuation of the RtI-based program at MCC.

In 2014 the United Nations Educational, Scientific, and Cultural Organization International Bureau of Education (IBE) stated that the conceptual framework underlying curriculum evaluation can provide a "basis for curriculum policy decisions" (p. 1). According to the IBE, a major concern related to curriculum evaluation includes "translating education policy into educational practice" (p. 2). Stressing that student achievement must form a major focus of policy recommendation, the IBE further stated that assessment of student learning can indicate strengths and weaknesses of any curriculum design. The IBE recommendations also stressed the importance of providing details of outcomes evaluations to stakeholders to involve the group in policy decisions. The IBE focus on data analysis as a tool to establish "critical information for strategic

changes and policy decision" (p. 2) supports the presentation of findings related to analysis of the RtI program with the goal of providing stakeholders information on which to base policy decisions.

Mertens and Wilson (2012) identified context as a critical point to include in the development of a presentation for stakeholders. The authors stated that factors relating to the local setting, the range of background knowledge and cultural values of stakeholders, and "the history of the problem and its proposed solutions, as well as politics and legislation" (p. 233) all hold relevance for stakeholders and must be accounted for in a recommendation related to institutional policy (Mertens & Wilson, 2012). Mertens' and Wilson's inclusion of the historical context related to the implementation and design of interventions in policy recommendations supports incorporating background related to the RtI model in the report to stakeholders.

Hendrickson (2012) reviewed the use of data-driven decision making in Finland, finding that the focus on assessment and evaluation had functioned as a driver of educational policy designed to increase student achievement. Noting that the Finnish educational policy model examined student achievement, learning, and behavior, Hendrickson stated that focusing educational policy within a positive context could shift the national discussion of educational practice toward a shared goal of increased student achievement. McNeil (2011) stated that policy development should proceed from assessment of program results. McNeil recommended incorporating the use of Bloom's Taxonomy into the development of questions used in outcomes based evaluations to provide stakeholders (students, funding agencies, and the community) with information

to guide policy development. Doabler et al. (2015) recommended taking a "scientific approach" (p, 97) to curriculum evaluation and resulting policy decisions. Stating that researchers must compile evidence related to a curriculum's "promise to improve student…achievement" (p. 98), Doabler et al. argued that a strong theoretical base is essential to the development of an effective curriculum. Hendrickson's, McNeil's, and Doabler's et al.'s focus on the need for practitioners and stakeholders to share involvement in policy decisions and to review data from curriculum evaluations as part of the policy making process supports the inclusion of details of the theoretical base and the findings from data analysis for the RtI-based DRW program in the position paper recommending the continuation of the program as institutional policy.

Higher Education Policy—Performance-Based Funding

The Community College Research Center's 2014 Policy Brief on performance funding found that while performance funding has impacted funding distributions, this funding model has not proven to have positively impacted community college performance. Although institutions appear to have responded to performance funding through implementing changes in practice related to student services policies, the overall effects of these policy changes have not significantly increased college performance rates (CCRC, 2014). The CCRC's analysis found that

> use of inappropriate performance measures; lack of sufficient state funding for new institutional efforts to improve student outcomes; the brief duration of many performance funding programs; uneven knowledge about performance funding within institutions; inadequate institutional capacity for organizational learning

> and change; and institutional resistance to and gaming of the performance funding system (pp. 1-2)

had contributed to lack of systemic change. Conversely, the CCRC researchers found that performance funding had, in many cases, contributed to "grade inflation and a lowering of academic standards; restrictions on admission of less prepared and less advantaged students; unexpected costs of compliance; a narrowing of institutional missions; and a diminished faculty voice in academic governance," (p. 2). All of the situations cited have demonstrated the potentially negative, unintended consequences of a public policy aimed at increasing college performance. The CCRC's recommendations for an improved performance funding policy included the following strategies:

- removing or modifying metrics that disadvantaged community colleges by focusing on completion of a Bachelor's degree (an award few community colleges offer) and failing to consider transfer to a four-year institution as a separate metric indicating progress toward a Bachelor's degree;
- embedding performance funding into the overall state funding systems rather than linking all postsecondary funding to institutional performance;
- providing funding to expand organizational capacity for learning and change;
- including colleges and community colleges in performance funding program designs;
- allowing colleges to compete against themselves through comparison of past and current performance;

- protecting disadvantaged students by designing metrics that examine performance based on student characteristics rather than by overall institutional performance; and
- protecting the rigor of academic standards by conducting student learning assessments.

The findings reported in the CCRC 2014 Policy Brief have been supported by research documenting similar impacts and similar unintended negative consequences of performance funding. Although Dougherty and Reddy (2011) noted that one positive outcome of performance-based funding had been increased reliance on data-driven decision making at the institutional level, they warned that disparities in institutional capacity combined with differences in institutional structures could limit the institution's ability to implement policy change. Kurlaender, Carroll, and Jackson (2016) indicated that variations in student body makeup could affect the quality and consistency of performance rankings and suggested that metrics be adjusted to compare similar institutions. Dougherty et al. (2016) found that systemic change related to involving faculty in student advising, requiring advising prior to selection of a major and prior to registration, aligning degree pathways, and increasing articulation appeared to have positive correlations with increased graduation rates although the authors stated that connections between these systemic changes and institutional responses to performance funding were unclear. The CCRC 2014 Policy Brief along with Dougherty's and Reddy's, Dougherty et al.'s, and Kurlaender's et al.'s research supports the policy recommendation that MCC continue the RtI program because the increase in

performance of underprepared students, documented by the results from the data analysis, could contribute to improved institutional performance, improvement that is mandated by current federal policy (Welsch, 2013).

Higher Education Policy—Data-Driven Decision Making

In a review of the use of data-driven decision making in six colleges belonging to the Achieving the Dream network, Kerrigan and Jenkins (2013) found that colleges that had implemented an institutional focus on the use of data in decision making, both at the institutional policy level and at the curriculum development and student services level, had shown increased rates of overall college success, including increased persistence and retention. The authors noted that difficulties in collecting data and disseminating information related to the results of data analysis had limited the impact of data-driven decision making (Kerrigan & Jenkins, 2013). One example of the limited impact of data analysis on institutional decisions related to academic policies was the fact that colleges have frequently failed to provide institutional funding to support moving from a small, pilot project to full-scale implementation of practices that data analysis had documented to have positively affected student success (Kerrigan & Jenkins, 2013). Kerrigan and Jenkins recommended that colleges increase their data collection capacities and actively work to involve all faculty and staff in the use of data. The policy recommendation project associated with this research study aligns with Kerrigan's and Jenkins' findings because data related to the RtI-based program, a curricular reform designed to increase developmental education students' overall rates of college success, would be provided to

stakeholders collegewide, thus involving the larger group in a discussion of institutional policy direction and implementation.

Labor Market Analysis in Data-Driven Decision Making

Liu, Belfield, and Trimble (2014) explored labor market data in relation to educational policy aimed at increasing college completion, finding that even the accumulation of college credits absent a certificate or degree added labor market value for students. Additionally, Liu et al. stated that certificates appeared to hold limited labor market value, but that associate's and bachelor's degrees added significantly to the student's value in the labor market. Hillman, Tandenberg, and Fryar (2015) confirmed Liu et al.'s findings that certificates added less labor market value in terms of credentials than did a two-year degree. Hillman et al. noted that one effect of performance funding has been an increase in certificate awards in community colleges. Similarly, Zeidenberg, Scott, and Belfield (2015) found that failure to complete a credential carried some degree of negative penalty for a student, but that credential completion contributed to students' value in the labor market. Zeidenberg et al. identified students' lack of clarity related to their choice of a program of study as a major deterrent to credential completion and recommended that colleges adopt policies and practices to help students identify a program of study. Whissemore (2013) reviewed labor market analysis that indicated a postsecondary credential carried increased employability as compared to a high school diploma or GED. Whissemore noted that an associate's degree could lead to earnings comparable to those for a bachelor's degree in STEM fields. Because the RtI-based program included a focus on helping students identify a program of study, contributing to

progress toward a credential, and because the findings from data analysis showed increased rates of underprepared student success, metrics that contribute to overall institutional effectiveness, these authors' (Hillman et al., 2015; Liu et al., 2014; Whissemore, 2013; Zeidenberg et al., 2015) findings support the policy recommendation that MCC continue the RtI program as its model for developmental education.

Higher Education Policy—Guided Pathways

McClenney and Dare (2013) summarized the American Association of Community Colleges' 21st-Century Commission on the Future of Community Colleges report which indicated that the development of clear academic pathways could lead to increased credential completion rates, making this an effective policy direction for community colleges. The CCRC's Research Overview from March, 2016 indicated that institutions that have implemented educational policies that include providing students clear, structured pathways to credentials have significantly increased institutional performance. In April, 2016 the CCRC reported that 22 states have begun implementing policy changes aimed at developing structured, guided pathways approaches to student progress. Responding to research on educational policy related to a guided pathways approach, MCC began to move toward the design of structured academic pathways in 2015. The recommendation to continue the RtI-based program as an institutional policy aligns with the current MCC move toward developing clear academic pathways because data analysis has indicated that the program supports DRW students' progress toward an academic goal.

Bailey, Smith Jaggars, and Jenkins (2016) identified critical steps in the guided pathways implementation process, stating that moving such a policy to scale required an overall institutional commitment with buy-in from all departments and staff. Bailey et al. stressed the fact that all stakeholders must understand the benefits to students and to the institution of shifting policy toward a more structured student experience. Bailey et al. also emphasized the point that developmental education programs should be used as springboards to a degree pathway, not a separate educational track. The RtI program was designed as a series of structured interventions to move DRW students into a program of study while providing wrap-around supports to increase their success. Therefore, the policy recommendation of continuation of the RtI program aligns with Bailey's et al.'s recommendations on implementation of guided pathways programs.

Page and Scott-Clayton (2014) concluded that educational policy changes must include examination of all the systems related to a student's college experience combined with targeted interventions to support student success. Similarly, Edgecombe, Cormier, Bickerstaff, and Barrigan (2013) concluded that educational policy change solely focused on reforms of programs for underprepared students have tended to fall short of the goal of increasing overall college performance. Edgecombe, et al. noted that pedagogical reform may increase course success but has not led to significantly increased graduation rates, concluding that systemic changes that include structured, targeted interventions are needed to achieve large-scale effects. Bailey, Smith Jaggars, and Jenkins (2015) recommended an overhaul of community college structures that included incorporating guided pathways along with other systemic changes in intake, advising, and registration.

Karp (2013) concluded that program pathways should balance structure with exploration. Karp specifically noted that "Career counseling should drive an integrated approach to advising. Colleges should provide services to students based on their level of need. Colleges should strategically deploy resources to allow for developmental advising," (p. i). The RtI-based program incorporates targeted, structured interventions, systematic advising, and movement toward students' programs of study. Therefore, Page's and Scott Clayton's, Edgecombe's et al.'s, Bailey et al.'s, and Karp's research supports the policy recommendation that MCC continue the RtI-based program as its institutional model for underprepared students.

Belfield, Crosta, and Jenkins (2013) found that degree pathways showed great variation in cost efficiency with liberal arts, business, and allied health pathways, demonstrating greater cost efficiency than technical fields such as mechanics/repair. Belfield et al. also noted that cost efficiency decreased with levels of underpreparedness and recommended implementing supports at each stage of a student's enrollment in a degree path. Chaplot, Rassen, Jenkins, and Johnstone (2013) recommended "fundamental change in…classrooms, programs of study, departments, divisions and institutions" (p. 5). Chaplot et al. stressed the need to rethink academic advising, introduction of underprepared students into degree pathways, and progression along degree pathways to create systemic policy change. Rassen, Chaplot, Jenkins, and Johnstone (2013) also examined institutional policy in light of student goals and student characteristics, noting that often "nuances" (p. 1) differentiating student characteristics and goals have been missed in the traditional reporting systems for community colleges. Rassen et al.

recommended examining student goals and characteristics in the context of the local community (K-12 systems, transfer institutions, local employers) to better align community college programs with student goals and local community goals. Rassen et al. noted that such alignment could assist community colleges in demonstrating increased effectiveness. This research (Belfield et al., 2013; Chaplot et al., 2013; Rassen et al., 2013) supports the policy recommendation that MCC continue the RtI-based program because the program aligns with a guided pathways approach to community college education, a direction that holds promise for overall increased student performance.

Van Noy, Trimble, Jenkins, Barnett, and Wachen (2016) investigated implementation of guided pathways in career and technical and business programs, finding that the more structured career and technical pathways showed higher rates of student completion than the business, accounting, and marketing programs where less structured pathways formed the base of the programs. However, Van Noy et al. noted that, in addition to a less structured pathway format, the business, accounting, and marketing programs reviewed did not incorporate structured interventions such as early alerts or case management, which were in place in the career and technical programs. Van Noy et al. stated that while the business, accounting, and marketing programs less prescriptive structure aligned with transfer requirements and industry standards, the lack of access to active academic advising and intense academic support could have affected program outcomes. Van Noy et al. recommended that as institutions implement guided pathways, administrators and program faculty should align programs with transfer and industry requirements and incorporate structures to support student success.

Underprepared Students and Higher Education Policy

Kalamkarian, Raufman, and Edgecombe (2015) explored implementation of statewide policies related to programs for underprepared students in North Carolina and Virginia. Kalamkarian et al. noted that implementation at scale had been a key component of both states' reforms and that the reform efforts had involved curricula structure and assessment practices. Perin, Raufman, and Kalamkarian (2015) recommended involving practitioners in the assessment of underprepared students, noting that the interaction between students and faculty could lead to more accurate assessment of college readiness. Barnett and Cormier (2014) recommended aligning college curricula for underprepared students to the Common Core State Standards, stating that such alignment could bridge gaps between secondary education and college. The RtI-based program included elements of successful reform policies noted by Kalamkarian, et al., Perin, et al., and Barnett and Cormier, supporting a policy recommendation that MCC continue the RtI-based program.

Smith Jaggars, Hodara, and Stacey (2013) noted that institutions must evolve strategies and practices that recognize that philosophical tensions exist between access, the traditional view that community colleges serve all students through the open-door policy, and success, the performance measures that are currently driving state and national funding. Open dialogue involving all stakeholders was recommended as a strategy to resolve these tensions (Smith Jaggars, et al., 2013). In a case study of implementation of a revised intake process aimed at increasing success for underprepared students at Miami Dade College, researchers (CCRC, 2015) summarized the five-year

process, focusing on the collegewide dialogue that resulted in support for strategies such as eliminating late registration for full semester classes, limiting access to classes beginning after the initial semester start date, creating structured advising sessions for late-enrolling students, and mandating summer boot camps for underprepared students. The CCRC researchers (2015) emphasized the point that the collegewide dialogue had intentionally involved all stakeholders, including faculty and advisors. Presenting the policy recommendation of continuation of the RtI-based program through a position paper addresses Smith Jaggars' et al.'s and the CCRC researchers' emphasis on the need for open dialogue involving stakeholders.

Project Description

The position paper supporting the policy recommendation to continue support for the RtI-based DRW program will include three phases. First, I will distribute the position paper, including an executive summary, to stakeholder groups. Second, I will meet with stakeholder groups to discuss details from the position paper, tying each presentation to the interest and focus of the group members. For example, the presentation to the MCC Board of Trustees will focus on the role the RtI-based program can play in increasing overall institutional success while the presentation for the MCC Academic Senate and Curriculum Committee will focus on the structure of interventions and the need for collegewide faculty support for the program. Third, I will present details of the RtI-based programs to small groups of faculty in workshops designed to strengthen the existing partnerships between the MCC DRW department and areas offering degree and certificate programs. Finally, in this section I will discuss potential resources, potential

barriers, a timeline for implementation, and my role as project developer along with the roles of others involved in the project implementation plan. Including the significant results of this study that support the retention and strengthening of the RtI will provide a common point of interest and rationale for all stakeholders.

Potential Resources and Existing Supports

Potential resources that support the development and presentation of this position paper include support from my decisional Dean and developmental education department faculty, all of whom have expressed support for the RtI-based program. Several members of MCC's Board of Trustees have also expressed interest in the progress of developmental students and a desire to better understand their needs (MCC Board of Trustee minutes, April, 2016). In addition, MCC's Academic Senate has recently begun a collegewide discussion of developmental education models with the goal of involving the college as a whole in understanding the needs of underprepared students (MCC Academic Senate minutes, February, 2016). The fact that the reform of developmental education has risen to the level of a collegewide concern supports a presentation of the RtI program design and outcomes to MCC's Board of Trustees, executive level administration, and Academic Senate with the policy recommendation that MCC adopt the program as its institutional approach to services for DRW students.

Potential Barriers

The major barrier that I will face in presenting this position paper to stakeholders is the fact that MCC's current Chief Academic Officer appears committed to an approach to developmental education reform focused on acceleration with minimal supports

provided (MCC Chief Academic Officer, personal communication, May, 2016). However, MCC's Board of Trustees is committed to continuing developmental education services (MCC Board of Trustees policy, March, 2016) and has requested ongoing support for developmental education students (MCC Board of Trustees meeting minutes, April, 2016). I plan to seek support from my divisional Dean to request an opportunity to communicate with Board members. My Dean has indicated willingness to support communication with Board members since current Board policy (MCC Board policy, March, 2016) has established an employee's right to communicate directly with the Board. In addition to this right to communicate, I am also a representative to MCC's Academic Senate along with a member of the developmental education faculty who holds the office of Academic Senate Secretary. The fact that the department supervisor and a department faculty member hold positions as Academic Senators provides access to a forum in which the policy recommendation that the RtI program continue may be reviewed by collegewide faculty. Spillane (2012) has indicated that working through established organizational routines such as the MCC Academic Senate process, which allows Academic Senators to request agenda items for presentation to the Senate, can bring data analysis and policy recommendations forward within institutions. Because over the past academic year the Academic Senate was engaged in several discussions of policy for developmental education although no recommendations of specific policy adoptions were made, I believe that the Academic Senate will be open to a discussion of the RtI program. I believe that a presentation of program data combined with an analysis of why the RtI program provides a more effective structure to support academic success

for DRW students than other possible approaches (Graham, 2015) can lead to greater understanding collegewide of the importance of providing ongoing, structured interventions for DRW students.

