

THE IMPACT OF CONTEXTUALIZED CURRICULUM ON THE
ACADEMIC OUTCOMES OF DEVELOPMENTAL READING STUDENTS

by

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ABSTRACT

In recent years, there has been an expansion of research to identify effective and high-impact strategies and practices to improve developmental student success. Of these, the contextualization of teaching and learning (CTL) appears to hold promise. CTL enhances the learning of basic reading, writing, and/or mathematics skills by linking these skills to authentic content areas. It enjoys strong theoretical support; however, empirical studies on its effectiveness while promising are limited.

This dissertation study adds to the existing body of empirical research on CTL by analyzing the impact of contextualized curriculum on the academic outcomes of first-year developmental reading students at a Midwest community college. It utilized a mixed method approach: statistical analysis was applied to compare the attainment of outcomes by students in contextualized reading classes and those in non-contextualized sections. The qualitative portion used focus group interviews to explore the experiential impact of contextualized curriculum on student perceptions of course content, academic engagement, and motivation.

Findings indicate that the contextualized curricular intervention correlates with higher attainment of outcome measures by students throughout their first year of college. Students in CTL sections completed the required reading class at higher rates, attempted and earned more credit hours, attempted and completed more college-level courses, and showed higher next-term persistence than developmental reading peers in

non-CTL sections. However, the momentum toward success generated by the first-term CTL intervention was insufficient to improve persistence into the second year.

Qualitative analysis of factors that influenced the positive outcomes reveals the key role that the CTL intervention played in enhancing the social dimension of the classroom experience, the perceived relevance of reading skills and strategies, and the nurture and preservation of student motivation. This study affirms that contextualization is a viable curricular strategy in the reform of developmental education.

DEDICATION

To Lawson, my husband and partner for life.

You were the Lord's channel of grace, encouragement, and strength

and my loudest cheerleader

for this dissertation and the entire doctoral journey.

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CHAPTER ONE: INTRODUCTION

DEVELOPMENTAL EDUCATION IN THE COMMUNITY COLLEGE

Developmental education is recognized as one of the four core functions of the community college, the other three being transfer, terminal degrees, and continuing education (Nevarez & Wood, 2010). It consists of academic programming delivering “courses in reading, writing, or mathematics for college-level students lacking those skills necessary to perform college-level work at the level required by the institution” (Parsad & Lewis, 2003, p. 1). According to a National Center for Education Statistics 2003 study, 42% of freshman students entering two-year public community colleges take at least one developmental class (Parsad & Lewis, 2003). More than half spend at least a year in pre-college preparatory coursework.

The strong presence of developmental education programming on the campuses of community colleges flows directly from its mission of access. Community colleges provide an open door to postsecondary education so that “everyone can, through education, achieve their academic, career, and other life goals” (Myran, 2009a, p. 2). This egalitarian open-door policy represents “the fundamental mission of the community college—ensuring that millions of diverse and often underserved students attain a high-quality college education” (AACC, 2012a, p. v), hence the oft-heard epithet, “democracy’s colleges” (Bogg, 2010; Myran, 2009a, p. 1; Roueche & Roueche, 1999,

p. 1). A diverse range of students fall under the underserved label. They include low-income students, students of color, students who are first in their families to attend college (often referred as first-generation students), students with disabilities, non-traditional adult learners, and veterans (Myran, 2009a). Significant numbers of these are not yet ready for the academic rigors of college-level coursework, leading to the need for developmental education.

Developmental education also stems from the preparation gap between the completion of high school and entry-level competencies requisite for college-level coursework. ACT studies indicate that a quarter of ACT-tested high school seniors meet none of the four ACT benchmarks for college readiness in reading, writing, mathematics and science and another quarter meet only one benchmark (ACT, 2013). Conley notes that there is “near-universal agreement” among college faculty that students arrive in college “largely unprepared for the intellectual demands and expectations of postsecondary education” (2008, p. 7). The 2013 National Assessment of Educational Progress (NAEP) report, popularly known as the nation’s report card, indicates low levels of reading and mathematics proficiency among the nation’s twelfth-graders: only 26% are proficient in mathematics and 38% are proficient readers (NCES, 2014b). Many of these underprepared high school students are likely to be among the freshman students who matriculate at community colleges. Given prevalent assessment and placement policies and practices in most community colleges, they begin college in developmental classes.

In recent times, the need for developmental education also arises from the shifts in the nation's economy and the slow decline of the middle class. The economy has evolved over the last four decades into a college-based knowledge economy with employers increasingly asking for workers with postsecondary credentials. In 1973, 28% of the jobs in the U.S. required some postsecondary education. By 2008, this had more than doubled to 59%. It is estimated that by 2018, 63% of jobs will require some college (Carnevale, Smith, & Strohl, 2010). However, the nation has been under-producing workers with postsecondary credentials for three decades (Carnevale & Rose, 2011). The demand for college credentials has significantly outpaced supply. The Georgetown University Center on Education and Workforce estimates that by 2018, the nation will need 22 million new degree holders, associate's degree or higher, but supply will fall short of that target by at least 3 million. In addition, 4.7 million with postsecondary certificates will be needed. This undersupply of workers with qualified credentials hurts the economic outlook for individual citizens as well as the international standing of the United States as a world economic leader (AACC, 2012a). In response, President Obama (2009) has set a goal for America: "By 2020, this nation will once again have the highest proportion of college graduates in the world." To meet this first-in-the-world challenge, he has specifically called on community colleges to increase the number of program completions by 5 million over a 10-year period. To do so, community colleges will have to recruit potential students from the ranks of the underserved, including working adults without postsecondary credentials, displaced workers, low-income and first-generation students, and students of color (Applegate, 2014). As already noted, a

significant proportion of these students need preparation to handle the academic requirements of college-level occupational and transfer programs.

NATIONAL CONTEXT FOR THE STUDY

Proponents of developmental education (also known as remedial education, basic skills programs, college preparatory coursework) believe that it is necessary to provide support for students entering postsecondary education without appropriate academic skill levels (Boylan, 2002). Access without concomitant conditions for success is meaningless. However, developmental education has been controversial. One area of contention revolves around who should provide remediation. Critics from within the field of education and among policy makers and legislators have argued against providing developmental education at four-year institutions and for confining remediation to two-year community colleges; others have advocated that remediation belongs only in the public school systems where underpreparedness should be addressed (Merisotis & Phipps, 2000; Roueche & Roueche, 1999).

Another area of concern is the cost of remediation at the postsecondary level. Policy makers at state and federal levels have questioned remedial programming at public institutions. Teaching (or re-teaching) high school-level skills in college means that the public is paying twice for the same level of academic instruction. Lower rates of graduation and higher attrition levels among those who enter college without requisite academic competencies makes developmental education a particularly poor return on investment. One estimate is that during the 2007-08 academic year alone,

developmental education cost public institutions about \$3.6 million, an added strain on state budgets already struggling with revenue shortfalls. Between 2003 and 2008, the federal government allocated more than \$1.5 billion and state governments \$1.4 billion to provide tuition assistance to low-income students who did not persist into the second year of postsecondary education (Alliance for Excellent Education, 2011). Placement into developmental education is also costly to students and their families who have to pay tuition or use financial aid for courses that bear no graduation credit. It is estimated that remediation has cost families between \$708 and \$886 million in tuition and fees (Strong American Schools, 2008).

But perhaps the most contentious issue regarding developmental education has to do with outcomes or the lack thereof. Complete College America (CCA), a private national advocacy group, has pointed out that developmental education touted as the academic bridge between inadequate high school preparation and college-level course work has turned out to be a bridge to nowhere. Its report, *Remediation: Higher Education's Bridge to Nowhere*, states:

This broken remedial bridge is travelled by some 1.7 million beginning students each year, most of whom will not reach their destination—graduation. It is estimated that states and students spent more than \$3 billion on remedial courses last year with very little student success to show for it. (National Center for Education Statistics, 2010, and Alliance for Excellent Education, 2011, as cited in CCA, 2012, p. 2)

This broad claim is based on the following data: (1) more than 50% of students entering community colleges place into developmental education; (2) almost 25% of these students do not complete the developmental coursework that they are referred to;

(3) of those who do complete assigned remediation, less than 25% complete gateway courses for which they received remediation; and (4) of those who begin community college in remediation, less than 10% graduate in three years (or 150% of normal time to graduation). The apparent minimal success in attaining essential milestones led CCA (2012) to pronounce that “the very structure of remediation is engineered for failure” (p. 2). Bailey, Jeong, and Cho (2010), drawing upon *Achieving the Dream* datasets, arrived at largely the same conclusions. To change the metaphor, developmental students are placed into a pipeline that is intended to take them from academic foundational classes to college-level coursework and on to graduation. The data expose significant leaks in the pipeline. There are also stagnation pools of non-progress along the way. The volume of students at the end of the pipeline is woefully small. More than 90% do not reach the destination point of graduation after three years in the postsecondary pipeline.

Scrutiny of data regarding the effectiveness of developmental education programming has generated calls for reform. Echoes of this call for a redesign of how developmental education is structured and delivered have reverberated in decision-making halls at all levels, from White House summits to state governing boards (White House, 2011; AACC, 2012a; Applegate, 2014; Asera, 2011). Colleges, as individual institutions as well as state systems of colleges, have variously responded with alternative approaches to help underprepared students learn better, persist, and make progression towards graduation. Rutschow and Schneider (2011) have classified these burgeoning efforts to reform developmental education into four categories of promising

strategies: (1) interventions for helping students avoid placement into developmental education, (2) interventions for accelerating students through required developmental course sequences, (3) interventions that focus on improving teaching and learning in the classroom through the contextualization of curriculum, and (4) interventions to improve support for the student outside the classroom. Perin (2013) noted that these innovations are primarily structural. They range from offering workshops to prepare prospective students to take placement tests, co-enrolling upper-level developmental students directly in college-level coursework with additional instructional support, developing self-paced mathematics modules, to providing better tutoring and student development supports. Of these strategies, only the contextualization interventions address one essential area of improving developmental student outcomes—enhancing the teaching and learning processes in the classroom.

LOCAL CONTEXT FOR THE STUDY

This study focuses on the efforts of one community college to introduce contextualization interventions to improve the outcomes of upper-level developmental reading students. This college is a two-year public community college in the Midwest. For the purposes of this study, it will be referred to by the generic name, Middle West Community College (MWCC).

Middle West Community College was established in 1966. It is a comprehensive community college situated in a metropolitan area (as defined by the U.S. Census Bureau, n.d.) with a population of 234,000. A state public university is co-located in the

same metropolitan area. Two institutions of higher education in same city account for the relatively level high of educational attainment of its residents: 52% of the adults 25 years and older hold at least a bachelor's degree compared to the statewide average of 31%. At the same time, the city's poverty rate of 31% is significantly higher than the state average of 13.7% (U.S. Census Bureau, 2014). As a comprehensive community college, MWCC offers the following educational opportunities: transfer programs in the arts and sciences, fine arts, and engineering sciences; occupational programs in the health professions, computer science and information technologies, agriculture, business, and engineering technologies; developmental education; adult education; and continuing education. MWCC has active transfer agreements and related partnerships with the state university across town as well as with other public four-year institutions across the state.

MWCC's community college district extends beyond the metropolitan area where it is located, covering more than 2900 square miles. This largely rural district spans 12 counties, has over 60 communities, and is home to more than 20 public and private high schools. The college, on average, serves 10,000 to 11,000 for-credit students each fall semester. The credit student body is diverse in many ways: 57% are part-time students and 43% are full-time students; 51% are women and 49% are men; 64% are white Caucasian, 18% are black or African American, 6% are Hispanic, and 6% are Asian. The majority of the students are traditional-aged with 40% falling in the 17-20 age group and 22% in the 21-24 age group (MWCC environmental scanning data, 2013). Seventy percent (70%) of the students use financial aid to help defray the costs of a

college education at MWCC. Each year, MWCC disburses an average of \$13 million of financial aid. Due to the quality of its programs as well as its proximity to the large state university, MWCC also attracts a sizeable number of students, 24% of its student body, from outside its district. Many of these out-of-district students come from the state's largest metropolitan area. This results in an intricate mixture of urban and rural populations in the student body, a mixture that presents the college with a range of challenges. Some students bring with them the burdens of poverty, crime, and racial tensions that characterize large urban centers; others have had to bear the brunt of earlier low quality educational experiences and other social inequities; still others must commute long distances to access postsecondary educational opportunities.

Among first-time degree-seeking students who enter Middle West each fall semester, an average of 52% have at least one developmental coursework placement; 33% of them begin with coursework in developmental reading and writing. The 12-year average fall-to-fall persistence rate for first-time degree-seeking students is 57.4%. When this total is disaggregated into students who are college-ready in their reading and writing skills and those who are not, there is almost a 20-point difference in their persistence rates. College-ready students persist into the second year at a rate of 67%; those who start with developmental coursework placements return at a rate of 48%.

Middle West Community College has a history of seriously addressing the needs of developmental students. In 1999, a Developmental Education Taskforce was commissioned by the college president to redesign developmental education programming to achieve better success rates for underprepared students. The outcome

in 2000 was the establishment of the Tutoring and Advising Center (TAC) to provide intrusive student development support and just-in-time tutoring and learning assistance for developmental students. In the fall of 2003, MWCC was awarded a Strengthening Institutional Programs, Title III, Part A grant. The five-year project was titled “Student Success Matters: A Comprehensive Approach to Developmental Education.” There were three components to this project: (1) better assessment and student planning that included high school level placement testing of juniors; (2) restructuring developmental education using a co-requisite model for placing developmental writers into Composition I with additional support and the introduction of learning communities that integrated student support from learning specialists and student development advocates; and (3) improving staff development and systematic evaluation of developmental reading, writing, and mathematics programs (MWCC internal documents, 2011). Title III funds were used to strengthen and expand the work of the TAC.

In 2005, another taskforce was set up by the vice-president of academic services. The charge to this Coordinating Academic Support Taskforce was to review the structure and work of all learning assistance units on campus and make recommendations for enhancing academic support for students. This taskforce recommended the creation of a comprehensive Learning and Student Success Center (LSSC). Four previously independent learning support units—a learning lab, a peer tutoring center, a writing center staffed by composition faculty, and the TAC—were re-organized under one structure and co-located in one physical location. LSSC was established in 2006 as the

college's one-stop learning center. Its model of student support utilized a unique combination of learning assistance, tutoring, individualized instruction, academic advising, and student development services. Drawing upon both the academic and student services sides of the house, it facilitated interdepartmental partnerships to empower students to achieve their academic goals with a special focus on meeting the needs of academically under-prepared and academically at-risk students. LSSC quickly became the hub of student learning. By 2009-10, it was recording more than 40,000 student visits a year. These numbers were impressive, given that the college's fall first-time degree-seeking enrollment hovers between 1,400 to 1,500 new students (LSSC annual report, 2012).

In 2008, the Learning and Student Support Center was recognized by the Department of Education/Office of Vocational and Adult Education (OVAE) as one of eight exemplary community college programs for retention and student success under OVAE's Community College Can! initiative. LSSC mentored two other community colleges—one in Minnesota and the other in Michigan—that were interested in developing similar learning centers on their campuses. The mentoring relationship extended into the 2010 academic year.

In 2012, developmental education leaders worked with the college's Office of Institutional Research (OIR) to use cohort tracking data to analyze developmental student outcomes. The confluence of several factors precipitated this request for data. The college was preparing for its accreditation site visit by the Higher Learning Commission. External scholarly research on the overall lack of effectiveness of

developmental education propelled an honest examination of institutional data on persistence and completion. Up to this point, Middle West Community College used data that were largely limited to descriptive statistics on enrollment numbers, term-to-term and year-to-year persistence, and course pass rates. The data gave little information on long-term student persistence and progression. Participation as a pilot school in the Voluntary Framework of Accountability in 2011 gave the college a glimpse of the more useful information that comes from tracking entering student cohorts. The cohort tracking report followed three cohorts of first-time degree-seeking students who entered MWCC in the fall semesters of 2006, 2007, and 2008 over three years. The students were sub-divided into two groups: students who started at MWCC with developmental coursework placements and those who started college-ready. Developmental students were further sub-divided according to their initial reading, writing, and mathematics placements. College-ready students were sub-divided into transfer-bound students and those in career programs. Progression was measured in terms of the attainment of key milestones along the path to credential attainment. For developmental students, the report tracked the following milestones: completion of developmental coursework sequences, completion of first gateway college-level course for which the students received remediation, and accumulation of college-level credits. In 2013, cohort data from the fall semesters of 2009 and 2010 were added to the report to provide the college with a five-year average of progression.

The data and findings on the progression of developmental students at Middle West were stark. They were especially sobering given that the college prided itself on its

work with developmental students. LSSC had enjoyed external recognition for its work in student success and internal affirmation from students who repeatedly returned to utilize LSSC services. The data showed clearly that in spite of programming innovations and the investment of college resources, substantial numbers of developmental students were not making progress to degree. Students who placed into the lowest developmental levels of reading and writing made the least progress: only 33% completed their developmental reading requirements; 18% completed developmental writing requirements. The students who started with upper-level reading and writing placements did better: 67% completed reading requirements and 55% completed developmental writing. However, only 51% of these more able readers completed a reading-focused class in two years and 48% of the stronger developmental writers went on to complete Composition I. Students who began at MWCC with at least one developmental reading or writing class were achieving crucial milestones towards vertical transfer or credential attainment at low rates: only 39% earned 15 college-level credits in two years; 28% earned 30 college-level credits in two years. Progression among students who begin with developmental mathematics is even lower: only 22% complete a college-level mathematics course in three years. The data also indicated that attainment of key milestones took place primarily in the first year. Attainment tapered off precipitously in subsequent semesters. The Middle West Community College data mirrored the leaky pipeline at the national level.

STATEMENT OF THE PROBLEM

At Middle West Community College, developmental reading is popularly referred to as the CRS program. The CRS acronym stands for Critical Reading Skills, the course title for reading classes. The developmental reading program is housed in the Liberal Arts department. Two levels of developmental reading are offered: CRS 098 and CRS 099. The CRS program is a relatively cohesive program staffed by three full-time faculty members specifically hired to teach developmental reading, four other full-time faculty who also teach developmental writing, and a team of part-time faculty. The faculty are student-centered, consistently using sound teaching principles and creative pedagogy to motivate students to improve their reading skills. They work closely with the Learning and Student Success Center to provide outside of classroom support to students. Yet the internal cohort tracking data indicated that despite many years of innovative teaching and curriculum development, students who began with developmental reading placements were on the whole not making adequate progress to degree. Alongside the concern with progression was a concomitant concern with transfer of skill issues. The reading faculty recognized that the goal of developmental reading is not that students complete CRS classes with a C or better but that the students can competently apply reading skills learned in a CRS class to their college-level classes (Perin, 2013). The problem that arose was thus two-fold. How can the CRS program improve developmental reading students' persistence and progression towards credential completion as measured in terms of milestone attainment? What changes in curriculum

and instruction can increase the transfer of skill and student motivation to complete CRS and persist in college?

STATEMENT OF PURPOSE

Several full-time reading faculty at MWCC believed that the contextualization of the reading curriculum might provide an effective approach to the problem as stated above. Contextualization involved developing curriculum and related instructional approaches so that explicit connections are made with gateway courses (or first year introductory courses) that are required in transfer majors and/or career programs. Contextualization of curriculum would be a departure from the traditional approach taken by the CRS program. Developmental reading classes at MWCC are typically stand-alone classes teaching general college-level reading skills and critical thinking strategies. Aside from the fact that article-length readings chosen by reading faculty tend to be similar to what students may encounter in a freshman composition class, the reading skills taught are not specifically connected to an identified academic discipline or occupational program.

Building upon some initial trials, reading faculty in the fall semester of 2013 piloted five contextualized sections of CRS 099. CRS 099 is the upper of the two levels of developmental reading: students who place into CRS 099 typically have ACT reading sub-scores of 16 - 19. These contextualized sections each focused on a different major or career program: health professions, criminal justice, business, automotive technology, and diesel-powered technology. The purpose of this study is to evaluate the

outcomes of students who participated in these contextualized reading sections in comparison with students who took the traditional stand-alone CRS classes. It was anticipated that the findings of the study will help determine whether contextualization is an effective strategy for MWCC to jumpstart the progression of students who begin college with inadequate reading skills and, if so, whether to expand the use of contextualization as an instructional approach.

DEFINITION OF TERMS

Developmental education refers to college academic programming that offers courses in reading, writing, and mathematics for students in college who do not have the skills to perform successfully in college-level courses. Developmental education is also referred to in the literature as remedial education, basic skills programs, learning assistance, or college preparatory courses (Arendale, 2005; Merisotis & Phipps, 2000).

Milestones are measures of progression referring to intermediate points of achievement in tracking the progress of community college students from their starting point to credential (associate's degree or certificate) attainment. They are used as common indicators to benchmark performance and provide relevant information to measure the effectiveness of interventions (Ewell, 2006; Leinbach & Jenkins, 2008).

Stand-alone classes refers to developmental course curriculum that is developed and taught in isolation from the academic majors or occupational programs that students are interested in pursuing at college. The curriculum focuses specific skills and sub-skills to prepare students for the rigors of college-level coursework. But the

literacies (language arts and computational) are not developed in the context of how these skills will be used (Grubb, 2001).

Contextualization in developmental education instruction focuses on the teaching of basic reading, writing, and/or math skills against the backdrop of a specific discipline in which the basic skills have to be applied. The skills taught are the same as those in traditional stand-alone developmental classes. The difference is that they are taught and practiced in the context of a current or future career program or transfer major (Perin, 2011b).

There are two forms in which contextualization is implemented. *Contextualized basic skills instruction* is the form where students learn academic skills in the context of the specific discipline or subject matter to which the skills will be applied either currently or in the near future. The focus is on teaching of the skills and not the specific discipline content. *Integrated basic skills instruction* is the form where basic skills instruction is integrated into the teaching of the specific discipline content. The focus is on content acquisition. Basic skills instruction becomes the tool to facilitate the learning of the content (Perin, 2011b). At MWCC, the contextualized reading pilots were an implementation of *contextualized basic skills instruction*.

Transfer of skills refers to students' ability to take competencies learned in one context and apply it to another (Gillespie, 2002).