Proposal for Implementation and Timetable

I will present the position paper to stakeholders during the Spring 2017 semester. I will email the report to my divisional Dean, executive level administrators, MCC Board of Trustees, officers of the MCC Academic Senate, MCC Curriculum Committee, and a consultant working with MCC on overall collegewide program redesign. In addition, I will provide printed copies of the position paper to the same stakeholder groups along with a request to present findings in a meeting of MCC's Academic Senate and to make a formal presentation to MCC's Board of Trustees. I will summarize information from the position paper in a Power Point presentation. The position paper and Power Point slides are included in Appendix A of this project study.

During the Spring 2017 semester, I will also work with department faculty and the MCC Assessment Director to incorporate information from the position paper into MCC's program review of DRW, scheduled for March, 2017, and in documents supporting the MCC DRW department's application for recertification by the National Association of Developmental Education (NADE), due in April, 2017. I have been scheduled to present the findings from this research study at the NADE conference in March, 2017 and will submit a proposal to present findings at the state developmental education conference in April, 2017. I also plan to submit an article for publication in a

peer-reviewed journal such as the *Journal of Developmental Education* or the *Community College Journal of Research and Practice*.

Roles and Responsibilities of Student and Others

I must present the findings from data analysis in a policy recommendation to stakeholders, identifying both the outcomes and the limitations of the study. I must contact stakeholders to inform them of the position paper associated with the study and to request inclusion in the agendas of stakeholder meetings so I can present the policy recommendation. Stakeholders must read the position paper, ask for additional information related to areas of the study as they have questions, and review the data presented and the discussion of the findings without bias.

Project Evaluation Plan

To evaluate the policy recommendation project, I will include a goal based evaluation (Community Sustainability Engagement Evaluation Toolbox, n.d.). Scriven (1978) defined a goal based evaluation as "any type of evaluation based on and knowledge of—and referenced to—the goals and objectives of the program, person, or product" (p. 178). The primary goal of the project is to provide information to collegewide groups of stakeholders, increasing understanding of the role the RtI-based program can play in raising overall institutional success rates. A second project goal is to build consensus that MCC should make an institutional commitment to continue developing the RtI-based program by refining interventions so that persistence, retention, and credential completion rates may increase and to use the results from ongoing analysis to inform program design.

I will use a mixed methods design for the evaluation and will include both formative and summative feedback (Lodico, Spaulding, & Voegtle, 2010). Lodico, Spaulding, and Voegtle (2010) have stated that formative evaluation can provide "feedback loops" (p. 18) that contribute to ongoing project improvement. Quantitative and qualitative data will provide formative feedback through. Qualitative data will come from discussions following presentations. I will design presentation sessions to include time for small group discussion and large-group question-and-answer sessions. (A list of questions to focus the small group discussions is included in Appendix A.) Each small group will record members' discussion input on flipcharts and share with the large group. A notetaker will record questions and answers from the large group. I will collect notes and flip charts after each session and analyze the information using a thematic approach (Lodico et al., 2010) to determine how well the goals of clearly disseminating information about the RtI-based program and of building consensus for support of the RtI program were met.

Quantitative data will come from surveys using a Likert scale. MCC's Center for Faculty Professional Development (n.d.) requires administration of a survey developed for employee presentations; the survey contains a standard set of questions that may be adapted to each presenter's topic. This survey is included in Appendix A. Permission for inclusion of the survey in this doctoral project study is found in Appendix B. I will use descriptive statistics including frequency distribution and measures of central tendency (Lodico et al., 2010) to analyze survey responses. I will review and analyze both

qualitative and quantitative data after each presentation and use the information obtained from data analysis to inform future presentations.

According to Mertens and Wilson (2012), evaluators use summative evaluations at the end of a project with the purpose of influencing decision making. Because of MCC's participatory governance structure (MCC Strategic Plan, 2013), academic decisions require support of faculty teams as well as of the Board of Trustees and executive administration. Recommendations of support for the RtI-based program from groups such as the MCC Academic Senate and the MCC Curriculum Committee would indicate that stakeholders had found merit and worth (Mertens & Wilson, 2012) in the RtI program because of the policy recommendation project. Mertens and Wilson have defined merit as the measure of an evaluand against an objective standard; in the case of the RtI-based program merit would be established through presentation of findings from data analysis indicating statistically significant associations between enrollment in the RtI program and increased course completion, persistence, and retention. Mertens and Wilson have stated that worth is determined largely by the context in which the evaluand is placed. In the case of the RtI-based program, this value would be determined by the context of the national completion agenda and institutional efforts to increase completion by underprepared students.

Summative evaluation of the policy recommendation project will take place at the end of the Spring 2017 semester. Analysis of all surveys from presentations and of surveys given to participants in faculty workshops will provide summative feedback. I will incorporate this data into program review documents and NADE recertification

documents, providing evidence that the project was relevant to the local educational institution.

Project Implications

The goal of developmental education programs historically has been to increase reading and writing proficiency so that underprepared college students could succeed in college courses (Arendale, 2012; Bailey, 2008). Since Bailey's 2008 study revealed the low credential completion rates of DRW students, the goal has shifted toward designing DRW programs to ensure credential completion. This project supports that goal by informing MCC college and community stakeholders of data that indicate the RtI-based program design has significantly increased not only course completion rates, but also rates of persistence and retention by DRW students. Possible social change implications include identification of a replicable model to increase course completion and persistence for DRW students, particularly for those entering college with literacy skill levels that fall at middle school or beginning high school level.

For local stakeholders, and for DRW educators nationwide, increasing credential completion for lower-placing DRW students has been, and continues to be, problematic. While the findings related to course completion, persistence, and retention for DRW students enrolled in the RtI-based program were significantly higher than for students enrolled in the MLL program, retention rates remained below a threshold that can be expected to significantly impact longterm credential completion. Retention rates are significant because a student's failure to return from one academic year to the next lowers the student's ability to complete a credential, affecting the student's prospects for gainful

employment and lowering the college's overall credential completion rate. A position paper exploring in-depth issues related to the RtI-based program's success rates and a discussion of areas for improvement can motivate stakeholders to begin a discussion of what additional supports are necessary to increase overall college success for DRW students.

Conclusion

The position paper developed as the project associated with this research study will provide stakeholders including MCC's Academic Senate, the MCC Board of Trustees, and MCC's executive level administration a detailed summary of the RtI-based program design including the theoretical framework underlying the program, a report of the findings from data analysis, and a discussion of implications for further research. The goal of the project is to place MCC's DRW program within the context of the national move to increase success for developmental education students and the institutional goals for increased student success overall. This section includes a reflection on lessons learned from the process of completing this research study and associated project and recommendations for further research.

The RtI-based program evidenced significantly increased rates of course completion, persistence, and retention by DRW students. Although retention rates remained below the level demonstrated by college ready students (MCC, 2014), a significant increase for RtI-based program students indicates that the RtI model holds potential to increase DRW students' college success. Because increasing success for this student group has become a national priority (Bailey, Jeong, & Cho, 2010), further

research related to program models that have proven to significantly increase success holds value for community colleges.

Section 4: Reflections and Conclusions

Project Strengths and Limitations

The project associated with this research study is a detailed position paper recommending a change in institutional policy. In this section, I address project strengths and limitations and provide recommendations for the remediation of project limitations. I also discuss possible alternative approaches to addressing the problem. In addition, this section includes personal reflections on my growth as a scholar, a practitioner, a change leader, and a project developer, growth that has resulted from my progression through the doctoral program. This section concludes with a reflection on the importance of this work in terms of the local community, potential impact leading to social change, and recommendations for future research.

Project Strengths

The strengths of the policy recommendation project are that the position paper and presentations provide a forum through which I can inform stakeholders of the analysis of the data (Mattern, 2013; Graham, 2015; Stelzner, 2010) related to the associations between enrollment in the RtI-based program for DRW and college success. MCC's organizational structure is grounded in participatory governance (MCC Strategic Plan, 2013). While the Board of Trustees ultimately approves adoption of college policy (MCC Board Governance Policies, 2016), the executive level administration presents policies for Board adoption, the Academic Senate recommends that policies be presented to the Board by the administration (MCC Academic Senate Charter, 2012), and groups of faculty such as the Curriculum Committee of the Academic Senate contribute to policy

development (MCC Academic Senate Charter, 2012). Thus, each identified stakeholder group plays a role in the adoption of college policy. MCC is currently involved in a collegewide initiative to increase overall rates of completion, with reform of developmental education identified as a major component of this effort (MCC Board of Trustee minutes, May, 2015). Face to face meetings in which I can present detailed information from the position paper and discuss the strengths of the RtI-based program with a wide range of stakeholder groups provides an opportunity for me to use professional networks (Mattern, 2013; Graham, 2015) to increase collegewide understanding of the needs of DRW students. An additional strength of the project is that the position paper includes background on the theoretical framework on which the RtI-based program is based and a discussion of alternative approaches (Mattern, 2013; Graham, 2015; Stelzner, 2010) to the reform of developmental education programs. The identified stakeholders are aware that research has indicated that traditional approaches to DRW instruction have failed to significantly increase college success for underprepared students (MCC Board of Trustee minutes May, 2015; MCC Provost in MCC collegewide meetings August, 2013, May, 2014, May, 2015, December, 2015) but have not been presented with a detailed analysis of that research. For example, stakeholders have been told that Hern's (2010) approach has resulted in increases in the numbers of students who enroll in the Chabot College accelerated, one-semester option successfully completing freshman composition (MCC Provost in collegewide meeting, August, 2013). However, the fact that only 62% of upper-level students and 48% of lower-level students enrolling in that program passed the one-semester option to move on to freshman composition

(Hern, 2010), a fact that significantly lessens the percentage of the total group impact, has not been discussed. Presenting information from the position paper in meetings with stakeholders provides an opportunity to discuss alternative approaches to developmental education reform along with the limitations of those approaches, thereby increasing stakeholders' understanding of the complexities involved in creating programs that successfully increase completion for this student group. These discussions can help establish that the RtI-based program holds merit (Mertens & Wilson, 2012) for MCC students and, therefore, should be continued as a college policy.

Limitations and Recommendations for Remediation

While the policy recommendation project (position paper and associated presentations) offers opportunities for communication with stakeholders (Mattern, 2013; Graham, 2015; Stelzner, 2010), two considerations limit the project. First, stakeholders may simply skim the position paper or fail to read the document. Because each member of the identified stakeholder groups (MCC Board of Trustees, MCC Academic Senate and Senate Curriculum Committee, MCC executive level administration, MCC faculty) deals with many responsibilities that demand their time and attention, they must believe that the information provided holds sufficient value for them to read and evaluate the position paper. To address this limitation, I will include an executive summary (Mertens & Wilson, 2012) that condenses the details of the position paper into a one-to-two-page format. The shorter executive summary is more likely to catch readers' attention, increasing their willingness to receive more detailed information (Mertens & Wilson, 2012). Second, stakeholders must place the presentations on their agendas. If

stakeholders do not believe the proposed presentations are relevant to them, they may deny the request to place the presentation on a meeting agenda. To address this limitation, I will ask members of each stakeholder group with whom I have already established a personal connection to support my request that a presentation of the position paper be placed on the meeting agenda. Making use of pre-established connections with stakeholders and using that network of personal connections to create support for invitations to present to stakeholder groups (Fullan, 2012) can increase the likelihood that these stakeholders will schedule the requested presentations.

Recommendations for Alternative Approaches

Alternative approaches to addressing the research questions that focused this study could have involved using an experimental rather than a quasiexperimental approach or using a qualitative or mixed methods research design. An experimental design using a control group and an experimental group would have focused the study on analysis of interventions that formed components of the RtI-based program. For example, the experimental group could have received the treatment of career planning and advisor workshops while the control group simply received the traditional reading/writing instruction for developmental students. This would have allowed me to analyze the effect of the career planning component of the RtI-based program on increasing college success. Alternatively, using a qualitative research design would have allowed me to obtain feedback from students and teachers on the effectiveness of the RtI-based program and to incorporate student and teacher perspectives into recommendations for future

program modifications. A mixed methods design would have combined quantitative data analysis with qualitative analysis of student and teacher feedback.

Alternative Definitions of the Problem

For the purposes of this research study, I defined the local problem as the need for a systematic review of the RtI-based DRW program and associations between enrollment in the program and college success for DRW students. One alternative definition of the problem could have been that the failure of DRW students to complete college credentials was due to lower levels of literacy skills. This definition would have focused the research study on examining increases in reading/writing skills, possibly using a pretest/posttest design. A second alternative would have been to define the failure of developmental education students to complete credentials in terms of teacher effectiveness. This definition would have focused the research study on determining which teachers' sections showed the greatest overall student success.

Alternative Solutions to the Local Problem

An alternative solution to the local problem of DRW students failing to complete college credentials could be to limit enrollment of developmental education students by raising the test score required for admission, essentially eliminating the open door policy (Multin, 2012). This would reduce enrollment in the college overall, but the solution could increase college success rates because the group most at-risk for failure to complete (Bailey, 2008) would be pulled out of the total college population. A second possible solution could be to continue open admission, but shift DRW instruction to a noncredit, nonfinancial-aid-eligible structure. This solution would allow underprepared students to

enroll in college, but would eliminate their inclusion in statistics that are reportable for federal and state funding because noncredit students are not included in the numbers reported (Institute of Education Sciences National Center for Education Statistics Integrated Postsecondary Data System., n.d.). While this solution would maintain overall college enrollment numbers and could increase college success rates since only students who achieved college ready placement scores would move into degree and certificate programs, the noncredit model would increase college expenditures for DRW instruction because student fees for such programs are traditionally low (Workforce Investment Act, 1998; Workforce Innovation and Opportunity Act, 2014) and do not cover the total cost of instruction.

Scholarship, Project Development and Evaluation, and Leadership and Change

The doctoral program in reading and literacy leadership has profoundly affected my approaches to scholarship and project development and evaluation as well as to leadership and change. I have encountered new ideas and new approaches to working with low-skilled adults through the research that I have undertaken because of both the prerequisite coursework and the completion of the project study. Because of the many changes which have affected the field, changes that I have discussed in depth throughout this study, I have been required to take on greater leadership roles within my institution than had been expected in the past. The work I have completed through the doctoral program has contributed to my ability to step into these new roles. In the following discussion, I reflect on my personal and professional growth throughout my time in this program.

Scholarship

The process of completing this doctoral study, including the prerequisite program coursework, dovetailed perfectly with the curriculum design work with which I was involved within my department. I first encountered the concepts of RtI, the CCSS, and Boylan's 2009 TIDES model for developmental education reform during my first semester's coursework, Summer 2012. These concepts laid the foundation for the RtI-based reading/writing program which evolved over the following academic year. The Fall 2012 coursework, which included the topics of change leadership and further exploration of the impact of the CCSS and RtI, helped me move forward an agenda which radically changed the approach to DRW with which the department faculty were familiar. Spring 2013 formally introduced me to the basics of quantitative and qualitative research design and data analysis, principles I realized I would need to understand not only to complete the doctoral study, but to address issues related to research on DRW reform which were beginning to be discussed collegewide. The second year of coursework continued to align with my daily work as I explored research related to culturally responsive literacy instruction, use of data in curriculum design, and a more in-depth introduction to research design and data analysis. Throughout the prerequisite program coursework, I found that working as a scholar/practitioner strengthened my commitment to my work in the field and to the process of scholarly analysis of research which, in turn, informed my daily practice.

Throughout the process of completing the doctoral study, from prospectus to proposal; proposal defense; data collection, data analysis, and reporting findings with

discussion of project models with my Chair and Second Committee member; and, finally, development of the policy recommendation project, the alignment between work on the doctoral study and my daily work with DRW faculty and students has continued. This project is a natural outgrowth of that alignment because, moving into the coming academic year, the college is beginning the process of implementing guided degree pathways and finding the places where developmental education students can begin coursework that fits into a program path. The findings from my research study support an association between enrollment in the RtI-based program and increased college success for DRW students. Because increased success for all students is the goal of guided pathways (Bailey, Smith Jaggars, & Jenkins, 2015), it seems clear to me that the RtI-based program aligns with college and national goals. The presentations that form a component of this project will give me the opportunity to formally present the findings from data analysis and to discuss the value of the RtI-based approach to DRW instruction with collegewide groups of stakeholders who, while concerned about the potential success of developmental education students, themselves have little background or experience working with these students. Presenting the evidence from the research study's data analysis along with information related to the theoretical foundation underlying the RtI-based program and a scholarly discussion of strengths and weaknesses of alternative approaches to developmental education reform can build support for continuation of this program. For me, this project embodies the reality of the work of a scholar/practitioner: bringing scholarly analysis of research to real-world educational practice.

Project Development and Evaluation

The process of developing the project associated with this doctoral research study helped me link research to practice (Lodico et al., 2012). Developing the project also helped me recognize the need to expand discussion of the changes that implementing the RtI-based program has created beyond conversations with my department faculty. Engaging collegewide groups of stakeholders in a review, not only of data related to student success, but also to a discussion of the theoretical frameworks (Mattern, 2013; Graham, 2015; Stelzner, 2010) which have supported various approaches to developmental education reform, can increase overall understanding of the many needs of developmental learners. The steps that were required to move the project from a concept to a reality (selecting a project format, developing a project that would best align with the findings from the research study, creating an implementation plan, and designing a plan to evaluate the effectiveness of the project in achieving identified outcomes) have increased my understanding of the processes that lead successful project implementation. Completing the project required for the doctoral project study option has made me a more effective administrator and leader.

Leadership and Change

The process of implementing the RtI-based program that I analyzed in the research study and reported on through the policy recommendation project increased my own capacity for leadership. In January, 2012 I moved into a new department in a new institution in a new state; these changes required me to adapt to a different set of rules and expectations than the set with which I was familiar. I was fortunate that the faculty

with whom I began to work in my new position had been involved in the process of selecting their new administrator; as a result, I had met them as a group and discussed my experience and goals prior to stepping into the role of department leader. I was also fortunate that my experiences in my prior position had included exposure to many of the changes that were just beginning to impact my new institution and department. Speaking from personal experience helped me establish the fact that I was not attempting to impose an executive level mandate, but that I sought to help faculty respond effectively to national movements (Achieving the Dream, 2010; Complete College America, 2011) and changes in federal regulations (U.S. Department of Education 2011, 2012) that did, indeed, require substantive change in practice. I could empathize (Fullan, 2012) with the confusion and pain that faculty were experiencing as a program that they had built with the goal of bringing research and best practices to their work with underprepared students was being examined in what often seemed to be highly critical, frequently negative, terms. Meeting these faculty members with empathy and with concrete explanations of the forces driving the changes they were expected to make in their program created an atmosphere of collaboration (Fullan, 2012) rather than an atmosphere of antagonism; consequently, the work of designing and implementing the RtI-based program became a group effort to motivate (Fullan, 2012) all members of the department to examine research and data (Fullan, 2012) with the goal of creating a program that would significantly increase college success for our students. Moving through this doctoral program, particularly the work of conducting the research study and developing the associated project, have required that I actively incorporate Fullan's (2012) guidelines for

change leadership into my daily work. Each day I face a new demand to use practice to "drive theory" (p. 1), to "act with purpose and empathy" (p. 27), to "motivate the masses" (p. 49), to "collaborate to compete" (p. 87), to "learn confidently" (p. 109), to "know impact" (p. 125), and to "sustain simplexity" (p. 147). These principles now guide my daily work, increasing my capacity to function as an effective change leader (Fullan, 2012).

Analysis of self as scholar. Through the process of completing the doctoral program, I learned that I am open to work that forces me to stretch beyond the boundaries that I had unconsciously imposed. The concept of the scholar/practitioner was one to which I had not been exposed to prior to beginning this program. Educators working in my field of adult literacy instruction have traditionally focused on the teacher as practitioner rather than scholar. Although the field has encouraged ongoing professional development, the researchers offering the trainings have been viewed as the scholars, with the participants playing the role of student. To approach my field as a scholar and engage in ongoing research, including data analysis, has resulted in my developing a thirst to continue to research, to continue to examine practice in terms of focused research questions, and to analyze data in terms of those research questions rather than to simply report numbers to a state or federal agency. I have learned to question other researchers' findings and to critically analyze research reports rather than accepting every statement as unquestionable fact. As I have worked through this program, I have faced challenges in my daily work that have required me to apply the skills of a scholar/practitioner to resolve issues related to implementation of my program. As I move forward, I intend to

continue to seek opportunities to expand my scholarship through conducting research and publishing the results with the goal of creating a broader understanding of the needs of underprepared adult learners within the higher education community.

Analysis of self as practitioner. I have considered myself an effective teacher and administrator based on feedback from students and supervisors with whom I have worked throughout my career. At the same time, I consistently review my practices, seeking to improve. I often tend to question whether my own innovations in the classroom or in curriculum development have value. The work involved in completing this doctoral program confirmed that I have been effective in both instructional and administrative roles; much of the research on best practices for instruction, use of data, and effective management of change matched strategies that I have consistently incorporated into my own work over the years. Since self-doubt is an area with which I have, and still do, struggle, the confirmation that my own practice has mirrored techniques that are recognized as effective has helped me move forward with greater confidence. I will need to continue to review my own practice with an eye to improvement. However, the work I have completed throughout this program, particularly the work of designing and conducting the research study and designing/implementing the project and evaluation, have increased my belief in my own abilities to move forward an agenda to help struggling adult learners while building consensus to support program changes.

Analysis of self as project developer. Developing the policy recommendation project, including the plan for project evaluation, showed me that I have developed the

skills to think through a complex plan and break that plan down into manageable pieces for the purposes of implementation. In the past I have been responsible for developing and executing projects related to grant funded initiatives that supported the programs in which I worked. However, these activities involved following a set of guidelines prescribed by the grant; outcomes and deliverables were set by the parameters of the grant guidelines funding the project. The project option doctoral study required that I first design and execute a study following either a quantitative, qualitative, or mixed methods design; identify a research approach; ground the study in a theoretical or conceptual framework; collect and analyze data; report findings; and, finally, develop a project that aligned with the purpose and findings of the study. This process has taken me beyond the scope of project implementation with which I was familiar; consequently, my project development skills have grown. I believe that in the future I will be able to successfully design and execute more complex projects than I have in the past because of having completed the doctoral program.

Reflection on Importance of the Work

The policy recommendation project incorporates the goal of presenting details of a position paper to stakeholders with the goal of presenting at local, state, and national conferences and publishing results in a peer-reviewed journal. Achieving these goals creates opportunities to disseminate information related to a promising approach to increasing overall college success for DRW students. Because the issue of increasing college completion for underprepared learners has moved into the arena of national discussions related to higher education policy, this work holds relevance for the local

institution as well as for other colleges attempting to redesign developmental education programs.

Implications, Applications, and Directions for Future Research

The causal-comparative research study and the associated policy recommendation project have the potential to positively impact educational practice, both at the local institution and at other community colleges with similar student demographics. Changes in practice that may result from the dissemination of the findings from the study may, in turn, lead to social change resulting from underprepared students achieving greater success in postsecondary training. In the sections that follow, I elaborate on the potential impact of the study and associated project and discuss possible directions for future research.

The Project's Potential Impact on Social Change

One important aspect of the RtI-based DRW program is that the program implemented specific interventions designed for specific groups based on placement levels rather than taking a blanket approach (Boylan, 2009) to instruction. The majority of developmental education reforms suggested by researchers either target the near-college-ready group (Bailey, 2008; Bailey, Jeong, & Cho, 2011; Coleman, 2014) or take a one-size-fits-all approach (Hern, 2010; Bailey, Smith Jaggars, & Jenkins, 2015) to accelerate developmental students through the developmental sequence of coursework and into college level courses, ignoring the data that indicates that nearly half of the students entering college with placement scores that fall below tenth-grade-level equivalency fail to successfully complete the first semester (Hern, 2010; Johnstone,

personal communication, 2016). Analysis of data from the RtI-based program indicated associations between enrollment in the program and course success, persistence, and retention, particularly for students entering college with placement scores between eighth and tenth-grade-level equivalency in reading and writing. Identifying strategies to increase success for students entering postsecondary training with literacy skills that fall significantly below the level required for entry into a program of study can lead to positive social change at the individual and institutional level. Furthermore, as students leave college with higher levels of literacy skills and greater rates of credential completion, the local economy will benefit from a better-trained workforce, positively impacting the local community.

Individual Change

The dissemination of information related to data analysis of the RtI-based program, the purpose of the policy recommendation project, can lead to continuation of a program that has indicated associations between enrollment and increased college success for DRW students, including the group that enters college with eighth-to-tenth-grade-level reading/writing skills. This result can positively impact the students enrolled in the program because earning an increased number of college credits, particularly if a degree or certificate is obtained, carries a corresponding increase in employability (Liu, Belfield, &Trimble, 2014; Hillman, Tandenberg, & Fryar, 2015; Zeidenberg, Scott, & Belfield 2015). Increased employability resulting from increased skills will benefit this group of students, most of whom come from lower socioeconomic backgrounds (MCC, 2012).

Institutional Change

The fact that data analysis indicated associations between enrollment in the RtI-based program and increases in course completion, persistence, and retention can benefit MCC because the institution has joined the American Association of Community Colleges Voluntary Framework for Accountability (Stout, 2013), which requires reporting on success measures for DRW students. Moreover, these success factors are required reporting measures for all colleges receiving federal funding (Institute for Educational Sciences Integrated Postsecondary Data System, n.d.). Reporting higher rates of success will help MCC maintain current funding levels and could contribute to the college's eligibility for increased funding in the future.

Local community. Because research has indicated that some level of postsecondary training is necessary for success in the 21st century workplace (U.S. Department of Labor, 1999), identifying strategies to increase college success for lower-level students could lead to increased workplace success and a positive impact on the local community by increasing the pool of skilled workers available for employment. While the area surrounding MCC is currently experiencing an upward shift in employment (U.S. Department of Labor, 2016), the greatest increases in jobs paying more than twelve dollars per hour require a minimum credential of a postsecondary certification (U.S. Department of Labor, 2015). Therefore, high school graduates who fail to complete some level of postsecondary training are at risk for unemployment or underemployment. Continuation of a program that has demonstrated associations between enrollment in the program and greater rates of college success for lower-skilled

students can, therefore, benefit the local community. The policy recommendation project's goal of disseminating information to stakeholders, including the MCC Board of Trustees who are elected officials with community ties, can lead to support for continuation of the RtI-based program which can, in turn, contribute to an economic benefit to the local community over time.

Far-reaching. The RtI-based program evidenced significantly increased rates of course completion, persistence, and retention by DRW students. Although retention rates remained below the level demonstrated by college ready students (MCC, 2014), a significant increase for RtI program students indicates that the RtI model holds potential to increase DRW students' college success. Because increasing success for this student group has become a national priority (Bailey, Jeong, & Cho, 2010), further research related to program models that have proven to significantly increase success holds value for community colleges.

Applications

The policy recommendation project includes components that relate strictly to the local community (dissemination of the position paper to stakeholders and stakeholder presentations) as well as components that extend beyond the local institution (presentations at state and national conferences and publication in peer-reviewed journals). The project components of conference presentations and journal article publication can potentially disseminate information related to the findings from data analysis for the RtI-based program and details of the program's theoretical base to a broad audience of practitioners. The research associated with the policy recommendation

project was a quasiexperimental, causal-comparative study which, according to Lodico, Spaulding, and Voegtle (2010) can allow generalizability beyond the local setting to settings with similar demographics. Thus, it is possible that publication of results from data analysis and conference presentations discussing the RtI-based program design may influence practice related to the redesign of DRW programs.

Applications to the Educational Field

At present, community colleges across the United States are involved in the work of redesigning their DRW programs with the goal of increasing college success for underprepared students. Much of the research focused on this area of higher education practice has been geared toward only one aspect of the problem. For example, research on placement testing has indicated high rates of misplacement into developmental courses and the subsequent revamping of placement systems to decrease numbers of students referred for developmental education. The premise of this recommendation is that if more students begin college in college level courses, more students will complete a credential (Bresciani, 2012; Brothen, 2012). Proponents of acceleration have focused research on increasing college success by decreasing the numbers of courses in the developmental sequence, basing the recommendation on the premise that if students begin college level courses sooner, more students will complete programs (Hern, 2010). Unfortunately, even though placement test reform has decreased the numbers of developmental students and acceleration models have decreased the time lag between entering college and beginning a college level course, neither strategy has shown increased rates of credential completion (Bresciani, 2012; Brothen, 2012; Hern, 2010).

Similarly, research on contextualized instruction and coenrollment in college level courses, a parallel strategy to acceleration which places students in a college level course with support provided through a developmental course, has indicated increased success in coursework, but has not indicated longterm increases in persistence, retention, or credential completion (Coleman, 2014; Perin, 2012). More recently, researchers championing a guided pathways approach to overall community college practice have recommended a complete revamp of programs of study with the goal of increasing credential completion, intentionally building developmental coursework into programs of study (Bailey, Smith Jaggars, & Jenkins, 2015; Rassen, Chaplot, Jenkins, & Johnstone, 2013). Early results indicate greater credential completion for the total group of community college students, but data has not been broken out to specifically examine completion rates for developmental education students (Bailey, Smith Jaggars, & Jenkins, 2015; Rassen, Chaplot, Jenkins, & Johnstone, 2013).

While each strategy mentioned addresses one aspect of the problem of low completion rates for developmental education students, Boylan's (2009) TIDES model incorporated aspects of multiple strategies, including those listed, to design a holistic approach to increasing college success for this group. This holistic approach of combining strategies to target interventions for specific student populations provided the framework for the RtI-based program. Currently, data analysis has identified associations between increased course completion, persistence, and retention for students enrolled in the RtI-based program for DRW. This finding suggests that combining strategies to create a holistic package of interventions may more effectively increase college success

for this group than an approach that focuses on one strategy only, an approach that essentially views placement in developmental coursework as the sole problem rather than as an indicator of the greater problem of lack of college ready literacy and systems navigation skills. Applications for community college practice include examining the multiple factors that lead to placement in DRW courses and designing strategies to address the needs of specific groups of students within the total population of DRW students.

Directions for Future Research

The findings from data analysis indicated associations between enrollment in the RtI-based DRW program and increases in course completion, persistence, and retention. Nevertheless, the rate of retention from Fall semester to Fall semester, while showing a significant increase from the MLI program for all RtI-program student groups, still fell below a level that could reasonably be expected to increase credential completion. Consequently, one direction for future research could be to examine which factors lead to a failure to return to college in the academic year following initial enrollment. A second direction for research is to examine longitudinal data for RtI-program students to determine if, over time, an association exists between enrollment in the program and increased credential completion. In addition, qualitative data related to students' perceptions of the program could provide insight that would allow practitioners to design more effective interventions. Finally, examining student performance within the RtI-program based on demographics including gender, age, race, ethnicity, and

socioeconomic status could lead to greater understanding of which factors most affect placement into DRW courses and progression through college.

Conclusion

The purpose of this study was to determine whether associations existed between enrollment in the MLI program or the RtI program for DRW and the college success factors of course completion, persistence, retention, and credential completion. A secondary purpose was to determine whether associations existed between instructional skill levels and college success factors by instructional group. This study was relevant to the local institution, which had implemented but not systematically evaluated the effectiveness of the RtI program, and for community colleges as a whole, because developmental education reform has become a major focal point of national education policy for postsecondary institutions (Bailey, 2008; Bailey, Jeong, & Cho, 2012; Chaplot, Rassen, Jenkins, & Johnstone, 2013; Rassen, Chaplot, Jenkins, & Johnstone, 2013; Bailey, Smith Jaggars, & Hodara, 2015). The fact that, overall, students enrolled in the RtI program showed significant increases in college success when compared with students enrolled in the MLI program indicates that a program that is structured around interventions designed for specific skill groups and combined with a holistic rather than a skill-focused set of interventions may increase college success for DRW students more effectively than programs that address only the developmental sequence of courses. The results of this study align with Boylan's and Trawick's 2015 statements that affirm the value of a holistic approach to DRW instruction. According to Boylan and Trawick, developmental education programs that combine multiple strategies including student

success courses; tutoring; revised placement systems; opportunities to coenroll in college level courses; contextualized instruction; and a focus on the noncognitive aspects of student success can create a support system that encourages all DRW students, even those entering college with low placement scores, to succeed. These interventions were embedded into the RtI program. The findings from data analysis of the RtI program results confirm Boylan's and Trawick's statements. My hope is that the findings from this study will contribute to a growing body of research that seeks to identify additional strategies to help underprepared students increase their college success. As Saxon (2016, p. 1) has said, "Underpreparedness is the enemy – not developmental education."

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Appendix A: Policy Recommendation

Executive Summary

In 2013 the DRW faculty introduced a new reading/writing program. Five semesters of data show the following results:

- 1-level-below-college – 65% pass college level course
- 2-3-levels-below-college – 74% pass reading; 72.5% pass writing
- Overall increase to 66% persistence (up from 61%), 32% retention (up from 25%); credential completion rates on track to exceed former program by 5 to 7 percentage points within two years

The faculty and I attribute this increase in college success for developmental students to the program structure which is grounded in a RtI approach (Fuchs & Fuchs, 2009). This report summarizes the program structure, discusses the research base that provided the program foundation, and recommends future steps to increase student success.

Program Structure Changes

- RtI-based approach provided specific interventions for specific skill level groups.
- Created a matrix of multiple placement measures to increase placement accuracy.
- One-level-below-college group enrolls in First Year Experience, college level course, and contextualized reading support course – exits college ready.
- Two-to-three-levels-below-college group enrolls in intensive First Year Experience with built-in connection to academic advisors and counselors,

reading support and writing support – exits 1-level-below college ready OR jumps to college ready level by retesting.

- 4-or-more-levels-below-college group OR needs GED to begin college – enrolls in noncredit, low-cost course to increase skills or prepare for GED exam – low placement score group exits at 2-3-below-college level or higher (retest for placement); GED group exits with diploma after GED exam and tests college-ready or 1-below-college.

Research Base

- Community College Research Center series on developmental education reform
- Dr. Hunter R. Boylan, National Association for Developmental Education, TIDES (Targeted Interventions for Developmental Education Students)
- Dr. Kay McClenney, Community College Center for Student Engagement, research on retention and success for community college students
- Research on RtI structure and strategies to build critical thinking and literacy skills from peer-reviewed journals

Future Steps

- Focus on retention, particularly on reducing gap in Spring to Fall enrollment
- Involve faculty in 1:1 relationships with students to increase retention
- Embed registration sessions for upcoming terms into First Year Experience and reading/writing courses
- Continue and expand financial commitment to lower-level students

The Problem

In 2012 I began working with our DRW faculty to revise our program structure. Changes in federal financial aid rules that included limiting the number of developmental credits for which Pell Grant dollars could be used to a total of thirty credits (U.S. Department of Education, 2011, 2012); prohibiting use of Pell grant dollars to support coursework with skill level exit competencies below ninth-grade (U.S. Department of Education, 2011); and eliminating ability to benefit testing (U.S. Department of Education, 2012) led to the decision to revise the program. These rules made it impossible to continue to offer the current program that included 36 credits for students who required remediation in all subject areas with exit competencies for the lower levels that approximated middle school level (MCC, 2012). However, it was possible to offer a redesigned program that would help underprepared students succeed in college while complying with federal guidelines.