RESEARCH QUESTIONS

This study focused on a population that consists of students who were in college for the first time at MWCC and taking developmental reading, CRS 099, in their first fall semester. It sought answers to the five research questions below. The questions were designed to compare the outcomes of the two groups of developmental reading students within the population—those who took developmental reading in a contextualized curriculum CRS 099 section (hereafter referred to as *contextualized CRS 099 sub-cohort*) and those who took developmental reading in a traditional stand-alone CRS 099 section (*non-contextualized CRS 099 sub-cohort*). The outcomes were couched in terms of the attainment of essential milestones in the progression towards degree attainment as well as in terms of student perception of the transfer of skills and the motivation to learn.

1. How will the rate at which contextualized CRS 099 students pass the required CRS 099 class with a grade of C or better compare with non-contextualized CRS 099 students?
2. How will the number of credits attempted and earned in the first year (fall and spring semesters) by contextualized CRS 099 students compare with non-contextualized CRS 099 students?
3. How will the number of college-level classes attempted and passed (with grade D or better) in the first year by contextualized CRS 099 students compare with non-contextualized CRS 099 students?

4. How will the next term persistence (fall-to-spring) and year-to-year persistence (fall-to-fall) rates of contextualized CRS 099 students compare with that of non-contextualized CRS 099 students?
5. What is the impact of contextualized curriculum on student perceptions of the transfer of skills learned and their motivation to learn?

RESEARCH METHODS

This study was a population study insofar as it included all the students who placed into and took CRS 099 for the first time in fall semester, 2013. It used a mixed methods approach. Data from Middle West Community College's student information system were extracted to answer questions 1 to 4. Quantitative methodology was used to analyze the data. There were two main reasons for this choice. One, the current demand for "rigorous accountability with clearly defined measures" (AACC, 2011) among community colleges requires that effectiveness of interventions to enhance student progress towards completion be demonstrated through the use of numerical data and statistical methods of analysis. Also, among community colleges and especially within the field of developmental education, the frameworks developed to track progress and benchmark performance are based on numerical or "hard" data (AACC, 2011; Ewell, 2006; Leinbach & Jenkins, 2008). Two, this study was intended to be a program evaluation. Hard data measuring attainment of specific outcomes and the statistical analysis of the significance of the data are important for long term program decisions especially with regard to the scaling of the contextualization intervention in

developmental reading instruction. Both faculty and administration wanted the quantitative data and analysis to evaluate the pilots.

However, it was recognized that immensely rich data can be derived from talking directly with students. Student perceptions of how the contextualization intervention impacted their skills, ability to perform in college-level coursework, motivation to learn and confidence as college students yield an informative narrative that gives a human dimension to the numbers. Hence, the study was designed to include focus group interviews with students who took reading in a contextualized classroom. The qualitative data collected was used to answer question 5.

DELIMITATIONS

This study was limited to one community college. It used a comparative design approach to compare the two sub-groups within the population of students who placed into and took CRS 099 for the first time in the fall semester 2013 at MWCC. The primary reason for limiting the study to one community college was that the study was intended to contribute to a reading program evaluation at the college. Its results were to be used by the reading program and its home academic department to make decisions about the future direction of curriculum development and instructional approaches.

The researcher had also chosen to limit the study primarily to the student attainment of outcomes defined in terms of the achievement of first-year essential milestones for developmental students. The study did not focus on specific skills and strategies taught at the developmental level and the impact of these specific skills and

strategies on the learning that should take place in related college-level first-year courses. This choice was dictated by the fact that milestone achievement data and analysis was needed for the program evaluation in question.

The researcher recognizes that research on the relationship between the teaching of specific skills in a contextualized environment and their application in the college-level coursework must not be overlooked. The findings of the current study are a necessary first step. If the data and analyses indicate that contextualization is promising in the context of MWCC and that the potential for scaling its use should be seriously explored, then delineating the relationship between strategies taught and transfer-of-skill applications will be a recommended subsequent step for research.

LIMITATIONS

This study is circumscribed by several limitations. The first has to do with identifying the population for the study. This may appear ostensibly clear cut. Students who placed into CRS 099 for fall semester 2013 constituted the student population in the study. Middle West Community College has a detailed mandatory assessment and placement policy that is strictly enforced. All first-time-in-college students who place into CRS 099 will take CRS 099 in their first semester. However, it is important to acknowledge the limitations of the assessment process at MWCC. The college uses the COMPASS reading score of 83 to distinguish students who require remediation in reading from those who are college-ready. Recent research studies have questioned the predictive validity and accuracy of the COMPASS test, citing the possibility of over- and

under-placement of students who place near the cut scores demarcating the division between developmental placement and college-ready placement (Scott-Clayton, 2012). Thus it is possible that some students in the CRS 099 population in the study may not have needed remediation. This may have had some effect on the data on achievement of progress outcomes.

The second limitation arises from the fact that the selection of specific transfer disciplines and career programs as the backdrop for contextualization was based on an informal combination of the following factors: awareness of need, faculty interest, and prior initiatives. Anecdotal evidence from the classroom suggested that students in technical programs often struggled in reading classes. Cohort tracking data indicated the need for a different approach. A few full-time faculty expressed interest in contextualization due to prior professional experiences and/or current professional interests. Three separate initiatives at MWCC prior to fall semester 2013 provided the opportunity for faculty to sit in on college-level classes that related to health professions, criminal justice, business, diesel-powered technology and automotive technology, thus laying the groundwork for contextualization. The conjunction of these several factors led to the launch of the five pilot sections of contextualized curriculum in fall semester 2013. In other words, the pilot initiative while not totally a result of happenstance was not intentionally designed as the subject of an empirical study.

Three, the collection of qualitative data through focus group interviews was dependent on student responses to invitations. Lack of accuracy of student contact information in the student information system, low student responsiveness to email and

phone invitations, and priorities competing for a student's time outside of class all limited the number of students who participated in a focus group. Four, time constraints limited this study to one cohort of CRS 099 students: CRS 099 students who began in fall semester 2013 were tracked for one calendar year to the beginning of fall semester 2014. Limits on the size of the study population and the comparison groups within the population possibly reduce the generalizability of findings.

SUMMARY

Developmental education is at a crossroads. Data show that students who begin college in developmental education are not making progress to credential completion. Less than 10% earn a credential within three years of first starting college. Proponents of programming to serve students who enter college without requisite academic skills to handle the rigors of college-level coursework recognize that reform in the structure of remedial programming and the delivery of remedial instruction is imperative. Maintaining the status quo not only renders developmental education programming ineffective and irrelevant but also hurts the very students these programs purport to serve. Currently most efforts to transform developmental education focus on innovations that change the structure of developmental education programming. Contextualized learning models constitute one set of reform efforts that focus on the teaching and learning in the classroom (Rutschow & Schneider, 2011). The few research studies on these models indicate that contextualization has promise as an effective tool for improving learning and focusing student motivation (Perin, 2011a). In the drive to

improve outcomes, it is important that student learning remains at the center.

Improving numbers without ensuring learning would be an empty achievement.

Enhancing teaching practice through the use of contextualization helps to safeguard the pivotal role of student learning in the push towards completion.

The reading program at Middle West Community College has taken up the challenge to find better ways to empower developmental student learning and persistence. A confluence of factors including institutional data, faculty interest, local initiatives, and scholarly research findings led a small team of faculty to pilot contextualized sections of developmental reading in the fall semester 2013 with the support of MWCC's administration. This study evaluated the MWCC contextualization initiative. If the data and analyses indicated that the promise found in external studies was replicated at MWCC, then the reading program and academic department leaders have the basis for expanding this innovation to change the trajectory of students who start at MWCC with below college-level reading skills. The researcher anticipates that this study will add to the existing body of scholarship and research on the effectiveness of the contextualization of curriculum as a student success intervention in developmental education.

CHAPTER TWO: LITERATURE REVIEW

INTRODUCTION

The 1,132 community colleges in the United States serve a substantial portion of the nation's undergraduate students. Between 2000 and 2010, the number of undergraduate students enrolled in these public two-year institutions increased by 27%. In 2010, at the height of the Great Depression, more than 7.7 million undergraduates were enrolled in community colleges. While this number decreased in fall semester 2012 to 7.2 million, it still represented 40% of the nation's total undergraduate enrollment (NCES, 2014b). An overview of student demographics and other characteristics indicates that community college students as a group are more diverse, are older, are more likely to be enrolled part time, and have heavier work responsibilities than their undergraduate counterparts in four-year public institutions: 51% of community college undergraduate students are white, 19% are Hispanic, and 14% are black; the median age is 24 with 57% of them falling into the 22-39 age group; and 60% are enrolled part-time. The majority of the students work: 62% of full time students and 73% of part time students are employed (AACCC, 2014; NCES, 2014b).¹ Only

¹ In fall semester 2012, the undergraduate enrollment in four-year institutions totaled 10.2 million students, of which 77% of these students were enrolled full-time. Among the full-time undergraduates in public four-year institutions, 88% were under the age of 25; only 9% were aged 25–34. Race/ethnicity distribution for all undergraduates in four-year institutions is as follows: 63% white, 12% black, and 14% Hispanic (NCES, 2014b).

the male-female ratio among community college students can be considered typical. The ratio of 44% male students to 56% female students reflects the national trend in undergraduate enrollment.

The steady overall increase in community college enrollments may be attributed to the fact that providing equitable access to postsecondary education has been a hallmark of the community college movement. Community colleges have intentionally opened doors for students who might otherwise not have had a chance to enter higher education. Of its undergraduate students, 36% are the first in their families to attend college; 58% qualify for some form of financial aid. Students of color are overrepresented in the community college ranks when compared to the general national population: 14% of community college students are black in comparison to 12.6% in the general population; 19% are Hispanic in comparison to 16%. Fifty-six percent (56%) of all Hispanic and 48% of black undergraduates attend community college (AACC, 2014; U.S. Census, 2010).

Among these students are those who have not received a good academic foundation as they journeyed through the K-12 educational system. A good number arrive with jaded attitudes towards learning and schooling, having little appreciation for the effort it takes to learn and succeed at the college level. Many work full-time or part-time and have family responsibilities, limiting the time they have for academic tasks. Developmental education programs have been and continue to be on the forefront of facilitating access to postsecondary education for students who have been underserved in higher education. But there are formidable challenges in serving the academically

underprepared. “Developmental education in community colleges is one of the most difficult challenges our entire educational system has to face” (Grubb & Cox, 2005, p. 102) and its role in fulfilling the equity agenda is “one of the least well understood” (Bailey & Morest, 2006, p. 25).

This review of literature is a survey of scholarly work on developmental education with a focus on improving the effectiveness of remedial programs. It will include an exploration of the work done in the contextualization of teaching and learning, an instructional strategy that promises to enhance developmental student outcomes and progression to completion.

WHAT IS DEVELOPMENTAL EDUCATION?

Developmental education programs are found in almost all public open-access community colleges. In fall 2000, 98% of public two-year institutions reported offering one or more remedial courses in reading, writing, and mathematics (NCES, 2003). Providing developmental education has become one of five core functions of the community college, the other functions being transfer programs, vocational and technical education, terminal degrees, and continuing education (Cohen & Brawer, 2008; Nevarez and Wood, 2010). Developmental education programs are intended to help students who are academically underprepared for college. The National Center for Educational Statistics defines developmental courses as “courses for students lacking skills necessary to perform college-level work at the degree of rigor required by the institution” (Parsad & Lewis, 2003). Stanford Goto describes remedial education as “a

class or activity intended to meet the needs of students who initially do not have the skills, experience or orientation necessary to perform at a level that the institution or instructor recognizes as ‘regular’ for those students” (as cited in Grubb and Associates, 1999, p. 174). The goals of developmental education are broadly three-fold: to equip students with the academic skills to succeed in their first college-level courses, to provide foundations for success in later courses, and to enable faculty to maintain college-level standards and rigor in their classrooms (Hodara, Jaggars, & Karp, 2012).