The existing multileveled instructional (MLI) program had been designed to help students with lower levels of reading/writing skills raise their proficiency to the point that they could succeed in college. Many program practices had been instituted in response to local decisions such as not counting withdrawals from courses against students' academic progress (MCC advisor, personal communication, July, 2012). Moreover, faculty in credential-granting areas frequently questioned the readiness of lower-level students who had progressed through the program (MCC faculty, personal communication, April, 2012). These questions related to student readiness had led to a program focus on limiting, rather than encouraging, student progression. The program structure had also

evolved in response to the state's decision to defund Adult Basic Education/GED Preparation programs (Mackinac Center for Public Policy, 2002), an action that left most low-skilled adults with little access to basic skills instruction. Nonetheless, the obligation to comply with federal law forced a program redesign.

Background

Because college data (2012) documented that 60% of incoming developmental education students tested into the two lower levels of reading/writing, the faculty and I chose not to adopt strategies that automatically accelerated all developmental students into college level courses within one semester or less. Instead, the group developed a program based on Boylan's (2009) recommendation to create a structure of targeted interventions, a program like the RtI (Fuchs & Fuchs, 2009) approach that has increased academic success for underperforming students in K-12 settings. This RtI-based approach targets specific interventions to specific skill level groups, incorporating a variety of strategies to provide the most appropriate supports for students at varying levels of skill readiness. The redesigned program reduced instructional levels (Edgecombe, 2011) from four to two and combined strategies to increase success by focusing on persistence and retention (Boylan, 2009; Gulley & Mullendore, 2014; McClenney & Dare, 2013) along with literacy skills. Initial data indicates that the RtI-based program has increased our rates of course completion for lower-placing students from 57% to 74% (reading) and from 60% to 72.5% (writing). This increase justifies an in-depth examination of the program results along with a discussion of how the RtI-based program aligns with the

college's strategic plan and fits into its commitment to building guided pathways to increase academic success.

Historical Context of Developmental Education Reform

The traditional focus of developmental education programs was on building basic skills (Arendale, 2011). This structure led to strengthened skills and college success for the students who progressed through the programs (Boylan & Bonham, 2011). However, most students failed to complete the developmental sequence (Bailey, 2008). Bailey (2008) and Bailey, Jeong, & Cho (2010) have suggested that by delaying the entrance to coursework leading to credentials, the MLI structure presented a barrier to students whose common characteristic is lower socioeconomic status (U.S. Census Bureau, 2012). These students' pressing need to earn credentials that led to sustainable employment was not met by adding years of time to college.

Recognizing the failure of developmental students to complete credentials Achieving the Dream (2010) and Complete College America (2011) began to call for reform. State legislators began to pass mandates that radically altered access to programs to increase basic skills readiness. Texas reformed placement testing measures (Pretlow & Wathington, 2013); Florida mandated exemptions from placement testing for students who enrolled in ninth grade from 2004 on and subsequently earned a Florida high school diploma (Florida Senate Bill 1720, 2013); North Carolina reformed placement testing practices and mandated a shortened developmental sequence (Morrissey, 2013); and Tennessee opened free community college access (Tennessee Promise, 2016) and

mandated corequisite enrollment in college level courses for developmental students (Mattson & Klafehn, 2016).

Limitations of Alternative Approaches

At this time, developmental education reforms have been in place, at most, for ten years. Although the efforts aimed to raise credential completion rates for underprepared students, there is little longitudinal data that show increases in credential awards. Furthermore, the data show that while students with placement scores indicating reading/writing skills below tenth-grade-level equivalency have increased their course success rates, approximately half of this group nationally is still failing in the first semester of coursework (Hern, 2014; R. Johnstone, personal communication, May, 2016). This disturbing fact merits examination. The following are detailed examples of the programs that reports have frequently touted as successful.

California Acceleration Project. Hern's 2014 data from the California Acceleration Project (CAP) website document that educators have achieved their goal of increasing "the numbers of community college students who complete college level gatekeeper courses in English and Math" (CAP, 2016, p. 1). However, completing a gatekeeper course does not guarantee completion of a credential. The most recent CAP analysis (Hern, 2014) focused only on completion of the gatekeeper courses. Moreover, data from the Chabot college one-semester, integrated reading/writing course (Hern, 2010) showed that 48% of students who normally would have placed into a two-semester developmental sequence passed the one-semester accelerated course. While the students who passed the course went on to pass freshman composition at the same rate as students

with higher initial placements (Hern, 2010), the fact that a 52% majority failed to progress beyond the developmental course should not be ignored. While this result may have significantly increased from rates for students enrolling in other Chabot models (Hern, 2014), this college's strategic plan calls for greater rates of student achievement. Therefore, the college cannot adopt an approach that has proven to produce low success rates for low-level students.

Accelerated Learning Program. Since 2006 the Community College of Baltimore County (CCBC) has offered an Accelerated Learning Program (ALP) for upper-level developmental writing. In this model students enroll in freshman composition with a developmental writing support course (Accelerated Learning Program, 2016). This model has shown increased pass rates in freshman composition for developmental students, with 63% of students who enrolled in the paired courses passing freshman composition within one year compared with 22% of students who enrolled in a stand-alone developmental writing course (Accelerated Learning Program, n.d.). ALP students have also shown increased course completion in college overall, with 27% of ALP students earning 24 or more college credits within two years compared with 13% of students who took stand-alone developmental writing (Accelerated Learning Program, n.d.). However, despite the increases in course success, the CCBC ALP model has not been linked to increases in credential completion (Accelerated Learning Program, n.d.). An additional factor to remember is that the ALP model at CCBC, and at most institutions, is available only to upper-level developmental writing students. To affect completion by developmental students overall, alternate success strategies must be put in

place to increase success for lower-placing students.

Tennessee model. In 2014 the Tennessee Board of Regents (TBR) mandated that Tennessee colleges could not offer stand-alone developmental education courses, requiring concurrent enrollment in a general education course for all students with ACT scores below 19 (Mattson & Klafehn, 2016). At the same time the state opened free community college access to all Tennessee graduates with ACT scores of 12 or above (Tennessee Promise, 2016). This mandate did not extend to technical colleges which in Tennessee are separate institutions providing all Career and Technical Education (CTE) instruction (Tennessee Board of Regents, 2016), an important difference this college must address to include CTE students in a move toward corequisite remediation. Tennessee piloted the corequisite model in 2014-2015 and jumped to full-scale implementation for 2015-2016 (Mattson & Klafehn, 2016). Three points are vital to remember when examining the Tennessee model.

- TBR allowed each college to determine how to implement corequisite enrollment for developmental students, meaning that many models exist (Mattson & Klafehn, 2016).
- The move to corequisite remediation can only provide one year of data (Mattson & Klafehn, 2016) that can only reflect changes in course completion and one-semester persistence rates. No retention data can yet be measured since retention reflects Fall to Fall enrollment (Institute of Education Sciences National Center for Education Statistics Integrated Postsecondary Data System, n.d.); moreover, at least four years of implementation will be

necessary before any data related to credential completion can be accurately assessed.

- A student who fails courses loses the Tennessee Promise scholarship (Tennessee Promise, 2016), a condition that increases the importance of student success for low-placing, at-risk students.

Three Tennessee institutions offer insights into the possibilities of corequisite remediation. Nashville State chose a model which offers several options for enrollment with reading support with an ALP model for writing support (P. Armstrong, personal communication, October, 2015; December, 2015), a model very similar to the RtI intervention for upper-placing students. Volunteer State also selected an ALP model for writing remediation but added a student success course as the choice for reading remediation (T. Denley, personal communication, December, 2015), a similar structure to the RtI intervention for lower-placing students. Austin Peay State University chose a model which provides two contact hours of required contextualized instruction related to students' college level courses. Since Austin Peay is the only Tennessee college with more than two years of data (L. Griffey, personal communication, December, 2015), an in-depth review of the Austin Peay program can provide insights into the model.

According to Loretta Griffey, Director of the Austin Peay structured learning support program, (personal communication, December, 2015), the university implemented the model with the intent of reducing budgetary commitment to developmental education. An additional factor was that the TBR had prohibited universities from offering formal developmental education courses (Tennessee Board of

Regents, n.d.). Beyond the financial and legal issues, Griffey also stressed the fact that the Austin Peay model includes distinct characteristics. First, Austin Peay is not an open-door institution. While the entry-level floor is low, requiring ACT scores of 14 in all areas or high school GPA of 2.0, (L. Griffey, personal communication, December, 2015), there still is a floor, an admissions policy that differs from the open-door policy (Multin, 2012) to which this college subscribes. Second, the university implemented corequisite remediation within an overall program redesign that included revising satisfactory academic progress standards so that developmental students were no longer suspended if they failed any of their first-semester developmental coursework, designing structured semesters that included a student success course in the first semester, and intentionally spreading corequisite support across three semesters to lengthen the time in which developmental students would receive academic assistance (L. Griffey, personal communication, May, 2016). Griffey (personal communication, May, 2016) stressed the fact that the Austin Peay model takes a holistic view of support and that to adopt any one piece of the program alone will lower success. When examined in detail, the Austin Peay holistic approach closely resembles the RtI model implemented here. However, as an open-door institution this college sees more students needing greater support. Thus, the college plan for developmental education reform must include specific strategies to support low-placing students in any program redesign.

Alternative placement methods. Researchers (Boylan, 2009; Pretlow & Wathington, 2013) have recommended replacing the one-score/one-test method of placement with a system that uses multiple measures including standardized test scores,

high school grade point averages (GPA), and/or noncognitive measures. As discussed earlier, many states have legislated placement reforms. However, when examining these moves to reform placement practices, we should remember that each state's K-12 system is based on laws that are unique to that state (National Assessment of Education Progress, 2014). Texas' move to reduce required placement testing was implemented within a three-tiered diploma system, but Texas law recognized only the two higher levels of diploma as equating to college ready skills, requiring placement testing for students graduating with the lowest level of diploma (Pretlow & Wathington, 2013). The Florida law that established graduation with a regular Florida high school diploma as an equivalent measure of college readiness for students enrolling in ninth grade from 2004 on (Florida Senate Bill 1720, 2013) recognized that in 1998 Florida had passed a law requiring exit testing for students in third, fifth, and eighth grade, with a passing score on the tenth-grade exam required to receive a standard high school diploma (Florida Department of Education, n.d.). Students who enrolled in ninth grade in 2004 were the first group to have passed through the entire testing sequence to reach high school and graduate. North Carolina's multiple measures placement system creates a hierarchy that requires first, a minimum high school GPA of 2.6 combined with a passing grade in a fourth-year math course higher than Algebra II (Morrissey, 2013). Students failing to meet this requirement proceed to establish readiness through mandated testing on a variety of instruments including ACT scores of Reading 20 and English 18, state developed diagnostic tests, and traditional college placement tests (Morrissey, 2013). This complex system certainly does not eliminate placement testing. Similar caveats exist

with each state's mandated placement reform.

In 2014 this college's DRW department, with support from Academic Affairs, implemented a system that examines performance through a variety of measures, including equating ACT (ACT, n.d.) and SAT (College Board, n.d.) to Accuplacer (College Board, n.d.) scores; establishing challenge systems for both reading and writing; and actively working with the testing department, academic advisors, and registration staff to identify low-placing students and refer them for reviews of placement scores and access to challenge opportunities before recommending they register in a DRW class. This system has increased placement accuracy and decreased placement into developmental education, particularly into the lower levels of DRW classes, as shown in Table A1.

Table A1

Effects of Placement Revisions on Enrollment

2011-2012	2012-2013	2013-2014	2014-2015
Prior to any revision in placement system	Revised reading placement; eliminated use of ESL test for native speakers; revised Accuplacer (College Board, 2014) reading scores using Correlations Between Various Placement Instruments (Ellis, 2009)	Revised writing placement; eliminated use of ESL test for native speakers; piloted use of Accuplacer writing sample (College Board, 2014)	Implemented multiple measures; correlated ACT (ACT, n.d.) and SAT (College Board, 2014); eliminated Accuplacer writing test (College Board, 2014) and substituted Accuplacer writing sample (College Board, 2014); integrated use of SEM into placement scores; added Nelson Denny Reading Test (Brown, Fishco, & Hanna, 2016) as challenge to reading test
4-below-college 402	Noncredit course placement	Noncredit course placement	Noncredit course placement
3-below-college reading 641	3-below-college reading 706 (increase in 3-below with reduction in 4-below placement	2-3 below-college reading 872 (increase in course placement with compressed 1-semester sequence)	613 (216-student reduction)
2-below-college reading 725	678	0 (revised reading course eliminated separate level of instruction	0 (revised reading course eliminated separate level of instruction
2-3-below-college writing 1019	999	974 (25 student reduction)	372 (600-student reduction)
1-below-college 1141	1122	1130	868 (273-student reduction)

Note. Placement numbers have not been adjusted to reflect college-wide enrollment decline of 6%-12%

As Table A1 shows, changes in placement and program structure have resulted in fewer students placing into DRW overall, with greater reductions in the lower placement levels. These numbers exceed the 6% (2012-2013) to 12% (2013-2015) drops in enrollment that the college has experienced across the institution. While more can be done to strengthen this placement system, it is important to must heed the cautions voiced by Smith Jaggars, Hodara, and Stacey (2014) to carefully examine state data prior to adding additional measures, including high school GPA, to a placement system.

Program Structure

In K-12 settings, RtI programs begin with a universal literacy screening to determine whether students are performing on grade level. Students who show below-grade-level test scores are given a primary level (mild) intervention, then retested. Students who test on grade-level move out of the RtI program while students remaining below-grade-level continue with secondary level (more intense) interventions provided. After retesting, students who again remain below-grade-level receive tertiary level (most intense) interventions and either exit the RtI program after retesting or are referred for specialized services. The RtI-based program reverses this model, a practice recommended for older students (Vaughn, Cirino, Wanzek, Wexler, & Fletcher, 2010), with students who present with the lowest placement scores beginning in the most intense level of interventions. Interventions gradually decrease in intensity as students progress to college-ready level. At each level, students may retest to jump out of developmental coursework, a process that is like the retesting after completing a series of interventions in other RtI approaches. Figure A1 shows the RtI program structure.

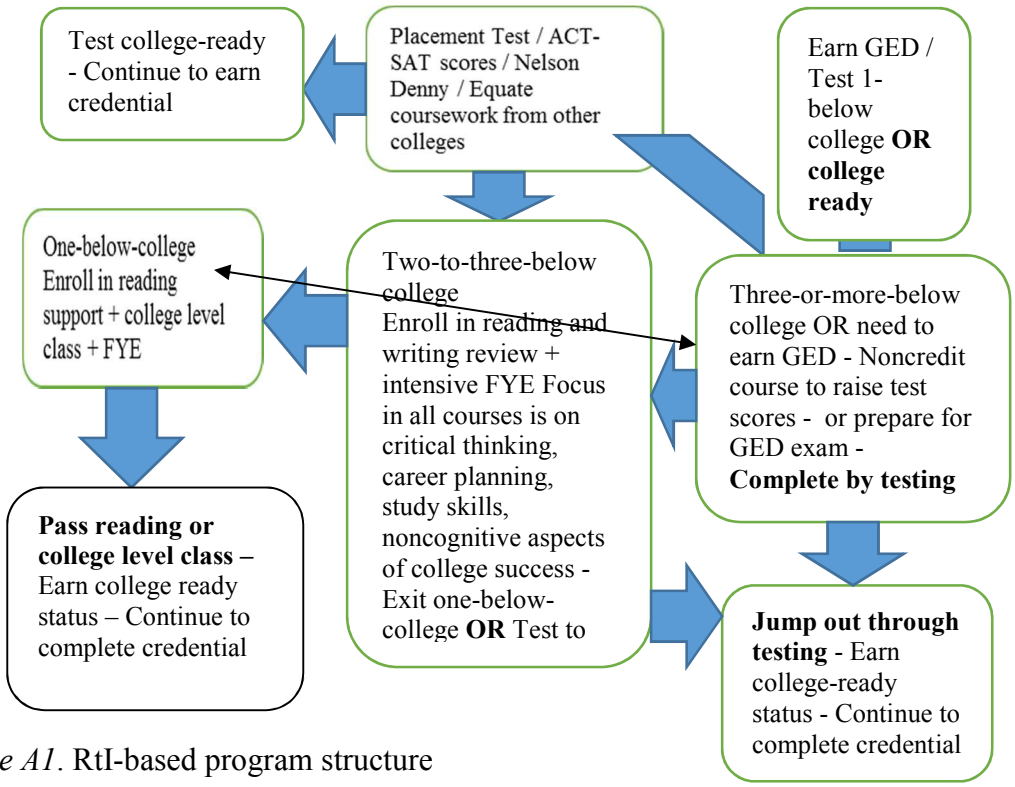

Figure A1. RtI-based program structure

Evidence from Literature

The structure of the RtI-based DRW program is a derivation of from Boylan's 2009 TIDES model along with research on RtI program structures. Research from the Columbia University Teachers' College Community College Research Center (CCRC) provided the research base on developmental education reform, supplemented by additional resources from peer-reviewed journals. Topics researched were developmental education reform, response to intervention, and topics related to interventions designed to build reading and writing skills.

Developmental Education Reform

Bailey's 2008 research fueled the national discussion of developmental education reform by bringing to light the 28% average for credential completion by developmental

students. While stressing the value of accelerating students, Bailey emphasized the fact that acceleration would not be the most effective strategy for students with scores that fell more than five points away from the college ready cut-off. Bailey's study provided the foundation for much of the research on developmental education reform, but the full discussion which recognized that differences in skill placement levels could affect a student's ability to succeed in an acceleration model has been reduced in popular reports to a focus on the acceleration strategy as a cure-all rather than as one approach designed for a specific group of students. This caution that acceleration is not a panacea has been echoed by Edgecombe (2011); Cho, Hopko, Jenkins, and Smith Jaggars (2012); and Coleman (2014), all of whom who have stressed the concepts that acceleration strategies may take multiple forms, that a one-size-fits-all approach will fail, and that for students placing into the lower levels of developmental education, a compression strategy that combined multiple levels into two levels with distinct strategies implemented at each tier can effectively accelerate lower-placing students. Boylan and Bonham (2011) reviewed research related to developmental reform, unpacking the misconceptions that had evolved from publication of statements from research taken out of context. Boylan and Bonham's work supported the concept that viewing all developmental students as one group and focusing on strategies to move the higher-placing students forward could inadvertently lead to decreasing success for lower-placing students. The research that has recommended reform while also recognizing the need to identify strategies to help lower-placing students succeed supported the RtI-based approach.

Guided Pathways in Developmental Education Reform

Bailey, Smith Jaggars, and Jenkins (2015) discussed implementation of guided pathways for community college students and included the concept of using developmental education programs as an on-ramp to college enrollment leading to desired career goals, a strategy that began here in 2013 with the RtI approach focusing on career selection in the lower level and on contextualized instruction to support coenrollment in a college-level course for upper-level students. Bailey et al.'s guided pathways discussion summarized the work of several other researchers such as Jenkins, (2011); Chaplot, Rassen, Jenkins, and Johnstone, (2013); Rassen, Chaplot, Jenkins, and Johnstone, (2013); Smith Jaggars and Hodara (2013).

RtI. Artiles and Thorius (2010) emphasized that providing effective interventions can increase success for students who have experienced little academic achievement in previous educational environments. Their research supported the need to provide appropriate instruction for underprepared students to maximize their potential for success (Artiles & Thorius, 2010). Abbott and Wills (2012) discussed effective placement and the use of a team approach to implementing interventions, stressing the fact that one goal of RtI in K-12 settings has been to reduce the number of students referred for academic interventions, a goal that data indicates has been achieved through implementation of the RtI-based approach at this college. Vaughn, Cirino, Wanzek, Wexler, and Fletcher (2010) and Wanzek and Vaughan (2010) discussed the need to begin instruction with intensive interventions for students with severe reading deficits, supporting the need to distinguish between placement score levels by designing

targeted interventions specific to each placement group. Similarly, Valentine, et al. (2011) found that implementing more intense interventions for students with lower Placement scores tended to increase course completion and persistence for this group. Boylan (2009) discussed redesigning developmental education programs using targeted Interventions designed to address the needs of students based on placement levels, the basis for the RtI model. Boylan recommended incorporating career planning, an emphasis on the noncognitive aspects of academic success, and instruction in study strategies, all of which were incorporated into the design of instruction for our lower level students. Boylan also recognized that students who placed nearer the college ready mark could benefit from concurrent enrollment in a college level course, the RtI strategy implemented at the upper level of DRW. Boylan's recommendations and the research on RtI implementation (Artiles & Thorius, 2010; Abbot & Wills, 2012; Vaughn et al., 2010); Wanzek &Vaughan, 2010; Valentine et al., 2011) support the design of the local RtI-based model.

RtI strategies for DRW. In 2014 Barnett and Cormier recommended aligning developmental coursework to the Common Core State Standards (CCSS) (National Governor's Association Center for Best Practices, Council of Chief State School Officers, 2010). During the 2012-2013 academic year course redesign process, the faculty intentionally aligned course outcomes to the CCSS, implementing a strategy that has since been recognized as a best practice (Barnett & Cormier, 2014). Additional strategies included in the RtI program, all selected on the basis of research supporting their effectiveness in increasing basic skills proficiency as

well as increasing overall college success included learning communities (Edgecombe, 2011; Barnes & Piland, 2013; Popiolek et al, 2013), reading fluency training (Ari, 2011; Paige, Lasinski, & Magpuri-Lavell, 2012), guided instruction (Huang & Newbern, 2012; Marchand Martella, Martella, Modderman, Petersen, & Pan, 2013), vocabulary building (Bifuh-Ambe, 2011; Hornberger & Link, 2012; McIntyre & Hulan, 2012), technology integration (Hsu & Wang, 2010; Mongilio & Wilder, 2012), content literacy (Perin, Bork, Peverly, Mason, & Vaselewski, 2011; Perin, 2012; Hamilton, 2013), and First Year Experience programs (Danziger, 2010; McClenney & Arnsparger, 2012; Markle, 2015). Each strategy was selected based on the research that indicated both the effectiveness of the strategy and the appropriateness of the strategy for the identified skill level group.

Evidence from Research

In this position paper, I present details of the study methodology along with a discussion of the findings and results of data analysis. I also discuss conclusions and implications for future research based on the results of the study. Finally, I present recommendations for policy implementation.

Methodology

I used a quasiexperimental design with a causal-comparative approach (Lodico, Spaulding, & Voegtle, 2012), selected because at the time that I began the study in Summer 2014, the RtI program had replaced the original MLI program, making it impossible to conduct a true experiment (Creswell, 2012). I chose a causal-comparative approach because, according to Lodico, Spaulding, and Voegtle (2010), causal-

comparative approaches allow the results to be generalized beyond the local setting. Thus, the findings from this study may help faculty and staff in other colleges as they redesign their programs.

Research Questions for Related Data Analysis

The research study that provided the data analysis on which this position paper is based included four research questions. The questions were a) What is the association by instructional group and student course completion? b) What is the association by instructional group and student persistence? c) What is the association by instructional group and student retention? and d) What is the association by instructional group and student credential completion? For each research question, a subquestion examined the association between instructional group and the identified college success factors by skill level placement. For each research question and subquestion the null hypothesis was that there was no association between instructional group and the identified success factor; the alternative hypothesis was that there was an association between instructional group and the identified success factor.

Sample Size and Timing of Data Collection

The sample used for this study included the total population of students enrolled in DRW courses from Spring 2011 to Spring 2015. I selected Spring 2011 as the starting date for data collection because that was the semester when the college implemented the enrollment verification process which requires no-shows to be dropped at the end of the second week of courses. Because prior college practices had not mandated drops for no shows, data prior to Spring 2011 could have included many students who had never

attended, essentially skewing the data so that accurate analysis became impossible. The treatment group included students enrolled in the RtI program between Fall 2013, the date of program implementation, and Spring 2015. Data was collected from the institutional data base during Summer 2015 and Fall 2015 and analyzed during Fall 2015.

Methods of data collection and analysis. I used census sampling (Lodico, Spaulding, & Voegtle, 2010) to analyze data for the entire population of DRW students enrolled in either the MLI program or the RtI program between Spring 2011 and Spring 2015. The data was de-identified so that individual students and teachers could not be identified by name or number. I used the chi-square analysis of associations (Creswell, 2012) to analyze the data. I used the Statistical Program for Social Sciences software to perform the chi-square calculations. The level of significance used was .05, the measure identified as the lowest point at which an association may be attributed to the effect of the treatment rather than to chance (Triola, 2012). I performed the chi-square analysis for the total population in each instructional group (MLI program or RtI program) as well as for each skill placement level within each group.

Limitations of study. The first limitation to this study was the study timeframe (academic semesters Spring 2011 through Spring 2015) because intervention levels within the RtI program were implemented at different times during the overall study period. This limited the total amount of data available for comparison of some of the RtI program interventions with the comparable skill placement level in the MLI program. A second limitation related to analysis of data for credential completion rates of RtI-program students. Completion of a degree or certificate requires a minimum of two

semesters for students beginning postsecondary education in a college ready program of study. For students requiring developmental reading and/or writing instruction, three to four semesters is required to complete the first certificate and at least seven semesters are necessary for the student to complete an associate's degree. Therefore, findings related to credential completion by students beginning college in the RtI program for DRW were limited because their total time in college had not allowed completion of the credential that was their goal.

Summary of Findings from Data Analysis

Research Question 1 addressed the association between instructional group (MLI program or RtI program) and course completion. Successful course completion was defined as students' meeting exit competency by showing at least one level advance in skill. The chi-square analysis showed that 59% of students enrolled in the MLI program successfully completed coursework while 65% of students enrolled in the RtI program successfully completed coursework, advancing at least one skill level at the end of their semester's enrollment. The test was statistically significant, with a chi-square value equal to 39.765 ($\chi 2 = 39.765$) and $p = 0$. Students enrolled in the RtI program showed greater rates of course completion than students enrolled in the MLI program, so I rejected the null hypothesis that there was no association between instructional group course completion.

Table A2

Association Between Instructional Group and Course Completion

Program	Course completion no		Course completion yes	
	n	Rate	*n*	Rate
MLI program	4141	41%	5938	59%
RtI program	1283	35%	2369	65%

Note. $\chi 2 = 39.765$); $p = 0$

Course Completion by Skill Level

Analysis of data related to the subquestion of association by skill placement level showed that in most cases RtI-program students outperformed MLI program students, showing statistically significant differences in *p* values after chi-square analysis. These results are summarized below:

- Four-or-more-below-college group (combined reading and writing instruction) – 53% of students enrolled in the MLI program successfully completed courses; 58% of students enrolled in the RtI program successfully completed courses.
- Two-to-three-below-college skill level placement group (separate reading and writing instruction) with advance of one skill level – 56% of reading students enrolled in the MLI program increased at least one skill level, and 74% of reading students enrolled in the RtI program increased at least one skill level. Two-three-below-college skill level placement group (separate reading and writing instruction) with advance of two or more skill levels – 5% of reading

students enrolled in the MLI program advanced more than one skill level in reading within a semester while 60% of reading students enrolled in the RtI program advanced more than one skill level in reading within one semester.

- Two-to-three-below-college skill level placement group (writing instruction) – 60% of writing students enrolled in the MLI program increased skill levels while 72.5% of writing students enrolled in the RtI program increased skill levels.

One-Below-College Group

For the one-below-college skill level placement group (reading instruction only), 62% of students enrolled in the MLI program increased one skill level while 59% of students enrolled in the RtI program increased one skill level. For the one-below-college-level group, students enrolled in the MLI program showed a greater rate of course completion than students enrolled in the RtI program. Although the results of data analysis for this intervention level showed a statistically significant difference between groups, with MLI students outperforming RtI students, some important points merit further discussion.

One-Below-College Intervention

The intervention designed for the one-below-college RtI group was based on contextualized reading instruction linked to a college level course in which students coenrolled. This intervention was scaled across the RtI one-below-college skill level placement group in Spring 2015. Students enrolled in the MLI program did not have the opportunity to coenroll in a college level course until they had successfully completed the

final level of reading instruction; therefore, it was not possible to determine an association between completion of a college level course and instructional group (MLI program or RtI program). When data related to the association between enrollment in a college level course and enrollment in the RtI program was analyzed, the findings showed that 64% of coenrolled students successfully completed their reading course and passed their college level course. Furthermore, the analysis showed that 0% of students who failed the reading course successfully completed their college level course. Because the purpose of developmental instruction has been defined as providing support to increase success in college level courses, the practical significance of the coenrollment data, which showed a significant association between passing the reading course and passing the college level course, supports continuing and further refining the RtI-program intervention for the one-below-college group. Figure A2 shows the results of data analysis related to course completion by instructional group and skill placement level. Figure A3 depicts the association between passing the reading course and passing the coenrolled college level course for RtI-program students only since this option was not available to MLI-program students.

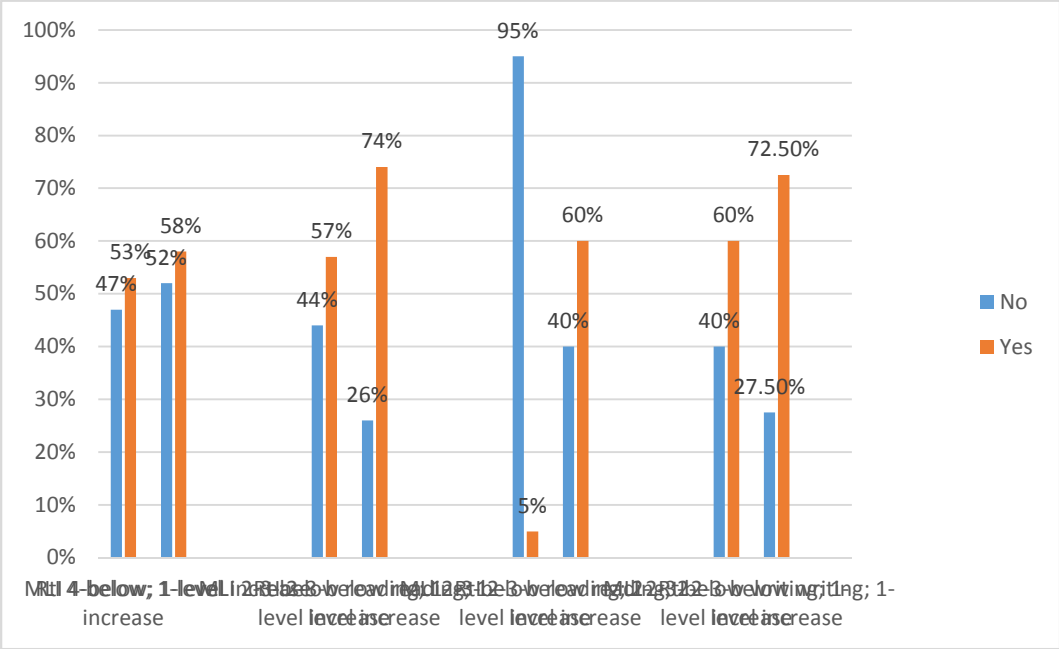

Figure A2. Course completion for instructional group and skill placement level

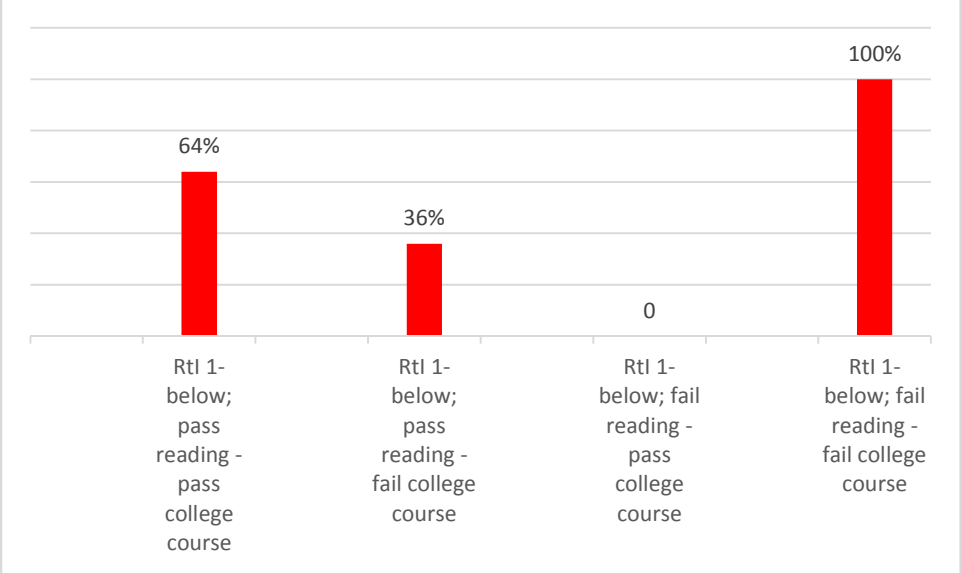

Figure A3. Associations between passing reading and passing college level courses

Persistence by Instructional Group

The chi-square analysis showed that 61% of students enrolled in the MLI program persisted, or continued enrollment from their first semester to the following semester while 66% of students enrolled in the RtI program persisted from the first semester's enrollment to the next semester. The test was statistically significant, with a chi-square value equal to 16.661 ($\chi 2 = 39.765$) and $p = 0$. Students enrolled in the RtI program showed greater rates of persistence than students enrolled in the MLI program; therefore, I and rejected the null hypothesis that there was no association between instructional group and course completion. Table A3 shows the results of data analysis related to student persistence.

Table A3

Association Between Instructional Group and Persistence

Program	Persisted no		Persisted yes	
	n	Rate	*n*	Rate
MLI program	1497	39%	2365	61%
RtI program	1516	34%	2887	66%

Note. $\chi 2 = 16.661$; $p = 0$

Persistence by Skill Level

Analysis of data related to the subquestion of association by skill placement level showed greater than or equal rates of persistence for RtI-program students than for MLI-program students.

- Two-three-below-college skill level placement group (separate reading and writing instruction) – 64% of MLI-program reading students persisted while 69% of RtI-program students persisted.
- Two-to-three-below-college skill level placement group (writing instruction) – 40.5% of MLI-program writing students persisted, and 56% of RtI-program writing students persisted.
- One-below-college skill level placement group – 66% of MLI-program students persisted while 65% of RtI-program students persisted. This result was not statistically significant, meaning that the difference in group performance, for this skill level group, could not be attributed to enrollment in either program. However, as will be discussed in the following section, RtI-program students showed greater rates of retention than MLI-program students.

Figure A4 shows the results of the chi-square analysis of persistence for the total programs and for each skill level within the programs.

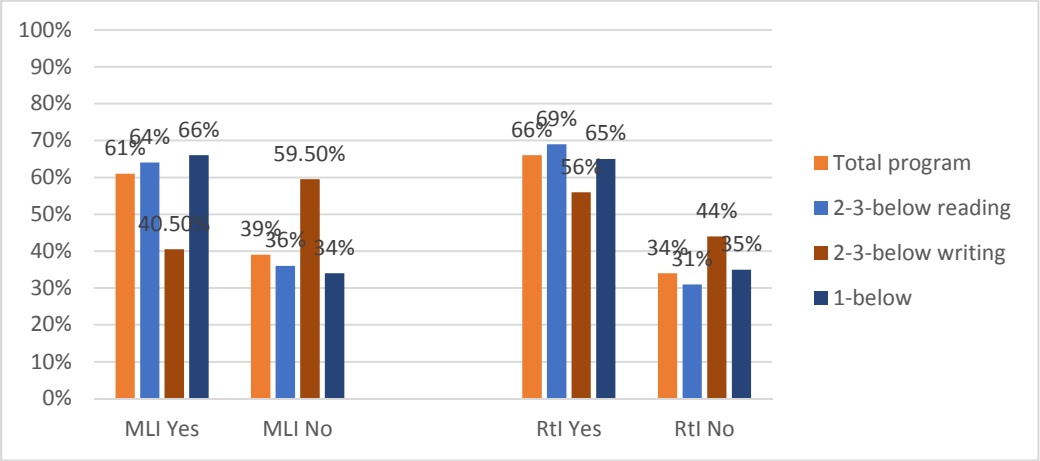

Figure A4. Persistence for instructional groups and skill placement levels

Retention by Instructional Group

The analysis of data related to retention showed the rate of retention, or Fall to Fall enrollment, for RtI students was 32% compared to a 25% retention rate for MLI-program students. The chi-square value was $\chi 2 = 51.03$ with $p = 0$. This difference was statistically significant, indicating that the association between program enrollment and retention can be attributed to the program in which students were enrolled. Table A4 shows details for associations between retention and instructional group.