Developmental education is often referred to as remedial education. It is also not uncommon to see developmental programs called academic or college preparatory, learning assistance, or basic skills programs (Arendale, 2005; Merisotis & Phipps, 2000). Arendale (2005) presents a case for the philosophical differences between the terms and their effect on practice. The epithet “remedial” projects a deficit model of understanding student readiness for college. This contrasts with the more progressive term “developmental” that recognizes that each college student is developmental and has the potential of moving on to the next stage of development. Language impacts instructional perspective and practice in important ways (Roueche & Roueche, 1999). However, this study will follow the general practice in scholarly discussions of using the terms *developmental education* and *remedial education* interchangeably. The U.S. Department of Education uses the term *remedial education* in its publications.

It should be noted that developmental education programs are not confined to community colleges. They are also found in four-year institutions and other types of

higher education entities, including for-profit institutions, although to a lesser extent.

This study, however, confines itself to developmental education in community colleges.

HISTORY: A LONG TRADITION

Developmental education has enjoyed a long tradition in U.S. postsecondary education. Recent scrutiny of the significant need for remediation among college freshman students and on the low rates of persistence and completion among students who begin college in academic preparatory classes may convey the impression that the need to offer below college-level course work in colleges and universities is a relatively new phenomenon. The truth is that developmental coursework has been in existence since Harvard College had to hire tutors for students who were underprepared for college-level Greek and Latin as far back as the 17th century. In 1849, the University of Wisconsin created the Department of Preparatory Studies to meet the academic needs of less prepared students as more students were attracted to enter into higher education. This trend of helping underprepared students continued into the 20th century with the influx of World War II veterans into institutions of higher education with the G.I. Bill. The Civil Rights Act of 1964 and the Higher Education Act of 1965 led to not only to an expansion in the number of open admissions institutions but also to an increase in government sources of financial aid. Thousands of students who were previously excluded from seeking postsecondary education entered colleges, thereby effecting an increase in the numbers of underprepared students (Arendale, 2005; Holschuh & Paulson, 2013; Merisotis & Phipps, 2000). Thus, Merisotis and Phipps (2000) declared:

“Those halcyon days when all students who enrolled in college were adequately prepared, all courses offered at higher education institutions were ‘college level,’ and students smoothly made the transition from high school and college simply never existed” (p. 69).

ENROLLMENTS IN DEVELOPMENTAL EDUCATION

In 1999, Roueche and Roueche estimated that on average, almost half of all first-time community college students are underprepared for the academic rigors of college-level programs, placing into at least one area of remedial coursework. This is borne out by data on national trends from the National Center for Education Statistics (NCES). In 2003, NCES published a study on remedial course offerings and student enrollments in remediation comparing data from the 2000 Postsecondary Education Quick Information System (PEQIS) survey with responses on the 1995 PEQIS survey (Parsad & Lewis, 2003). Several findings are pertinent to the present study. One, the percentages of first-time first-year students taking developmental course work remained relatively stable: 28% of all freshman students entering degree-granting institutions took at least one remedial course in reading, writing or mathematics in 1995 and 2000. The percentage was significantly higher in two-year public institutions: 40% in 1995 and 42% in 2000 compared to 21% and 20% at four-year public institutions. Two, in all institution types, remedial enrollments in mathematics at 22% were the highest while enrollments in reading at 11-12% were the lowest. Again, the percentages were much higher in two-year public institutions with 32% (1995) and 35% (2000) enrolling in remedial

mathematics and 19% (1995) and 20% (2000) in remedial reading. Three, it should be noted that while the percentages have remained somewhat stable, the number of freshman undergraduates increased. In 1995, 936,000 students entered public two-year institutions; in 2000, there were 992,000, giving an increase of 56,000 students. Four, the two surveys also indicated that the time a student spent in remediation at public two-year colleges has increased. In 1995, 45% of the students spent less than a year in developmental coursework and 44% spent about a year. By 2000, these percentages had shifted dramatically: 37% spend less than a year in remediation; 53% spend at least a year (Parsad & Lewis, 2003).

It is interesting to compare the data from this 2003 NCES study with descriptive data from another NCES report published in 2013. The 2013 NCES report used data from the National Postsecondary Student Aid Study (NPSAS) to describe the levels of developmental course-taking patterns over three time periods: 1999-2000, 2003-04, and 2007-08. This data set is based on self-reports of first-year college students about their enrollments in remedial courses. Sparks and Malkus, authors of this 2013 report, acknowledge that the findings may not adequately represent the need for remediation among first-year undergraduates as research has established gaps between students who need remediation, those who actually enroll in remedial courses, and the ones who complete remediation (Bailey et al., 2010). Across all institutions of higher education, the percentage of students who reported participation in remediation was much lower in 2003-04 and 2007-08 when compared to 1999-2000—19% and 20%, respectively, compared with 26%. This drop in remedial enrollments was also reflected in the

percentages reported among first-year students in two-year public institutions—23% (2003-04) and 24% (2007-08) to 30% (1999-2000). These numbers are measurably lower than those reported on the PEQIS surveys. However, they highlight several important aspects of remediation enrollments. One, students in two-year public institutions are more likely to be enrolled in remedial coursework than four-year public institutions. Two, students who are pursuing associate degree programs have the highest level of remediation enrollments when compared to students who are in bachelor degree programs or even students in certificate programs. Three, students whose parents had a high school diploma or only some postsecondary reported higher levels of remedial enrollments than students whose parents had earned a bachelor's degree or higher.

The research conducted by Merisotis and Phipps (2000) led them to believe that the “percentage of students requiring remedial courses is higher” (p. 70) than what is reported on NCES surveys. To preserve the façade of excellence, many institutions either underreport the percentages of admitted students who need remediation or state that students needing remediation do so at other institutions. Also, Perin (2006) believed that the actual number who enroll in remediation may not accurately reflect how many are underprepared for college work due to wide variations in mandatory placement policies. Her qualitative studies show that

where mandates existed, they were often softened within the colleges—for example, depending on the institution, not all skills were assessed; not all students were assessed; subjective rather than objective placement measures were used; instructors could override the assessment or placement requirements; remedial prerequisites could be overridden, not enforced, or removed altogether . . . students could pass remedial courses with less-

demanding instructors; . . . and low-skilled students were steered away from demanding college courses. (p. 158)

JUSTIFICATION FOR DEVELOPMENTAL EDUCATION

The factors that lie behind the need for developmental education, especially at community colleges, are philosophical as well as pragmatic. Philosophically, developmental education arises out of the mission of access and equity that lies at the heart of the community college movement. Often called “democracy’s colleges” (Bogg, 2010; Myran, 2009a; Roueche & Roueche, 1999), community colleges have used democratic and egalitarian principles to argue for open-door policies so that “everyone can, through education, achieve their academic, career, and other life goals” (Myran, 1999a, p. 2). This philosophy received help from two events in history. In 1944, President Franklin Roosevelt signed the Servicemen’s Readjustment Act, popularly known as the GI Bill of Rights, into law. It provided veterans of the Second World War with funds for housing, unemployment insurance, and college education (Our Documents, n.d.). Three years later, in 1947, President Truman established the landmark Commission on Higher Education for American Democracy. The recommendations of this commission fundamentally changed the direction of higher education in America. Shifting from the then prevailing understanding that postsecondary education is intended to produce an intellectual elite, the Truman Commission called for institutions of higher education in general, and community colleges in particular, to become the instruments “by which every citizen, youth, and adult, is enabled and encouraged” to pursue higher education (as cited in Bogg, 2010, p.

2). This call for the democratization of higher education effectively swung wide open the door to educational opportunities, leading to the rapid growth in the number of two-year colleges. In the 1960s, community colleges were established all over the country and students from sectors of the population hitherto underserved by colleges and universities walked on to the campuses of two-year colleges—low-income students, minority students, students who were the first in their families to attend college, students whose first language is not English, students with disabilities, non-traditional adult students, and veterans (Myran, 2009b). This mission of serving the underserved has continued. Today, community colleges enroll nearly half of all undergraduate students of color, more than 40% of undergraduate students who live in poverty, and 70% of undergraduate students who are enrolled part time (Mullins, 2012).

Students who might otherwise not go to college also bear a higher proportion of risk factors, factors that hinder success and completion, when compared to their peers in other institutions of higher education. These risk factors include delayed enrollment, not having a high school diploma, part-time enrollment, working more than 20 hours a week, being single parents, and having dependents (Mullins, 2012; NCES, 2011b). A significant proportion of these students are low-income and first generation. According to the College Board (2012), there is a clear positive correlation between family income or parental educational attainment and the level of academic achievement as represented by high school grade point averages. ACT research corroborates this: low-income, first-generation students earn lower composite scores than test-takers from middle- and high-income families. Analysis suggests that within this group, level of

parental education has a greater impact on the student test-taking achievement than parental income group (Buddin, 2014). Developmental education programming to prepare the underprepared for academic success has become an essential core function of community colleges (Myran, 2009a).

While community colleges have played a significant role in opening the doors of higher education to low-income and non-traditional students, Bailey and Morest (2006) pointed out that the nation is “still a long way from universal or equal access to higher education” (p. 27). The majority of community college students come from the middle two quartiles of the socioeconomic status (SES) distribution. Bailey and Morest found that more than 50% of students from families in the lowest SES quartile do not attend any college while 97% of students from the highest SES quartile do. The work of reducing this disparity in college attendance among income groups is not yet complete. According to the National Center for Education Statistics, there has been a steady increase of low-income students attending college over the past decade. However, the rate fell to 50.9% in 2012 after a high of 58.7% in 2007. The Pew Research Center (DeSilver, 2014) suggested that the gains of the preceding decade were eroded by the impact of the recent Great Depression.

The second factor behind the need for developmental education has to do with the apparent failure of high schools to prepare its students for college (Strong American School, 2008). According to David Conley, there are four facets to being college ready: (1) key cognitive skills that enable students to reason, analyze, interpret and problem solve; (2) key concepts and theories related to specific disciplines as well as essential

academic skills—reading, writing, and mathematics; (3) requisite academic and self-management behaviors such as strategic study skills, time management, persistence, metacognitive awareness about one’s performance and use of learning resources; and, (4) appropriate contextual knowledge to navigate the policies, processes, and culture of college (Conley, 2008). Conley argued that college readiness is not the same as high school completion. There are manifold significant differences between how learning takes place in a high school setting and in college. The identified four areas of readiness summarize the spectrum of learning strategies, content knowledge, coping skills, and college-going knowledge that must be applied to attain success in college. His research showed that among college faculty there is a “near-universal agreement that students arrive (on college campuses) largely unprepared for the intellectual demands and expectations of postsecondary education” (p. 7). Cohen and Brawer (2008) quoted different studies echoing the same sentiment (p. 297). Boylan and Saxon (2012) concurred.

Recent reports underscore the lack of readiness of high school seniors to succeed in college. The ACT test measures the knowledge and academic skills of college-bound seniors to ascertain whether they have what it takes to succeed in credit-bearing first-year college courses without the need for remediation. In 2013, this assessment of college readiness was taken by 54% of high school graduates while they were still in high school, or 1.8 million students. This represented an increase of 22% in the number of ACT-tested high school graduates between 2009 and 2013, with substantial numerical increases in the number of Hispanic test-takers. The ACT test uses four benchmarks of

college readiness in English, reading, mathematics, and science. ACT reported that, in 2013, only 26% of ACT-tested high school graduates met all four benchmarks of readiness; 31% met no benchmarks at all. ACT research also showed that as the number of benchmarks attained by a student decreases, the greater the likelihood that the student will matriculate at a community college if he or she chooses to go to college. Of the 2012 ACT-tested high school seniors who enrolled in two-year schools, 40% met no benchmarks at all (ACT, 2013). The ACT 2013 report affirmed Cohen and Brawer's (2008) earlier note that "of all the postsecondary educational structures in the America, the public community colleges [have borne] the brunt of the poor preparation of students in the twentieth century" (p. 289).

This lack of academic preparedness is borne out by the National Assessment of Educational Progress (NAEP) 2013 report (NCES, 2014b). The NAEP, also known as the nation's report card, is a project authorized by the U.S. Congress to provide a "nationally representative, continuing assessment of what America's students know and can do in schools" (NCES, 2004). This 2013 assessment of student achievement reported that in the four-year period between 2009 and 2013, there was no change in the level of proficiency in mathematics and reading among the nation's twelfth-graders. Twenty-six percent (26%) of students scored at or above the "proficient" level in mathematics; 38% were deemed proficient in reading. The racial achievement gap remained wide: there was an almost 30% point difference between white and black students in reading proficiency. The report also echoed the trend in other studies indicating a clear positive correlation between parental educational attainment and student achievement of

proficiency. As already mentioned, a high proportion of these students attend community college. For most of these students, developmental education embodies the American belief that everyone deserves a second chance. Everyone who did not receive an adequate secondary education, regardless of reason, gets the opportunity to try again at the community college. Developmental education is essential to help make sure that the opportunity is not wasted.

The third factor lies in the pragmatic needs of the economy. According to Carnevale and Rose (2011), the United States has been under-producing workers with postsecondary credentials for more than 30 years. The demand for college-educated workers has outpaced the supply. Two problems—one of efficiency and the other of equity—have ensued. Without the proper talent and expertise, the nation loses out in terms of productivity. This, in turn, has driven up the cost of postsecondary talent and skills and has exacerbated the income gap between those with a high school diploma or less and those with a postsecondary credential. This disparity between college-educated incomes and non-college educated incomes will only grow, increasing income inequality in the country while accelerating the decline of the economically essential broad middle class. The recommended solution is to add another 20 million workers with postsecondary credentials to the national workforce by 2025. Of these, Carnevale and Rose estimated that 1 million should be associate degree holders and 4 million should fall into the some-college no-degree category. This call to add workers with postsecondary training dovetailed with the Obama administration's challenge to restore the United States as the world's leader in degree attainment among its workers.

Community colleges are seen as the linchpin in the challenge to increase the number of middle-skilled graduates (Duncan, 2010). The American Association of Community Colleges has responded to this with a call to action to increase credential attainment rates by 50% among community college students by 2020 (AACC, 2010). A significant proportion of these additional credential holders will come through community college career and technical programs that increase the skill levels of incumbent workers, re-train displaced workers, and impart skills to the chronically unemployed and underemployed. Developmental education programming is needed to support these non-traditional students so that their entry (or re-entry) back into higher education will successfully lead to desired credentials for the job marketplace (Bragg, 2012). Boylan and Saxon (2012) described developmental education as “the first line of defense” (p. 5) to make sure that non-traditional students can reap the benefits of the open door.

STRUCTURE OF DEVELOPMENTAL EDUCATION PROGRAMS

In most community colleges, newly admitted students are asked to take a battery of placement tests in reading, writing, and math. Cut scores, set either by the institution or the state, are used to determine whether students are college-ready in each of these areas. A student whose scores fall below these cut scores will be referred to developmental coursework. There are typically two to three levels of developmental coursework for each area of academic skill (Bailey et al., 2010; Perin, 2006). A student whose score is just below the cut score in, say, reading will be referred to take one remedial reading course. A student with poor reading skills may face two semesters or

more of developmental reading coursework before he or she is deemed ready for degree credit-bearing coursework. Students weak in all three academic skill areas may be referred to an entire academic year of nothing but remedial coursework.

The teaching and learning of the basic academic skills and strategies requisite for managing the rigorous demands of college-level coursework takes place in the classroom. The course format adopted impacts the level of learning that occurs.

(Instructional practice and learning outcomes will be reviewed later in this chapter.)

Perin and Charron (2006) used interview data from the National Field Study (NFS) project to identify three primary instructional course formats in developmental programs: “standard remedial courses, modified remedial courses, and special programs” (p. 172).² Each format is characterized by certain features.

Standard Courses

Standard remedial courses teach basic academic skills predominantly using an instructional approach that Norton Grubb has termed “remedial pedagogy” (Grubb et al., 2011, p. 3). This approach focuses on the drill and practice of sub-skills to improve reading, writing, or mathematical skills such as grammar rules, subject-word agreement, sentence-level writing, paragraph construction, vocabulary, word-identification skills,

² The Community College Research Center launched the NFS project, a multitopic study of current issues related to community colleges, in 2002. Over the course of two years, an extensive field study was conducted at 15 community colleges in six diverse states: California, Washington, Texas, Illinois, Florida and New York (Bailey & Morest, 2006). The states were chosen for large community enrollments and a varied range of institutional and state policies. The colleges were selected to represent a range of geographical locations, size in terms of enrollment, and racial/ethnic diversity to insure representativeness. The study adopted a multiple case study design and collected data through intensive semi-structured on-site interviews.

topic-main idea-supporting detail identification strategies in short readings, conversion of fractions to decimals or solving time-distance problems (Grubb & Associates, 1999; Grubb et al., 2011; Perin & Charron, 2006; Rose, 2012a). Standard remedial courses run for the full-length of the semester or quarter. Courses often will include a required lab component that consists of computer-aided supplemental instruction and additional practice and/or a tutoring component. Reading, writing, and mathematics are usually taught separately (Perin, 2013).

Modified Courses

Many community colleges offer modified remedial courses. The NFS data sample identified thirteen different modifications. They include “self-paced remediation, personalized remediation, tutor-based remediation, online remediation, accelerated remediation, intensive summer remediation, contextualized remediation, off-site remediation, alternation of instruction and application, and instruction in a quarterly rather than semester schedule” (Perin & Charron, 2006, p. 173). Some NFS schools used a mixed method approach, offering both standard and modified courses; others offered only modified forms of remediation. Examples of modified offerings include self-paced open-entry, open-exit instruction in a mathematics lab; supplemental tutoring after math class; personalized remediation through a combination of tutoring and self-paced computer-aided learning; online study skills courses; intensive half-semester or summer accelerated remedial courses; contextualized instruction where the reading and/or writing is directly linked to subject matter in the disciplines through paired courses;

contextualization through learning communities; combining the teaching of reading and writing. In the NFS sample, most of the modifications were offered as solutions to low student learning outcomes or to accelerate the completion of developmental requirements.

Special Programs

With the objective of meeting specific student needs, community colleges have offered customized programs. In the NFS sample, eight special developmental programs were identified at six sites. Many target students with low test scores in all three remedial areas. Most of these special programs were learning communities. Different from the contextualized pairing under modified courses, these special programs cluster remedial courses in reading, writing, and mathematics for students who place below college-level and/or have low test scores in all areas and/or have English language proficiency needs; test too low to place even into remedial course work; or failed remediation in the preceding academic year. Some of these programs incorporate vocational training, career guidance, and academic advising. Perin and Charron (2006) noted that “nowhere else in higher education does one see so many customized programs within a single concentration” (p. 180).

THE EFFECTIVENESS OF DEVELOPMENTAL EDUCATION

Examining the effectiveness of developmental education is a multi-faceted task that includes a review of measures used to gauge effectiveness of community colleges in general and of studies that specifically examine the effectiveness of remediation.

Measuring Effectiveness

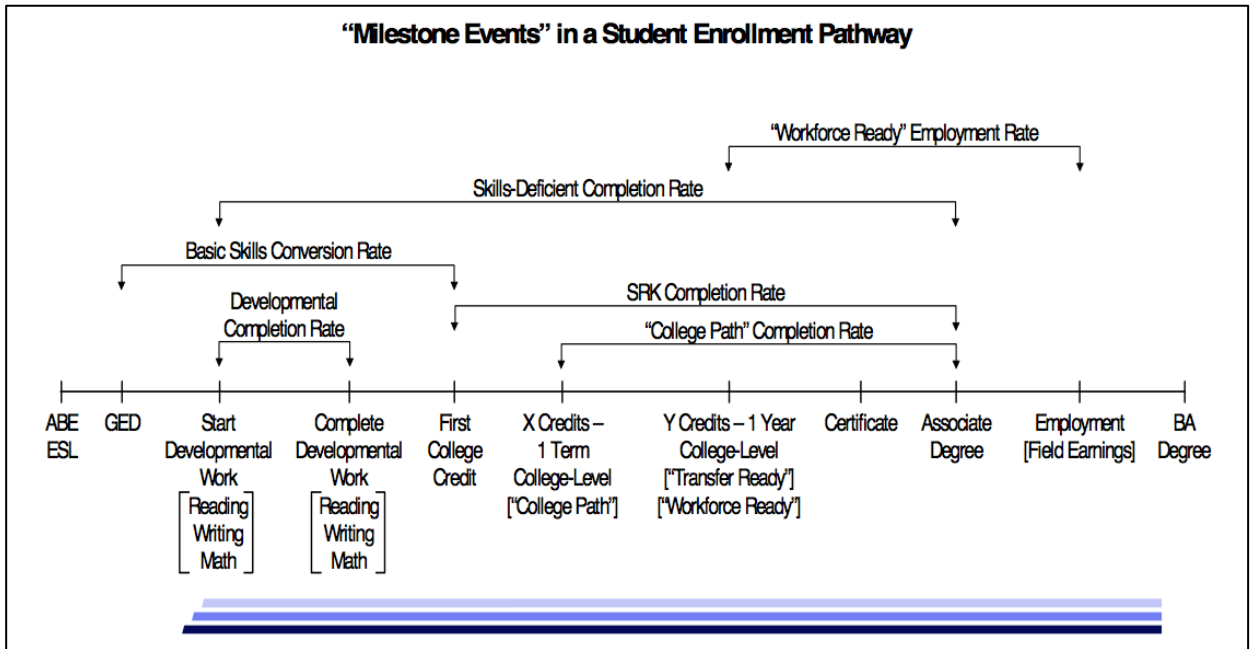
Measuring effectiveness is a major concern for community colleges. Standard measures developed for four-year institutions such as the Graduation Rate Survey used by the Integrated Postsecondary Educational Data System (IPEDS) assume that colleges and universities have largely one mission serving mostly full-time students who enter and stay in the same institution and graduate within 200% time. These do an injustice to the multiple missions of two-year colleges and the diversity of students serviced. Data from traditional measures do not yield helpful insights on how students gain momentum and where they lose impetus, thus giving scarce information on changes in policy and practice that might augment momentum towards completions (Ewell, 2011; Moore, Shulock, & Offenstein, 2009). American Association of Community Colleges (AACC) president and CEO Walter Bumphus articulated the problem this way:

Many traditional measures of institutional effectiveness can produce an incomplete or inaccurate picture of community college performance. For example, most national assessments are pegged to full-time students, but the majority of community college students attend part time. Given the increasing reliance on our colleges to educate growing numbers of students to keep our nation competitive, it is essential that the public and policymakers understand what we do and how well we do it. (AACC, 2011, para.3)

In response, the AACC launched the Voluntary Framework of Accountability (VFA) as the “foundational accountability framework” in 2011. VFA’s main emphasis is on developing meaningful intermediate measures of progress, measures that count as valid indicators of success and as guidance for improving student outcomes (AACC, 2012b). Several large scale efforts at creating more relevant measures of progression and success preceded

the VFA, measures that are helpful in developing informative measures of student outcomes in developmental education.