Table A4

Association Between Instructional Group and Retention

Program	Retained no		Retained yes	
	n	Rate	n	Rate
MLI program	2902	75%	980	25%
RtI program	2995	68%	1408	32%

Note. $\chi 2 = 51.03$; $p = 0$

Retention by Skill Level

All skill level groups showed significant differences in retention rates, with RtI-program students outperforming MLI-program students in most cases. Two important points to note are that for the two-to-three-below-college-writing group, retention rates were higher for MLI-program students. However, the RtI-based intervention for this group was scaled across the total program in Spring 2015. Prior semesters' enrollment for this intervention level were small based on a pilot sample of courses being offered. Since retention measures Fall to Fall enrollment (Institute of Education Science Integrated Postsecondary Education Data System, n.d.), and the RtI intervention was scaled in Spring, retention rates for Spring 2015 students were excluded from data analysis. Consequently, the persistence data for this group is a more accurate reflection of the effectiveness of this intervention. Also, as noted in the discussion of persistence data, the one-below-college group showed a significant increase in retention for RtI-program students even though the persistence data for this skill level showed no association between program enrollment and persistence. This fact indicates that the RtI-based intervention has increased retention for the one-below-college group. Figure A5 shows the results of the chi-square analysis of retention for the total MLI and RtI programs and for each skill level within each program.

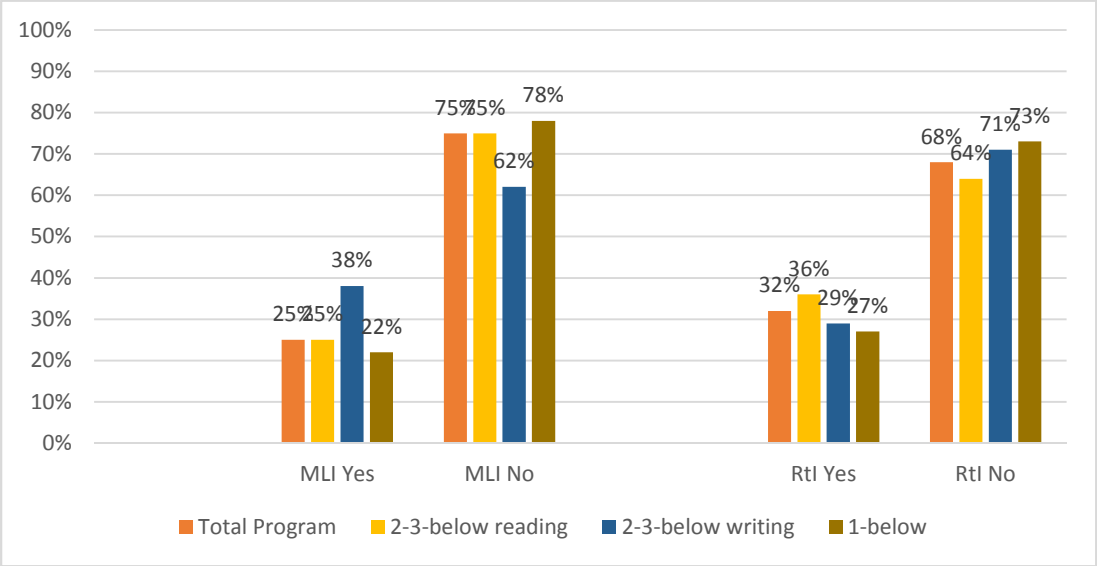

Figure A5. Retention for instructional groups and skill placement levels

Credential Completion

Credential completion was the only area in which MLI-program students outperformed RtI-program students. However, total enrollment time in college could have affected this outcome. Studuents enrolled in the MLI program entered college in 2011 and 2012 while the RtI-program students first enrolled in college in 2013. Thus, MLI-program students who had completed credentials had done so over a maximum period of four years while the RtI-program credential completers had been enrolled in college a maximum of two years. The time factor could have affected differences in credential completion rates for the two groups, giving the MLI group the distinct advantage. Analysis of longitudinal data related to credential completion for both groups of students is necessary to determine if , over time, the RtI-program students show increased rates of credential completion. Table A5 shows the rates for the two-to-three-below college

Table A5

Credential Completion Rates for Two-to-three-below-college Group

Two-three-below-college skilll placement level group	MLI credential completion		RtI credential completion	
	Yes	No	Yes	No
Reading	24%	76%	12%	88%
Writing	32.5%	67.5%	24%	76%

Keeping in mind that the MLI-program students included in this study enrolled in college in Spring 2011, students had been enrolled a maximum of thirteen semesters, with the majority having completed ten or more semesters of college at the time this data was collected. In contrast, the RtI-program students began in college in Fall 2013, with approximately half of them beginnning in Fall 2014. Thus, this student group had completed a maximum of five semesters in college, with many having completed only two semesters of college enrollment. When viewed in this context, the fact that RtI-program reading students completed credentials at half the rate of MLI-program students, and that RtI-program writing students completed credentials at approximately two-thirds the rate of MLI-program students indicates that over time rates of credential completion for RtI-program students will outpace the rates of MLI-program students. Moreover, the fact that all skill level groups of RtI-program students showed significantly greater rates of retention than MLI-program students supports the hypothesis that, with time, the RtI-program students will show greater rates of credential completion than MLI-program students.

Conclusions

The RtI-based program structure was designed and implemented with the goal of increasing overall college success, culminating in completion of a credential by DRW students, and aligns with the guided pathways initiative and with the institutional commitment to increase completion rates. The evidence from the literature related to the RtI-program structure and from the analysis of data related to program outcomes supports the fact that the RtI-based program structure can be linked to increases in course completion, persistence, and retention for all skill levels. In addition, projections of probable increases in credential completion, factoring in the time required for completion of degrees and certificates, support a recommendation to continue and expand the DRW RtI-based program.

Recommendations

It is vital to students' success to recognize that, even with statistically significant increases in Fall to Fall retention, a jump from 25% to 32% still leaves the college far short of its institutional completion goal. I stress retention because returning to college for the second year is a critical step in increasing credential completion, particularly for lower-placing developmental students who, even in our revised program, complete a maximum of fourteen credential-granting credits in their first two semesters, leaving an additional sixteen credits needed for completion of the first certificate. The gap in enrollment created by students not receiving an additional Pell award for Summer poses a special threat to low-income students who need to work. Leaving school for work related reasons is a primary factor in failure to complete for lower-income students (Boylan &

Bonham, 2011). While technology, systems improvements, and additional employees will alleviate some of the problem, waiting for these steps to be implemented leaves at-risk students at risk. However, a few simple, low-cost steps, could increase retention.

- Involve faculty in retention efforts: provide workshops on course retention strategies; educate faculty on the impact of withdrawals on completion; post notices in course shells reminding students to re-enroll for upcoming terms; schedule times for academic advisors to conduct registration sessions within DRW and First Year Experience courses.
- Recognize the financial commitment necessary for increased success: add collaboration time to workloads for instructors in paired courses; identify faculty who wish to work as retention specialists, giving one course workload credit of reassigned time for that instructor to focus on retention with groups of developmental students.
- Recognize the importance of early alerts in a retention program: train faculty to recognize warning signs of a student's likelihood of either withdrawing or failing a course and refer those students to support systems that could include contacting an identified faculty retention specialist, referring the student to tutoring services and/or the writing center, referring the student to counselors.
- Embed certificates of completion with fewer than thirty credits into every associate's degree so that students complete their first credential by the end of their second semester of college. This approach has proven to have

significantly increased credential completion by students enrolled in the Oregon Pathways program (Preus, DeWolf, & Hodgkins, 2013).

The RtI-based program has shown the promise of increasing success for DRW students, including the group entering with the lowest placement scores. I believe that by continuing this program, supporting the program with an ongoing budget commitment and ongoing data analysis to allow for refining interventions, and implementing the additional strategies listed, the RtI-based program can help the students with the greatest needs achieve their goals, helping the college to achieve the goal of increased credential completion.

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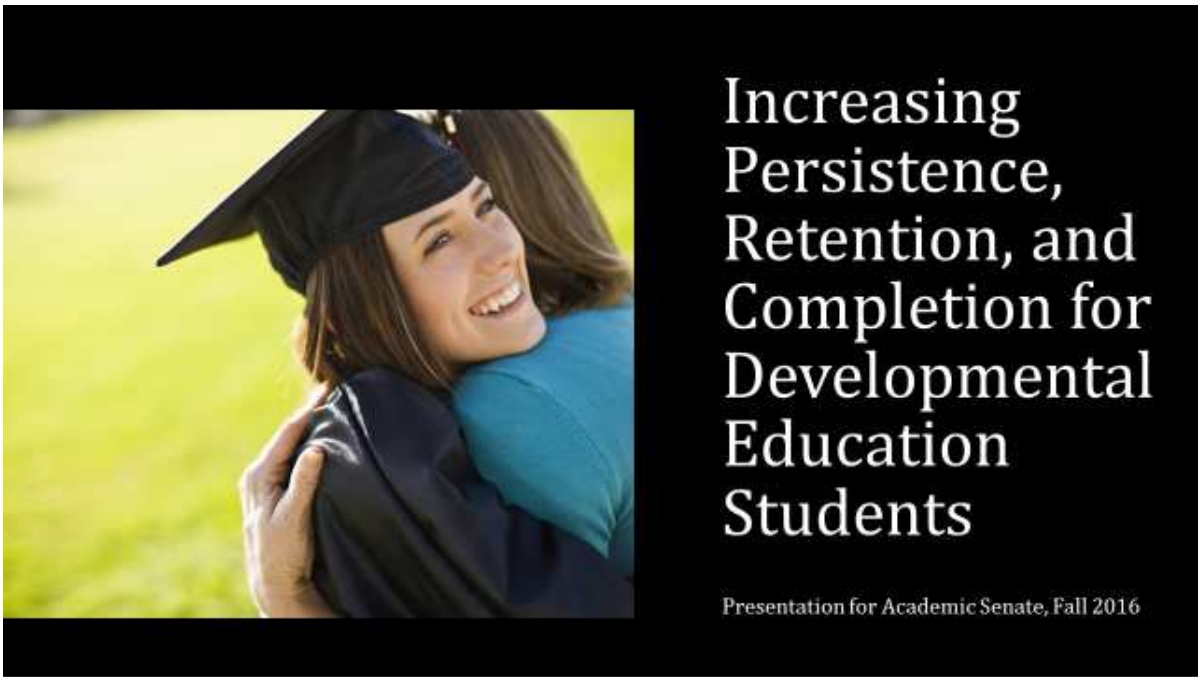
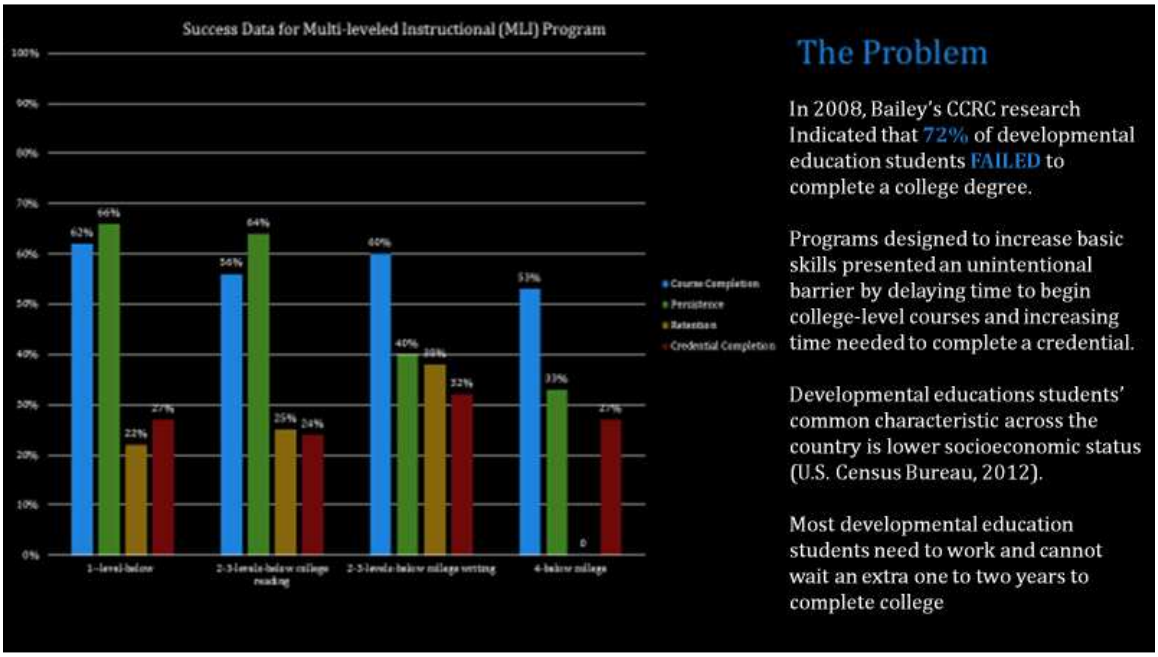
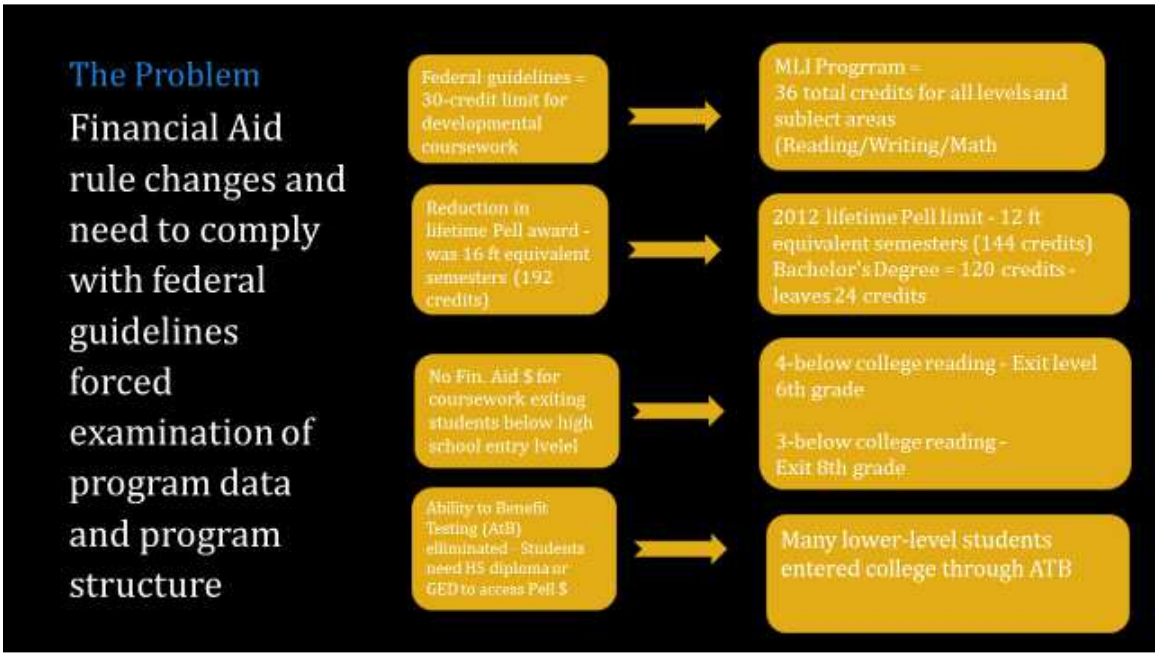
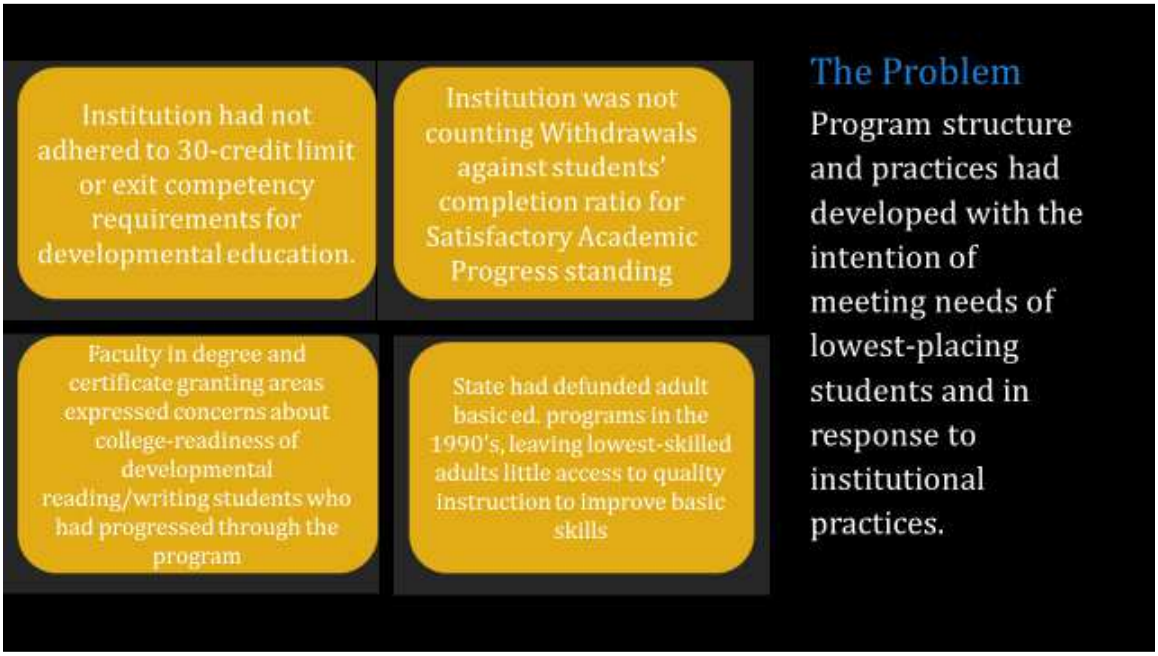
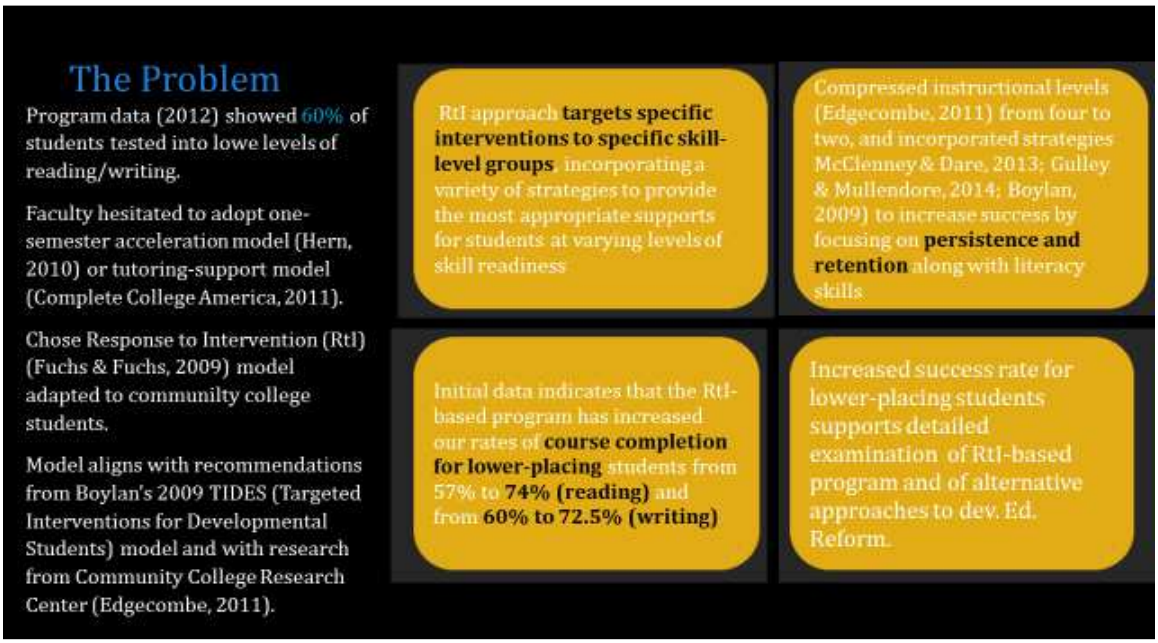
Power Point Presentation