Peter Ewell (2006) of the National Center for Higher Education Management Systems (NCHEMS) worked in partnership with the Achieving the Dream (AtD) organization to develop the conceptual framework for reporting intermediate measures using a continuum for following students from developmental coursework to college completion. As part of his State Student Data Project for Bridges to Opportunity (funded by Ford Foundation and in cooperation with Achieving the Dream), Ewell used AtD statewide student data resources to develop what he termed common indicators to benchmark performance. He believed that well understood common terminology can “influence the national dialogue about student success at community colleges” and “provide states with a systematic way to assess progress and analyze the effectiveness of particular policy interventions.” He used “milestone events” to chart the student enrollment pathway between initial enrollment and graduation as seen in Figure 1 (Ewell, 2006). Ewell also strongly recommended disaggregation of data into student population sub-groups based on gender, race/ethnicity, age, part-time status, transfer status, need-based financial aid status, family income, single parent, and first generation student. He was particularly interested in the use of milestones to serve low income students in “explicit, unambiguous ways.”



Source: Ewell, 2006

Figure 1. "Milestone Events" in Student History.

Baldwin, Bensimon, Dowd, and Kleiman (2011) summarized the coming together of six AtD states to form the Cross-State Data Work Group (CSDWG) to use state data to implement, test, and refine Ewell’s recommended progression metrics. The intent of the group was to identify a suitable set of intermediate student success measures to answer key questions such as: “Are students being retained from term to term and year to year? What are the key credit thresholds that point to student progression and completion? Are students progressing through developmental education and into credit-bearing gatekeeper courses? Are students completing the gatekeeper courses within a certain period of time?” (p. 76). The resulting set of cross-state benchmarks for student success were tested first in Florida to measure the progression of

developmental students. This was then expanded to several states to ascertain the reliability of these indicators of success. These measures evolved into the following intermediate milestone benchmarks of student success: First-year student performance (persisted from fall to spring, passed 80% or more of attempted hours, earned 24 or more hours); second-year and third-year student performance (persisted from fall to fall, completed developmental math by year 2, passed gatekeeper English or higher by year 3, passed gatekeeper math or higher by year 3) (Jobs for the Future, 2012).

Leinbach and Jenkins (2008) worked in partnership with the Washington State Board for Community and Technical Colleges (SBCTC) to apply an expanded version of Ewell's milestone achievements to a cohort of more than 87,000 first time students who entered the SBCTC system in academic year 2001-2002. These students were tracked over five years. Leinbach and Jenkins reiterated the inadequacy of traditional accountability measures that depend primarily on two point-in-time events: fall enrollments (headcount and fall full-time equivalents) and graduation, the beginning and end points of a student's postsecondary academic journey.

For community college students, who enter at various levels of readiness for college and who progress through a variety of pathways at different rates, tracking intermediate achievements on the way to these more final outcomes is important to understanding the barriers to success and opportunities for improving outcomes. . . . Such milestones (completing ESL, fulfilling developmental coursework requirements, etc.) may be significant achievements from the perspective of the individual student, regardless of whether the institution measures them as formal completion. (p. 2)

Leinbach and Jenkins used their SBCTC findings to develop a research guide for states and individual institutions to apply the milestone model to measure student

progress and achievement. The guide uses two basic definitions—milestones and momentum points. Milestones are “measurable educational achievements that include both conventional terminal completions, such as earning a credential or transferring to a baccalaureate program, and intermediate outcomes, such as completing developmental education or adult basic skills requirements” (p. 2). Milestones vary depending on a student’s starting point—in adult basic skills, English as a second language programs, developmental education, or at college level. A student who begins in developmental education has the completion of required developmental coursework sequences as an intermediate milestone; a student who begins college-ready will have the first 30 college credits as a milestone en route to credential attainment or transfer.

Findings from the SBCTC cohort analysis showed that many developmental students do not even achieve their intermediate milestones. Leinbach and Jenkins (2008) thus called for the use of smaller educational achievement markers – momentum points—that correlate positively with the increased probability of reaching an intermediate milestone. “Momentum points are measurable educational attainments that are empirically correlated with the completion of a milestone” (p. 2). They identified two momentum points for students who start in developmental education—the completion of one developmental education course and the completion of a career exploration or introduction course. But they also noted that a momentum point must be reached in “a timely manner” like the first or second term after the student’s initial enrollment if it is to really propel a student towards a milestone within five years.

Moore, Shulock, and Offenstein (2009) applied the intermediate milestones framework to data from the California Community Colleges (CCC). They followed the 2000-2001 entering cohort of more than 247,000 first-time CCC students over seven years. Moore et al. used a concept of milestones similar to that used by Leinbach and Jenkins. However, instead of momentum points, they studied “measurable academic patterns that students follow (in addition to continued progression along milestones) that predict the likelihood that they will reach milestones and ultimately earn a degree” (p. 1). These academic behaviors correlated positively with forward progression and completion and were called “success indicators.” The empirically tested success indicators included beginning remediation in the first term, if needed; early enrollment and completion of gateway college-level mathematics and English; credit accumulation and related academic behaviors such as high rates of passing courses, completing 20 to 30 credits in the first year, earning summer credits, enrolling full time, enrolling continuously and on time for courses, and maintaining satisfactory academic progress (p. 2).

Offenstein and Shulock (2010) noted a distinction between the analysis emerging from Leinbach and Jenkins’s work and that from Moore, Shulock, and Offenstein’s findings. Leinbach and Jenkins (2008) focused almost entirely on educational achievements that students must attain if they are to succeed at receiving a credential (an associate’s degree or certificate) or transfer to a four-year institution. Moore et al. combined intermediate milestones that all successful students must attain with academic behaviors that increase the chances of completion but are not strictly

required to attain a credential. Offentstein and Shulock argued that this is an important distinction. Each results in different information whose relevance depends on the stakeholder audience. State lawmakers are largely interested in outcomes data, both intermediate and final. Leaders of higher education institutions, however, need to know what patterns of academic behavior lead towards positive outcomes. They depend on success indicators to provide useful and usable information on why and where students stall and how changes in institutional policies and practices (such as placement policies, advising practices, course structure, and pedagogical approaches) can infuse momentum in the right direction.

In relation to understanding patterns of academic behavior that are associated with positive outcomes, it is important to note the growing interest in the use of learning analytics. The 2013 Horizon Report (Johnson et al., 2013) described learning analytics as the area within the field of data mining that takes patterns emerging from large data sets of student interaction with technology to develop personalized supportive systems to improve retention and learning outcomes. As students access online learning activities and enrollment-related technologies, they each create a rich history of data that can be mined to personalize the learning environment as well as to measure academic performance in relation to academic-related behavior. “Learning analytics leverages student-related data to build better pedagogies, target at-risk student populations, and to assess whether programs designed to improve retention have been effective and should be sustained—important outcomes for administrators, policy makers, and legislators” (Johnson et al., 2013, p. 24). At the time of writing, the

field is still new and “still just out of reach for most educators” (p. 24). Nonetheless it is an emerging field to watch as early indications are that it shows promise as an effective strategy for encouraging student academic behaviors associated with forward progression.

In sum, all these efforts to improve how the measurement of effectiveness at community colleges in terms of student outcomes share the following emphases:

(1) success should not only be measured in terms of enrollment, year-to-year retention, graduation and transfer; (2) there should be intermediate measures of student progress between the start and end points of college academic journey; (3) intermediate points of progress correlate positively with increase probability of graduation; (4) understanding progress-inducing behaviors of sub-populations (defined according to their starting point) is a critical component of efforts to improve overall outcomes; (5) the ultimate purpose of measuring progress and success for institutions is the improvement of programs.

Limited Effectiveness

Measuring the effectiveness of developmental education has been and continues to be a challenge and remains controversial. It is partly due to a lack of will. Roueche and Roueche (1999) observed that “program evaluation has been and remains the weakest component of the remedial effort” (p. 26). Colleges in general have not invested in measuring the effectiveness of their developmental education programs. Data are either inappropriately collected or largely anecdotal. “The majority of

community colleges do not know how effective their remediation is because they do not assess their effectiveness very well, do not know how to assess it, or do not want to know” (p. 27). The lack of clear measurement may also be due to the complexity and confusion that seems to characterize the developmental education field. There is no agreed upon definition as to what college-ready means. Policies and rules governing assessment, placement, eligibility to enroll, and completion vary from community college to community college and from state to state. Sometimes, there are variations among programs within the same institution (Bailey et al., 2010). The goals of developmental education are often not articulated or reviewed and seldom evaluated. Thus Grubb (2001) declared: “Relatively few evaluations of remedial programs have been conducted, and many existing evaluations are useless because, failing to recognize what the program does, they provide little information about what should be changed to make it more effective” (p. i).

The field of developmental education has become more self-aware of the need for higher standards for accountability. Hence, a little more than a decade later, Boylan and Saxon (2012) waxed positive that the work of evaluation has matured and there is now a solid body of evidence of effective practices that improve the outcomes of developmental students. The evidence comes from “a collection of local institutional studies, large sample and random assignment studies without control groups; reviews of the literature; reports based on the Lumina-funded Achieving the Dream project; meta-analyses; and a variety of case study, ethnographic, or other qualitative studies” (p. 2). Rutschow and Schneider (2011) affirmed this but in a somewhat less optimistic tone:

“While research on best practices in developmental education abounds, little rigorous research exists to demonstrate the effects of these reforms on students’ achievement” (p. iii). Much of the research studies referenced by Boylan and Saxon were based on surveys, case studies of so-called exemplary or award-winning institutions, or literature reviews. They used descriptive statistics or simple comparative studies that do not account for student characteristics that may impact desired outcomes, thus limiting the conclusiveness of findings on an intervention’s effectiveness (Bailey, 2009; Bailey et al., 2010; Perin & Charron, 2006; Rutschow & Schneider, 2011).

What research studies there are on the efficacy of developmental education present mixed results. Based on data collected from the National Study on Developmental Education, conducted from 1988 to 1994, Boylan and Bonham (1992) reported that a majority of students who complete assigned developmental coursework pass a college-level course for which they received remediation. This finding was based on data that showed 83% of students who completed developmental reading went on to pass a college-level social science class, 92% who completed developmental writing passed college-level composition, and 77% who completed developmental math continued on to complete a college-level math class. Perin and Charron (2006) criticized the validity and reliability of the results of this National Study, citing a number of issues. First, important details regarding the methodology were omitted in the report (Boylan, Bliss, & Bonham, 1997). In addition, student inclusion in the sample was not based on random assignment. There were also no controls for student characteristics that might have impacted student performance. Further, the reports of positive student

performance did not include the number of students who failed or withdrew from the courses. In a separate communication, the National Center for Developmental Education confirmed that students who withdrew or were instructor-withdrawn were excluded from the denominator in calculating percentages on developmental student performance (Katherine Gerlaugh, personal communication, February 2, 2005). Considerations such as these caused Perin and Charron (2006) to question the conclusiveness of findings of the National Study about the effectiveness of developmental education.

The positive results presented by Boylan and Bonham (1992) are tempered by findings in other large-sample quantitative studies. Attewell, Lavin, Domina, and Levey (2006) used data from the National Educational Longitudinal Study 1988 (NELS:88) to analyze the effectiveness of remediation. Several findings on the impact of participation in remediation on progress to degree attainment are pertinent. Less than 25% of developmental community college students in the NELS sample completed a credential, degree or certificate, within eight years of their initial enrollment. However, this does not necessarily mean that participation in developmental education itself had adverse effects on progress to degree or other improved outcomes. Since developmental students typically have weaker skills than those who place directly into college, they could possibly have had even poorer outcomes but for the developmental education interventions they experienced. Indeed, after controlling for student characteristics, Attewell et al. found that being referred to remediation and participating in remedial coursework had no negative effects on a community college student attaining a degree.

NELS:88 data indicated that 68% of students who took developmental writing passed all the developmental writing classes they enrolled in and 71% passed all their developmental reading classes, but only 30% passed all their developmental math classes. Using different multivariate models, Attewell et al. found that students who successfully completed all their assigned remedial coursework in reading and writing were more likely to graduate than were academically similar students who did not participate in remediation. (The same benefit was not as clear for students who completed developmental math requirements.) This suggested that taking remedial coursework was in some way beneficial to students who completed them (p. 915). Attewell et al. also found that the graduation gap between students who placed into remediation and took the recommended classes and those who did not place into remediation has little to do with taking part in remediation. The gap was due to preexisting academic skill differences carried over from high school preparation. This conclusion affirms Clifford Adelman's finding that "college remediation ceases to predict graduation, once a measure of secondary school academic performance and preparation is added to the model" (as cited in Attewell et al., 2006, p. 889).

Bailey, Jeong, and Cho (2010) cite two statewide studies—one by Calcagno and Long on Florida and another by Martorell and McFarlin on Texas—that found "no positive effect of remediation on college credit accumulation, completion, or degree attainment" (p. 257). Assuming that a better understanding of developmental student progression (or lack of progression) through recommended course sequences and enrollment into gatekeeper courses would throw light on these discouraging findings,

Bailey et al. analyzed data collected as part of the Achieving the Dream: Community Colleges Count (AtD) initiative and were led to some unexpected conclusions. While the pass rates in individual developmental courses were high, only 46% of students referred to developmental reading and 33% of those referred to developmental math completed their recommended course sequences. Many failed to complete their course sequences simply because they never enrolled in a developmental class. Others exited from their course sequences after failing one of their courses. Still others stepped out of sequence completion even though they did not fail. They just did not come back the following semester to complete the sequence. In fact, there were more students who never enrolled or left between courses than those who failed. Again, only two-thirds of the students who completed their sequences enrolled in gatekeeper courses in the academic area for which they received remediation. For those who did enroll, the pass rate at 75% was relatively high.

Thus the problem for developmental student progression is not the ability to pass individual courses. The challenge is the student's failure to enroll and persist within the recommended path. These exit points through the sequence of courses from developmental through to gatekeeper courses presents some impediment to progression. Bailey et al. (2010) described this as a developmental "obstacle course" presenting exit options for students to step out of sequences. Unfortunately too many students select these options. "Fewer than one half of students complete their sequences, and only 20% of those referred to math and 40% of those referred to reading complete a gatekeeper course within three years of initial enrollment" (p. 267).

The low completion rates of both developmental coursework sequences as well as gatekeeper courses mean that very few will graduate from community college (Community College Research Center, 2014). A study conducted by Jenkins, Jaggars, and Roksa (2009) on students who entered the Virginia Community College System (VCCS) in 2004 indicated similar patterns of non-enrollment by students who are referred to remedial coursework.

In sum, developmental education has not been very effective. Community colleges in general have struggled to graduate their students. After six years, an average of 6% who begin postsecondary education in community colleges receive certificates and 15% earn an associate's degree. An estimated 37% leave their first institutions and do not enroll or complete at another (Radford, Berkner, Wheelless, & Shepherd, 2010). Approximately 42% of students who start at community college are referred to developmental education. The progression and completion data on these academically underprepared students is even more discouraging. Very few of them complete their developmental coursework sequences; even less (only 10%) graduate with a degree or certificate in six years (NCES, 2011b). Given the significant investment of time, effort, and resources into developmental education by colleges and students, reform in how developmental education is structured and delivered is clearly needed.

PROMISING STRATEGIES FOR IMPROVING THE EFFECTIVENESS OF DEVELOPMENTAL EDUCATION

The scarcity of rigorous and reliable experimental research on the effectiveness of developmental education programs has been alluded to. However, in recent years,

the burgeoning interest among community college leaders and policymakers on the outcomes of remediation has led to an expansion of empirical research to identify effective and high-impact strategies and practices to raise low rates of momentum point and milestone attainment. Rutschow and Schneider (2011) undertook an extensive literature review of these studies, categorizing promising strategies into four broad types of intervention models. The first type comprises interventions that help students *avoid* developmental education by strengthening basic academic skills while they are in high school. They range from high school dual enrollment and early college programs to early assessment programs. Rutschow and Schneider assessed the research on these interventions as “promising, though relatively limited in rigor” (p. ES-3). The second type of interventions seeks to *accelerate* student progression through developmental coursework sequences by shortening the time spent in remediation and/or redesigning the curriculum. Interventions include fast-track courses that compress content into a shorter time; modularized or self-paced courses, that chunk semester-long courses into competency-based smaller modules; and mainstreamed courses that permit developmental student enrollment with additional instructional support. Non-experimental research studies indicate these interventions result in higher pass rates in developmental and gatekeeper courses. A quasi-experimental study of the mainstreaming intervention at the Community College of Baltimore County, known as the Accelerated Learning Program (ALP), yielded encouraging results. The study tracked student outcomes over time and showed that students receiving the ALP intervention in comparison to academically equivalent students who did not participate in ALP

completed ENG 101 and ENG 102 and persisted year-to-year at higher rates (Cho, Kopko, Jenkins, & Jaggars, 2012).

The third type of intervention comprises *contextualized* instructional models. Developmental basic skills instruction is contextualized to students' chosen academic or vocational field and typically takes one of two forms. One, developmental students learn basic academic skills in the context of their chosen career programs or academic major. Two versions of this approach are discussed later in this review. Two, learning communities in which students take a cluster of two or more classes together are used to provide integrated learning environments that link basic skills learning with college-level academic content. Rutschow and Schneider (2011) found three sets of empirical research studies that underscored the promise of contextualized learning programs for improving outcomes: (1) non-experimental evaluations of programs under the Charles Stewart Mott Foundation's Breaking Through initiative showed increases in college readiness rates and progression towards the attainment of occupational certificates (Bragg & Barnett, 2009); (2) the quasi-experimental design study of the Integrated Basic Education and Skills Training (I-BEST) program in Washington State showed increases in credit hour accumulation, year-to-year persistence rates, and progression towards credential attainment (Jenkins, Zeidenberg, & Kienzl, 2009); and, (3) an experimental study evaluating the learning communities program at Kingsborough Community College in New York showed that developmental students participating in learning communities were more likely to pass their developmental writing course sequences and earned on average 12 more credits than their academically similar non-participating

(control group) peers. While the increases in credits slowed after the students were no longer in a learning community, they remained 2.4 credits ahead of their peers. The students also reported an increase in non-cognitive benefits such as a heightened sense of belonging and integration with the institution (Scrivener et al., 2008). However, it is important to note that indications of promise emanating from the Kingsborough program have been tempered by findings from a later larger sample study (Sommo, Mayer, Rudd, & Cullinan, 2012; Visher, Weiss, Weissman, Rudd, & Wathington, 2012) on learning communities in six college sites (including Kingsborough). The study reported very modest short-term gains in credits earned in targeted subjects and in total credits earned two semesters after the program ends. The learning communities' intervention appeared to have no impact on year-to-year persistence. This 2012 study also suggested that attaining more than short-term results may require enhanced, potentially more costly, long-term additional supports.

The last type of interventions comprises programmatic *supports* for developmental students such as tutoring, supplemental instruction, and intensive advising, and student success courses. Rigorous research on these student supports has been somewhat limited; evidence available from studies shows mixed results of their impact on student outcomes. Student success courses that focus on non-academic deficits such as poor study habits, lack of well-formed goals for college and career, and low awareness of the expectations in a postsecondary academic community have had the most promising results. Community college educators have long recognized these deficiencies are as much barriers to college success in addition to academic

underpreparedness (Robbins et al., 2004). Zeidenberg, Jenkins, and Calcagno (2007) conducted a non-experimental study to track 37,000 students who entered the Florida community college system in 1999 over five years. After controlling for student characteristics, they found evidence that students who enrolled in a student success course were 8% more likely to earn a credential than peers who did not and that remedial students who enrolled in a student success course were more likely to persist, complete, or transfer than remedial peers who did not.

CONTEXTUALIZATION AS A PROMISING ALTERNATIVE INSTRUCTIONAL STRATEGY

Rutschow and Schneider (2011), upon reviewing programs that have “relatively rigorous research,” concluded that “acceleration and contextualization strategies appear to hold the most promise for improving developmental education students’ success” (p. ES-2). The nature of the promise can be understood in one of two related ways. The first has to do with the attainment of identified progression milestones such as completion of developmental coursework sequences, completion of gateway courses such as freshman composition and college-level math, and accumulation of credits towards timely graduation. Empirical research indicates that these strategies have the potential to help turn the tide on developmental education attrition. The second has to do with instruction—the teaching and learning in the classroom. The ultimate goal of developmental education is not the completion of required classes so much as the acquisition of requisite levels of literacy and numeracy and transfer of concomitant skills for learning at the postsecondary level. Contextualization in particular holds promise as

an instructional strategy that nurtures the cognitive development of developmental students, promotes the transference of skills, and increases the motivation of students (Perin, 2013; Rose, 2012a; Simpson, Stahl, & Francis, 2004). The attainment of these learning outcomes through appropriate teaching approaches is the necessary counterpoint to the fulfilling of the requirements of progression metrics. Absence of quality learning either hinders progression or, worse, makes apparent progression meaningless.

Weaknesses in Standard Model of Instruction in Developmental Courses

As previously noted, “remedial pedagogy” in standard developmental courses focuses on the practice of sub-skills to improve reading, writing, and math skills. This has been described as “part-to-whole instruction” where sub-skills are seen as necessary parts that make up the whole, the whole being the set of college-level skills that enable the learner to comprehend a range of texts, write academic papers for several disciplines, understand mathematical processes, and apply computational thinking. These sub-skills are frequently taught using a repetitive decontextualized drill-and-practice approach reflecting a mechanistic approach to learning. There is little reference to how these skills may be relevant in other academic contexts, the world outside academia, or to student educational or career aspirations. Even reading and writing skills are typically taught in isolation of each other and are handled as different academic programs (Grubb, 2012; Grubb et al., 2011, p. 21; Rose, 2012b).