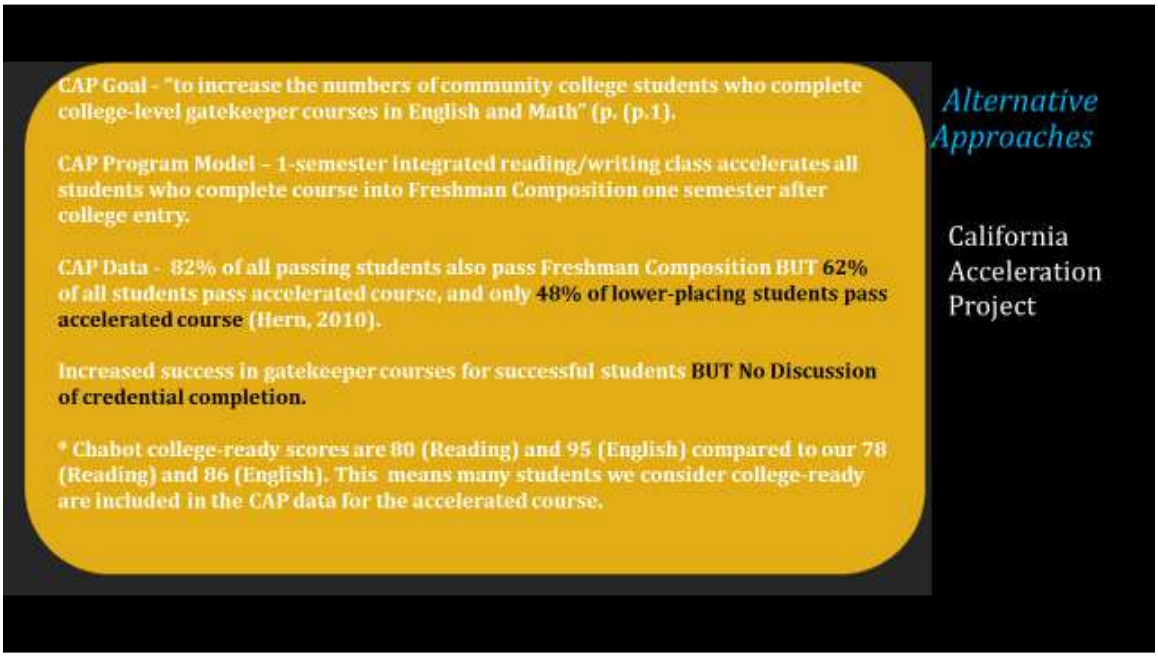


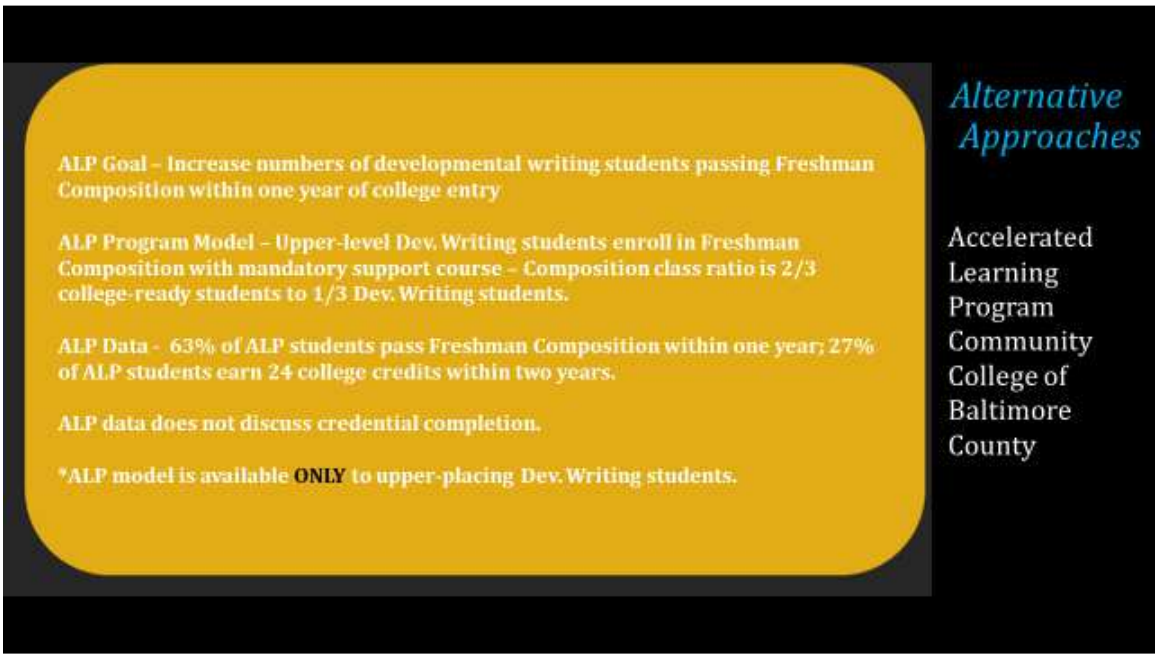


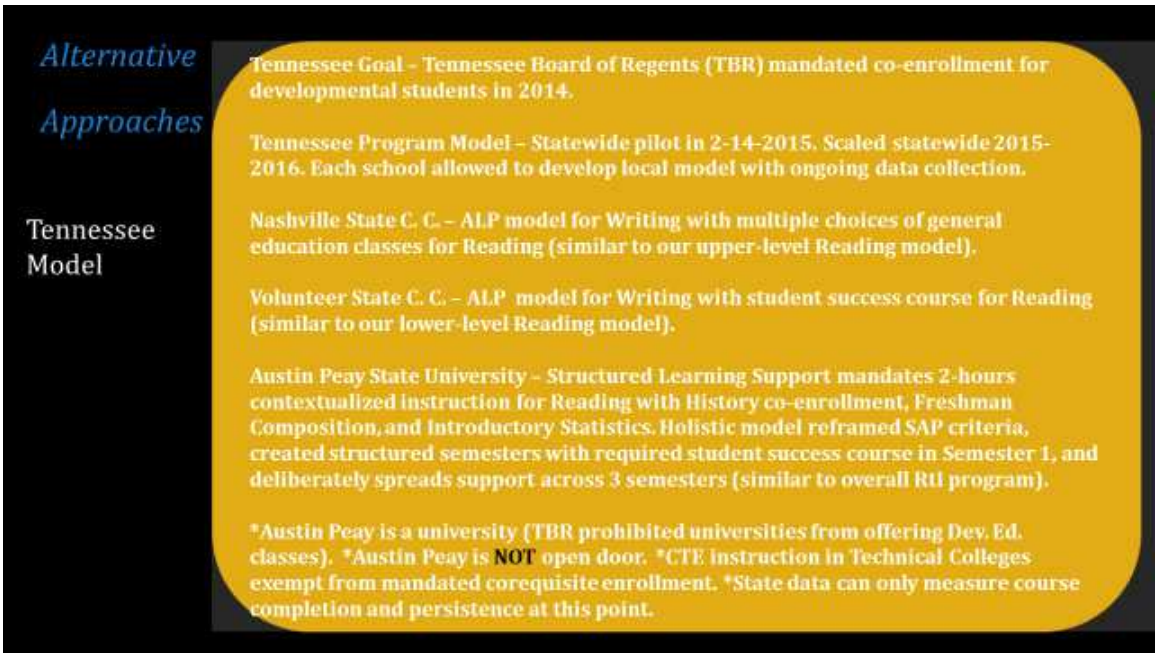

The Problem
Financial Aid rule changes and need to comply with federal guidelines forced examination of program data and program structure
Federal guidelines = 30-credit limit for developmental coursework
MLI Progrram = 36 total credits for all levels and sublect areas (Reading/Writing/Math
Reduction in lifetime Pell award - was 16 ft equivalent semesters (192 credits)
2012 lifetime Pell limit - 12 ft equivalent semesters (144 credits) Bachelor's Degree = 120 credits - leaves 24 credits
No Fin. Aid $ for coursework exiting students below high school entry lvelel
4-below college reading - Exit level 6th grade
3-below college reading - Exit 8th grade
Ability to Benefit Testing (AtB) elliminated - Students need HS diploma or GED to access Pell $
Many lower-level students entered college through ATB

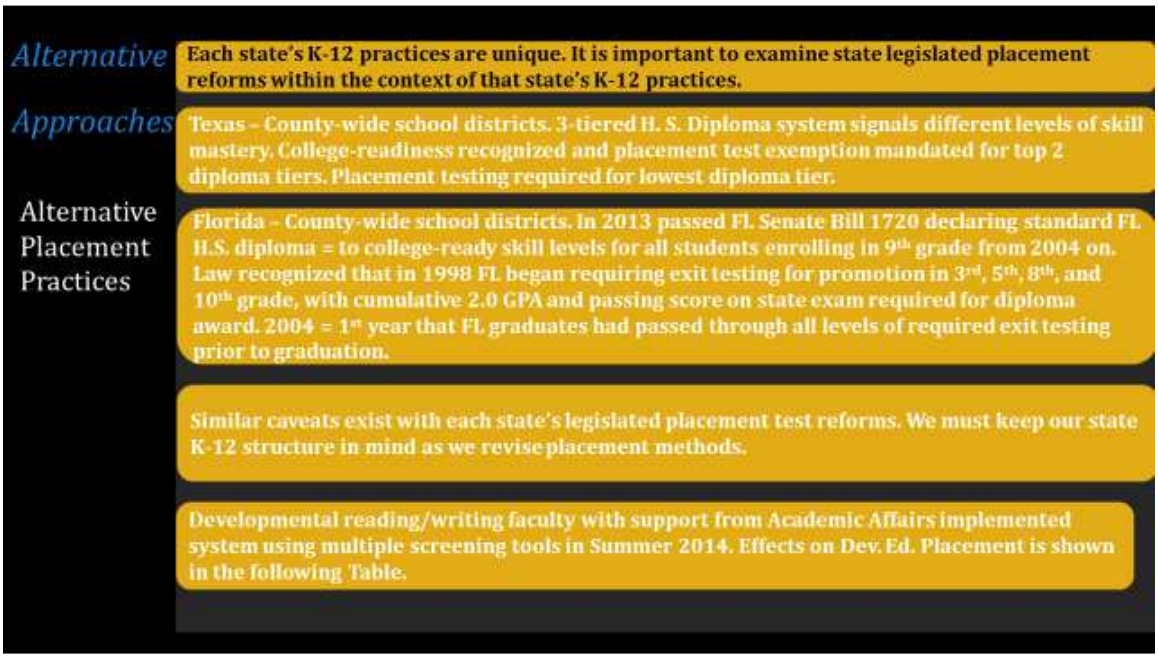

Institution had not adhered to 30-credit limit or exit competency requirements for developmental education.
Institution was not counting Withdrawals against students' completion ratio for Satisfactory Academic Progress standing
Faculty in degree and certificate granting areas expressed concerns about college-readiness of developmental reading/writing students who had progressed through the program
State had defunded adult basic ed. programs in the 1990's, leaving lowest-skilled adults little access to quality instruction to improve basic skills
The Problem
Program structure and practices had developed with the intention of meeting needs of lowest-placing students and in response to institutional practices.


The Problem
Program data (2012) showed 60% of students tested into lowe levels of reading/writing.
Faculty hesitated to adopt one-semester acceleration model (Hern, 2010) or tutoring-support model (Complete College America, 2011).
Chose Response to Intervention (RtI) (Fuchs & Fuchs, 2009) model adapted to communilty college students.
Model aligns with recommendations from Boylan's 2009 TIDES (Targeted Interventions for Developmental Students) model and with research from Community College Research Center (Edgecombe, 2011).
RtI approach targets specific interventions to specific skill-level groups, incorporating a variety of strategies to provide the most appropriate supports for students at varying levels of skill readiness
Compressed instructional levels (Edgecombe, 2011) from four to two, and incorporated strategies McClenney & Dare, 2013; Gulley & Mullendore, 2014; Boylan, 2009) to increase success by focusing on persistence and retention along with literacy skills
Initial data indicates that the RtI-based program has increased our rates of course completion for lower-placing students from 57% to 74% (reading) and from 60% to 72.5% (writing)
Increased success rate for lower-placing students supports detailed examination of RtI-based program and of alternative approaches to dev. Ed. Reform.


CAP Goal - "to increase the numbers of community college students who complete college-level gatekeeper courses in English and Math" (p. (p.1).
CAP Program Model – 1-semester integrated reading/writing class accelerates all students who complete course into Freshman Composition one semester after college entry.
CAP Data - 82% of all passing students also pass Freshman Composition BUT 62% of all students pass accelerated course, and only 48% of lower-placing students pass accelerated course (Hern, 2010).
Increased success in gatekeeper courses for successful students BUT No Discussion of credential completion.
* Chabot college-ready scores are 80 (Reading) and 95 (English) compared to our 78 (Reading) and 86 (English). This means many students we consider college-ready are included in the CAP data for the accelerated course.
Alternative Approaches
California Acceleration Project


Alternative Approaches
ALP Goal – Increase numbers of developmental writing students passing Freshman Composition within one year of college entry
ALP Program Model – Upper-level Dev. Writing students enroll in Freshman Composition with mandatory support course – Composition class ratio is 2/3 college-ready students to 1/3 Dev. Writing students.
ALP Data - 63% of ALP students pass Freshman Composition within one year; 27% of ALP students earn 24 college credits within two years.
ALP data does not discuss credential completion.
*ALP model is available ONLY to upper-placing Dev. Writing students.
Accelerated Learning Program Community College of Baltimore County


Alternative Approaches
Tennessee Model
Tennessee Goal – Tennessee Board of Regents (TBR) mandated co-enrollment for developmental students in 2014.
Tennessee Program Model – Statewide pilot in 2-14-2015. Scaled statewide 2015-2016. Each school allowed to develop local model with ongoing data collection.
Nashville State C. C. – ALP model for Writing with multiple choices of general education classes for Reading (similar to our upper-level Reading model).
Volunteer State C. C. – ALP model for Writing with student success course for Reading (similar to our lower-level Reading model).
Austin Peay State University – Structured Learning Support mandates 2-hours contextualized instruction for Reading with History co-enrollment, Freshman Composition, and Introductory Statistics. Holistic model reframed SAP criteria, created structured semesters with required student success course in Semester 1, and deliberately spreads support across 3 semesters (similar to overall RTI program).
*Austin Peay is a university (TBR prohibited universities from offering Dev. Ed. classes). *Austin Peay is NOT open door. *CTE instruction in Technical Colleges exempt from mandated corequisite enrollment. *State data can only measure course completion and persistence at this point.



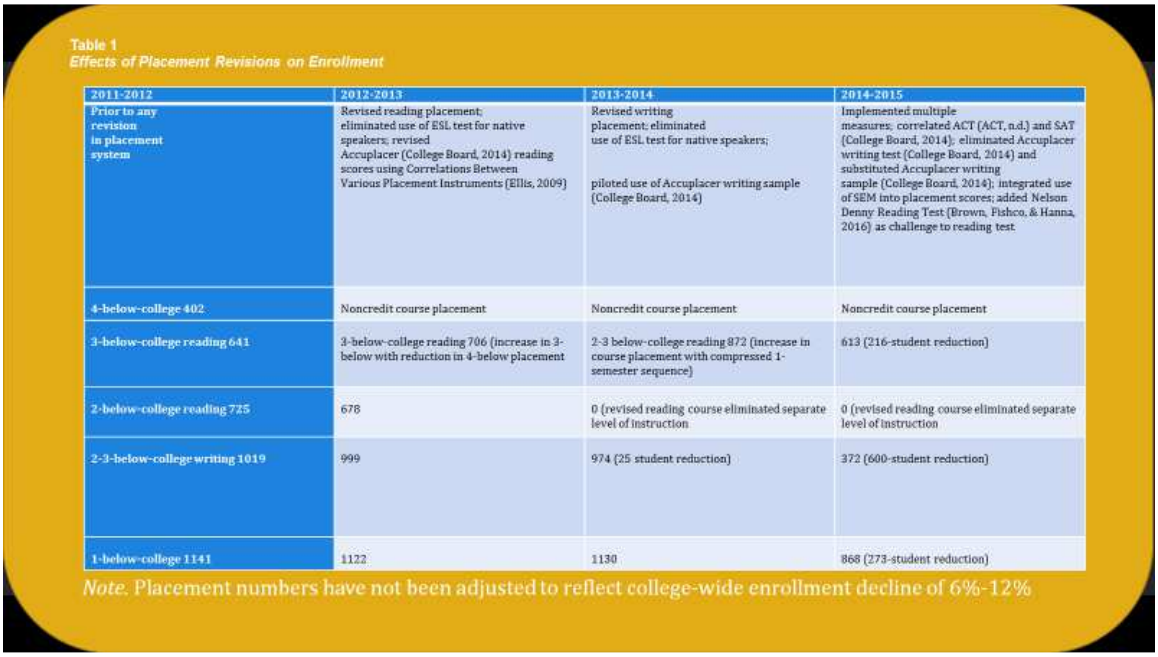
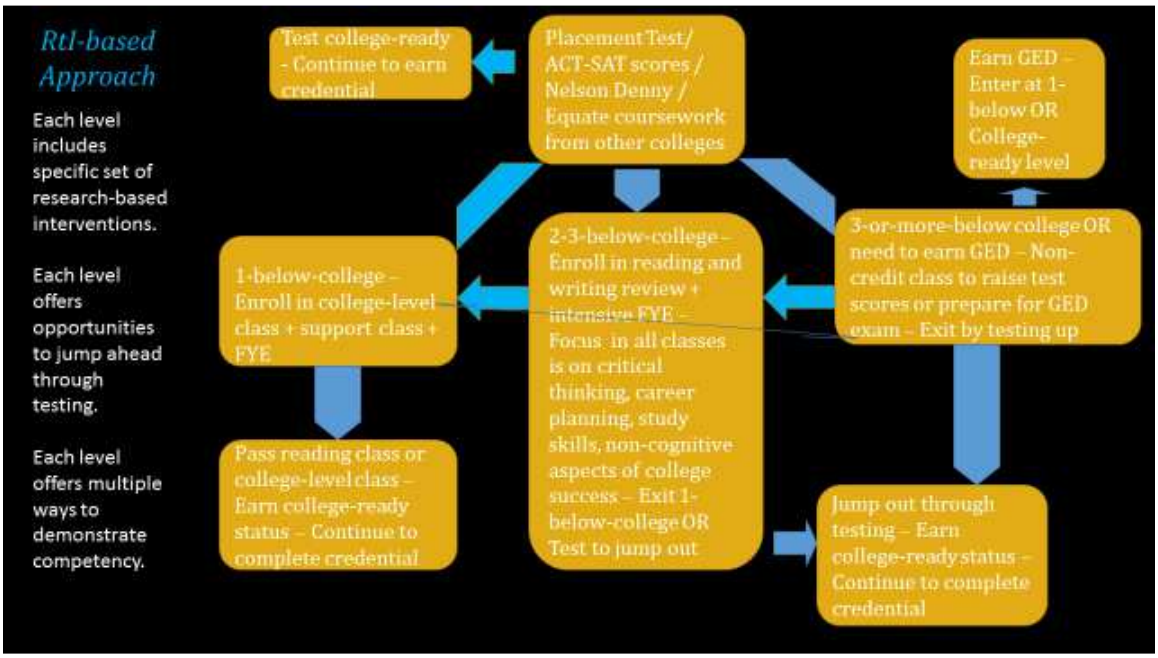


Table 1
Effects of Placement Revisions on Enrollment

2011-2012	2012-2013	2013-2014	2014-2015
Prior to any revision in placement system	Revised reading placement; eliminated use of ESL test for native speakers; revised Accuplacer (College Board, 2014) reading scores using Correlations Between Various Placement Instruments (Ellis, 2009)	Revised writing placement; eliminated use of ESL test for native speakers; piloted use of Accuplacer writing sample (College Board, 2014)	Implemented multiple measures; correlated ACT (ACT, n.d.) and SAT (College Board, 2014); eliminated Accuplacer writing test (College Board, 2014) and substituted Accuplacer writing sample (College Board, 2014); integrated use of SEM into placement scores; added Nelson Denny Reading Test (Brown, Fishco, & Hanna, 2016) as challenge to reading test
4-below-college 402	Noncredit course placement	Noncredit course placement	Noncredit course placement
3-below-college reading 641	3-below-college reading 706 (increase in 3-below with reduction in 4-below placement	2-3 below-college reading 872 (increase in course placement with compressed 1-semester sequence)	613 (216-student reduction)
2-below-college reading 725	678	0 (revised reading course eliminated separate level of instruction	0 (revised reading course eliminated separate level of instruction
2-3-below-college writing 1019	999	974 (25 student reduction)	372 (600-student reduction)
1-below-college 1141	1122	1130	868 (273-student reduction)

Note. Placement numbers have not been adjusted to reflect college-wide enrollment decline of 6%-12%



Evidence from Research

Study Methodology

Quasi-experimental design
Causal-comparative approach

Rationale

Summer 2014, starting point for data collection and analysis, RtI-based program had replaced MLI program, eliminating possibility of true experimental design.

Causal-comparative approaches allow the results to be generalized beyond the local setting. As a result,
the findings from this study may help faculty and staff in other colleges as they redesign their programs.

Research Questions

4 Research Questions: What is the association between instructional group – MLI program and RtI program – AND:

- Student course completion
- Student persistence
- Student retention
- Student credential completion

Subquestion for each:
What is the association by skill placement level?

Study Limitations

- Study timeframe - limited amount of data available for analysis of some RtI-based interventions.
- Data for credential completion for RtI students limited due to their total enrollment time in college

Sample Size and Timing of Data Collection

Total population of students enrolled in MLI program between Srping 2011 and Summer 2013 and in RtI program Fall 2013 through Spring 2015

Methods of Data Collection and Analysis

- IRB approval from institution
- Census sampling
- Chi-square analysis of independence
- SPSS software for calculations
- Level of significance - .05
- Chi-square calculation repeated once for each RQ and again for each skill level placement attached to each RQ

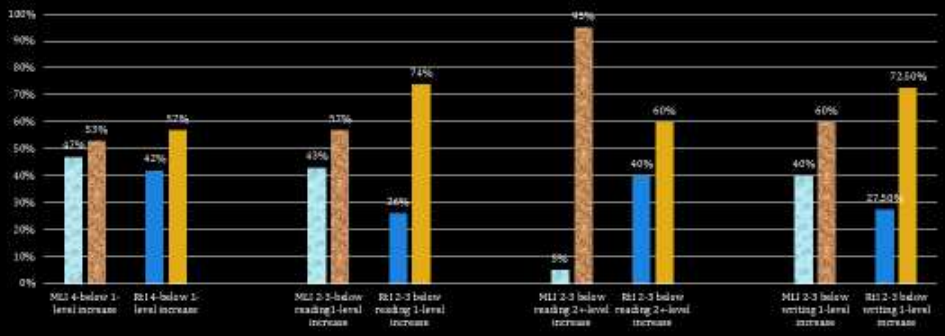
Summary of Data Analysis

Research Question 1 – Course completion by program

Program	Course completion - no	Course completion - yes
MLI program	4141 – 41%	5938 – 59%
RtI program	1283 – 35%	2369 – 65%

Note: $\chi 2 = 39.765$, $p=0$

Subquestion 1 – Course completion by program and skill placement level



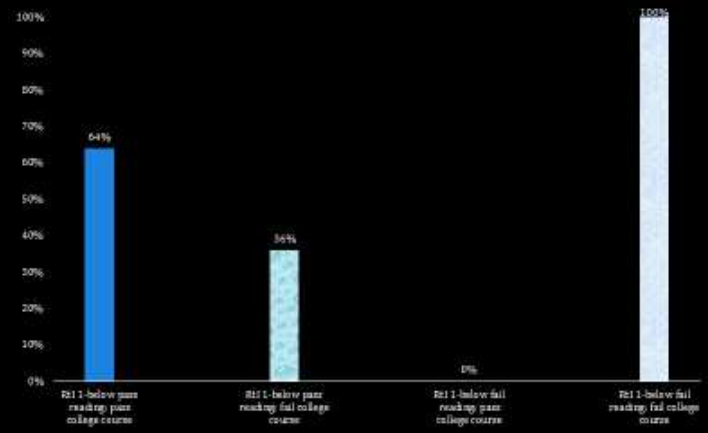
Summary of Data Analysis

Research Question 1 – Course completion by program – 1-below-college intervention

1-below-college intervention - Co-enrollment in college-level class with reading support class providing contextualized instruction

Option did not exist within MLI program – impossible to compare program data

Analyzed association between passing reading support and passing college-level class



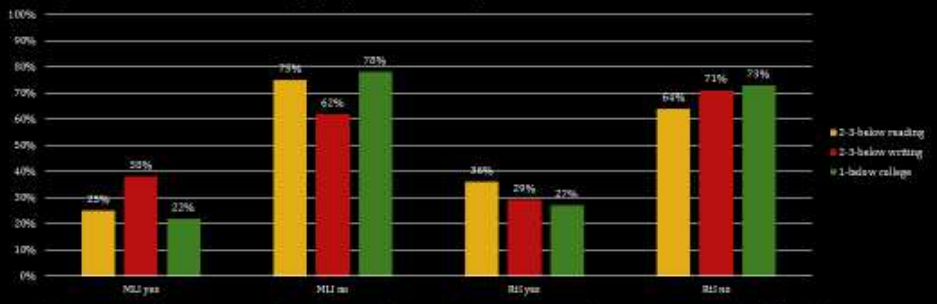
Summary of Data Analysis

Research Question 2 –Persistence by program

Program	Persisted - no	Persisted - yes
MLI program	1497 – 39%	2365 – 61%
RtI program	1516 – 34%	2887 – **66%**

Note: $\chi 2 = 16.661$, $p = 0$

Subquestion 2 – Persistence by program and skill placement level



*** RtI 2-3-below writing data skewed by scaling in Spring – data is measured Fall-Fall

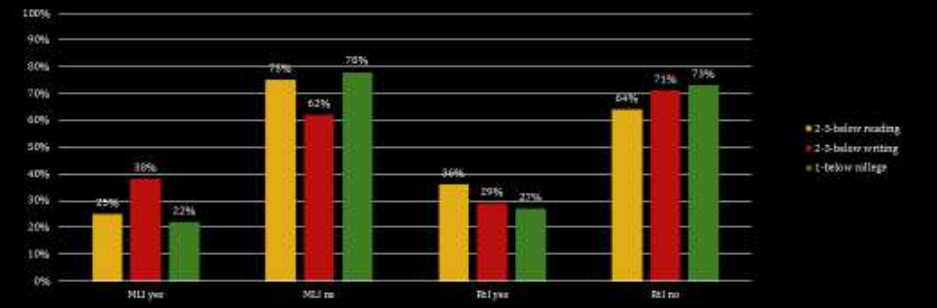
Summary of Data Analysis

Research Question 3 –Retention by program

Program	Retained - no	Retained - yes
MLI program	2902 – 75%	980 – 25%
RtI program	2995 – 68%	1408 – **32%**

Note: $\chi 2 = 51.03$, $p = 0$

Subquestion 3 – Retention by program and skill placement level



Note: 2-3-below-writing data was negatively skewed because of Spring 2014 full-scale implementation making accurate rention data analysis impossible for this group

Summary of Data Analysis

Research Question 4 –Credential completion by program

Program	Completed credential - no	Completed credential- yes
MLI program	2988 – 77%	874 – 23%
RtI program	3860 – 88%	643 – 12%

Note: χ^2=153.602, p=0

TIME IN COLLEGE AFFECTS CREDENTIAL COMPLETION RATES

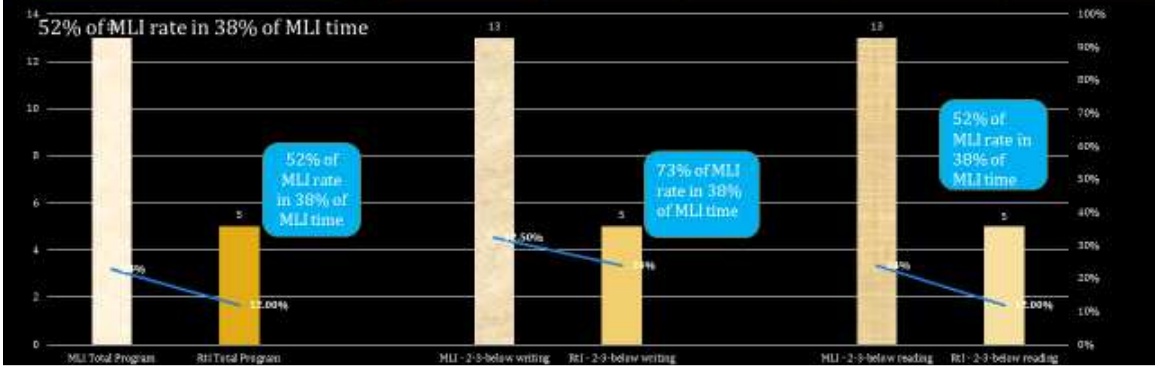
MLI-program students enrolled Spring 2011, majority enrolling in 2011-12. MLI-program students completed between 8 and 13 semesters, with 23% credential completion rate.

RtI-students enrolled in Fall 2013, with approximately half enrolling in Fall 2014. RtI-program students completed maximum of 5 semesters, with many completing only 2 semesters.

RtI-program students completed at a rate of 52% of MLI-program students in 38% of the total time in college.

Proportionally increased rates hold true EVEN for lowest-placing students in the RtI program

	MLI - no	MLI - yes	RtI - no	RtI - yes
Two-to-three-below college reading	76%	24%	88%	12%
Two-to-three-below college writing	67.5%	32.5%	76%	24%



Conclusions

1. The RtI-based program was intentionally designed and implemented with the goal of increasing overall college success for developmental reading/writing students, culminating in award of a credential.
2. The RtI-based program aligns with the guided pathways initiative and with the institutional commitment to increasing college success for all students.
3. The evidence from the literature related to the RtI-program structure and from the analysis of data related to program outcomes supports the fact that the RtI-based program structure can be linked to increases in course completion, persistence, and retention for all skill levels.
4. Projections of probable increases in credential completion, factoring in the time required for completion of degrees and certificates, support a recommendation to continue and expand the RtI-based program for developmental reading/writing.

Recommendations

FOCUS ON RETENTION!

- 25% to 32% retention for developmental reading/writing students still leaves us far short of our institutional completion goal.
- **R**eturning to college for the second year is a critical step in increasing credential completion.
- The gap in enrollment created by students not receiving an additional Pell award for Summer poses a special threat to low-income students who need to work.
- Leaving school for work-related reasons is a primary factor in failure to complete for lower-income students.
- **While technology, systems improvements, and additional employees will alleviate some of the problem, waiting for these steps to be implemented leaves at-risk students at risk.**
- A few simple, low-cost steps, could increase retention.

A FINAL THOUGHT

Our RtI-based program has shown the promise of increasing success for our developmental reading/writing students, including the group entering with the lowest placement scores.

We can help our students with the greatest needs achieve their goals, helping us to reach our goal of increased credential completion, by:

- continuing this program,
- supporting the program with an ongoing budget commitment
- supporting the program with ongoing data analysis
- implementing the recommended retention strategies.

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Evaluation Form

Presenter _____ Date _____

Increasing Developmental Education Students' Persistence, Retention, and Completion Group (Circle one) Academic Senate, Curriculum Committee, Chief Academic Officer's Team, Executive Leadership Team, Board of Trustees

Please circle the numbers which best reflect your evaluation of today's presentation with 1 being the lowest value and 5 being the highest value. Thank you.

	Low				High
My previous knowledge of this topic was…….	NA	1	2	3	4 5
The concepts were clearly explained.	NA	1	2	3	4 5
I had the opportunity to ask for clarification when needed.	NA	1	2	3	4 5
The content was relevant or adaptable to my practice.	NA	1	2	3	4 5
I would recommend this session.	NA	1	2	3	4 5

Please rate the pace of the session: (please circle your response)

Very slow Somewhat slow Just about right Somewhat fast Very fast

What was the most useful thing you learned today?

Suggestions for improving the future delivery of this session could include:

Questions for Small Group Discussions

1. What did you know about developmental education reform prior to this presentation?
2. Keeping in mind our local and institutional demographics, how does the RtI-based program meet the needs of our students?
3. From your viewpoint, does the RtI-based program structure help students move toward their college goals? If so, how? If not, how?
4. What strategies would you recommend to increase retention and credential completion by DRW students?
5. Would you support continuing and expanding the RtI-based program? Why or why not?

Appendix B: Permissions

Cheryl Garayta

From: [redacted]
Sent: Friday, June 10, 2016 10:27 AM
To: Cheryl Garayta
Subject: RE: permission

Cheryl,
Yes, you have permission to use the [redacted] workshop evaluation form as a document in your dissertations' project study.

[redacted]

When we support each other, we are supporting our students.

From: Cheryl Garayta
Sent: Thursday, June 09, 2016 11:02 AM
To: [redacted]
Subject: permission

Hi [redacted]

Could you please respond in writing to verify that I have [redacted] permission to use the workshop evaluation form as a document in my project study for my dissertation?

Thanks,

Cheryl