Classroom observations in purposive samples of developmental courses have revealed weaknesses in this standard approach. The drill-and-practice of sub-skills emerges from a behaviorist theory of learning where the focus is on the teacher, on the transfer of information, and on developing correct responses to the repetitive practice of rule-application exercises. This makes for “dull and monotonous” (Boylan, 2002, p. 72) classrooms that are not conducive to underprepared learners who are already the less motivated of students. Unfortunately, these methods of instruction bear similarities with those used in earlier phases of the developmental students’ academic journey, phases where essential learning did not occur (Grubb et al., 2011; Perin & Charron, 2006). The focus on the sequential acquisition of sub-skills—sentence skills before paragraph construction, paragraph-level deconstruction into topic, main idea and supporting details before reading authentic texts—turns developmental coursework into “narrow, mechanical pursuits, stripped of fuller meaning” (Rose, 2012a). Students are inadvertently encouraged to think of learning as getting the right answer. They learn to define good writing as not making grammatical mistakes and think that proficiency in math comes from memorizing the rules (Rose, 2012a). The real goal of developing higher levels of literacy and numeracy disappears. Paying attention to lower-level sub-skills means less attention is paid to developing the higher order critical thinking and problem-solving skills that Conley (2008) has identified as essential components of college readiness. Further, teaching reading, writing, and math skills separately from the college discipline areas where they have to be applied means that students may not transfer skills learned to classes where those skills are needed. Worse, students lose

motivation to work on basic skills because they fail to see the relevance of these skills to their personal goals and declared fields of interest (Cox, 2009; Grubb & Associates, 1999; Perin, 2011a). Badway's (1998) observation that "that the organization of curriculum at most community colleges violates what we know about how people learn effectively and the conditions under which they can apply their knowledge outside school settings" underscored the ineffectiveness of standard approaches to improve the literacies of developmental student (para. 7). As a result, "students 'vote with their feet', drifting in and out of these tedious classes . . . very often dropping out of remedial sequences before they finish" (Grubb et al., 2011, p. 25).

At the same time, remedial faculty generally exhibit genuine concern for their students (Grubb & Associates, 1999; Grubb et al., 2011). They are aware of students' struggles with time management, balancing school with work and family responsibilities, test anxiety, and lack of college know-how and find ways to help students cope. The drawback to this concern is that frequently minimal demands are placed on students. Assigned work is often done in class, so students do not learn to work independently. Imposing rigor and requirements seems to be regarded as impediments to retention given the apparent fragility of the students' commitment to academics (Grubb et al., 2011). In other words, the time and effort invested in remediation do not result in the kind of academic preparation needed for success in college-level coursework, the stated goal of developmental education.

Grubb et al. (2011) cited evidence from K-12 research that a constructivist student-centered teaching-for-meaning approach or a balanced instruction approach

that combines the best elements of behaviorism and constructivism results in higher levels of learning as well as test scores (pp. 7-8). However, it is fair to note that challenges to learning have also been found in developmental writing classrooms where instructors have taken an explicitly constructivist, student-centered, teaching-for-meaning, active engagement method of teaching. Exploring learning from the developmental student's perspective, Cox (2009) found that student preconceptions and expectations can negate well-intentioned progressive approaches to achieving course objectives. She reported that students found sitting in a circle to discuss a novel somewhat demeaning and not favorable to learning. Participatory student-centered approaches as in peer review activities were deemed as useless. Students said they came to learn from the instructor, the perceived authority, and not from one another. Attrition was high in these observed classrooms. In contrast, retention was higher in writing classes where the faculty member was clearly in charge, giving explicit instructions, setting high expectations, and issuing clear feedback. Cox's study also uncovered the major role that student fear of failure played as obstacles to retention and progress. Student-centered strategies such as giving substantive comments on assignments or responding directly to questions may inadvertently confirm student self-expectations of inadequacy. Developmental students manage this fear with a strategy of avoidance: avoid talking in class, direct contact with the instructor, handing in assignments, or doing the "hard" class requirements. The consequences of this fear management tactic are, naturally, low grades or course failure (Cox, 2009; Grubb & Cox, 2005).

All this points to the need for modifications to the teaching and learning process in the developmental classroom. Most of the strategies that Rutschow and Schneider (2011) found promising center on changing the structure of how developmental education is delivered. The one promising reform that pays attention to teaching in the classroom is contextualized developmental education (Perin & Charron, 2006). This finds support in the longstanding recommendation of developmental education leaders that basic skills instruction be connected with the content of college-level courses (Simpson, Hynd, Nist, & Burrell, 1997). What follows is a review of what contextualization is, how it works, and whom it serves; the support it finds in theories of learning; and evidence that it holds promise for halting developmental student attrition and promoting meaningful gains in learning.

What Contextualization Is

Contextualized instruction is also popularly referred to in the field as Contextualized Teaching and Learning (CTL). This review will use the acronym CTL for ease of reference. The U.S. Department of Education Office of Vocational and Adult Education proffered this definition of CTL in 2001:

Contextual teaching and learning is a conception of teaching and learning that helps teachers relate subject matter content to real world situations; and motivates students to make connections between knowledge and its applications to their lives as family members, citizens and workers and engage in the hard work that learning requires. (as cited in Berns & Erickson, 2001, p. 2)

Mazzeo expanded on this by defining CTL as “diverse family of instructional strategies designed to more seamlessly link the learning of foundational skills and

academic or occupational content by focusing teaching and learning squarely on concrete applications in a specific context that is of interest to the student” (as cited in Kalchik & Oertle, 2010, p. 1; Accelerating Opportunities, n.d.). Perin (2011b) described the contextualization of basic skills as

an instructional approach that creates explicit connections between the teaching of reading, writing, or math on the one hand and instruction in a discipline area on the other as, for example, when writing skills are taught with direct reference to topics covered in a history class. (p. 1)

CTL, as it is currently implemented, is an umbrella term that refers to two different forms of instruction: contextualized instruction and integrated instruction (Perin, 2011b). *Contextualized developmental instruction* focuses on the teaching of basic reading, writing, and/or math skills against the backdrop of a specific discipline in which the basic skills have to be applied. The skills taught are the same as those in traditional standalone developmental classes. The difference is that they are taught and practiced in the context of a current or future career program or transfer major. The instructor is a developmental education faculty member. For example, in a contextualized reading class where students aspire to enter into selective allied health programs, the teaching of reading comprehension strategies and study skills is carried out in the context of reading biology or chemistry textbooks. This form of CTL is typically chosen to help developmental students see the relevance and utility of skills through authentic usage.

Integrated developmental instruction takes place when the basic skills of reading, writing, and math are woven into the teaching of discipline-based courses. Taught by

discipline-specific faculty, basic skills are taught to develop higher-order thinking skills in the content area. This would include helping a student to go beyond procedural knowledge (“how to employ”) of a skill to conditional knowledge (“why and when to use”) (Simpson et al., 1997; Simpson et al., 2004). A criminal justice instructor, for example, may teach students the how-to of sequential report writing in the context of police reports. But the student must also know that analysis of forensic reports require a different form of writing. Integrated instruction is akin to some forms of reading-and-writing-across-the-curriculum. It not only helps students to recognize the relevance of academic skills but also enhances the acquisition and practice of skills in context. Reading a textbook in a history class calls for a different set of literacy competencies than reading a technical manual in an automotive technology class (Holschuh & Paulson, 2013; NCTE, 2011). What both forms of CTL instruction have in common are (1) the focus on providing developmental students with an authentic context for basic skill application, and (2) the additional efforts required by instructors to provide the connections.

Informed by Theory

The contextualized approach to teaching and learning for developmental education finds support in several learning theories. Aspects of theories pertinent to the current study are summarized here. CTL reflects a *constructivist* theory of learning. Constructivism has also been called the “meaning-making,” student-centered, or learning-focused (as opposed to teacher-focus) approach to learning. At base, it believes

that learning is more than an accumulation of information “parts” that make a “whole.” Learning takes place when students make meaning using prior experiences and knowledge to mediate their interactions with new information. The student must be invited to be an agent in the learning process. Active engagement is essential for learning to take place. The instructor is not seen as the sole authoritative transmitter of knowledge; rather, the instructor guides students to create their own interpretations. In current parlance, the instructor is more the guide on the side than the sage on the stage (Gillespie, 2002; Grubb & Associates, 1999; Grubb et al., 2011; McKusick, 2012).

Malcolm Knowles pioneered the theory of how adults learn. Called *andragogy*, this theory posits certain assumptions about adults: (1) adults bring a wide range of experiences into the classroom and they learn best when life experiences are connected with learning; (2) adults adopt a pragmatic stance towards learning: they need to know why they need to learn something and what the immediate value might be; (3) adults learn best in a contextual environment: they want to see the relevance of what is taught to the world outside academia or, in the case of developmental education, to a career program or transfer major; and (4) adults want to be self-directed learners and respond best when they are given options to influence their own learning (Baker, Hope, & Karandjeff, 2009; Harris, 2003).

Motivation theory focuses on the student’s perception of the value of the learning. The ubiquitous question “Why do we have to learn this?” is in part an expression of this need to know there is immediate value and relevance to what is taught. The contemporary developmental education student is particularly vocationalist

in outlook, seeing higher education as a means to better employment (Grubb & Cox, 2005). An assurance of relevance increases motivation. Predmore (2005) reported that research findings indicate “students are more highly motivated in the CTL classes. Students who may complain that school ‘doesn’t matter’ respond well to CTL strategies. Once they can see the real-world relevance of what they’re learning, they become more interested and motivated” (para. 11). Students also need to believe in their own self-efficacy. Cox’s (2009) analysis of student’s fear of failure and fear of inadequacy helps us understand how deep this need is. An increase in self-efficacy enhances student motivation (Baker et al., 2009; Kalchik & Oertle, 2010).

The latest *brain research* suggests that “the human brain is highly responsive to association and sensory experience.” Contextualized instruction allows the brain to make crucial associations by testing new information based on prior knowledge and experience as well as by applying new information to real-world applications. Learning new material as well as retention of lessons learned are enhanced (Baker et al., 2009, pp. 12-13).

Theory influences the orientation towards teaching and learning that instructors espouse in the classroom. Ramsden (as cited in Cox, 2009, pp. 94-95) identified three categories of practice. The first is “teaching as telling,” an orientation that is largely associated with the traditional lecture format. The primary goal is the transmission of information to the student audience. This orientation shares theoretical roots with behaviorism and associated teaching approaches. Ramsden’s second category is “teaching as organizing” where teaching practice focuses on experiential learning based

on the assumption that understanding is preceded by experience. The emphasis here is not on teacher-initiated transmission of knowledge but on hands-on activities that require student participation. The third category of teaching practice called “making learning possible” builds on the second and uses strategies to assess students’ prior knowledge and beliefs, facilitate students’ progress from novice to expert levels of understanding, and guide students to new levels of knowledge and different ways of thinking. This review has touched on the clear limitations of “teaching as telling” in developmental education. As Angelo and Cross (1993) insightfully observed, “Learning can and often does take place without the benefit of teaching—and sometimes even in spite of it—but there is no such thing as effective teaching in the absence of learning. Teaching without learning is just talking” (p. 3). Contextualization of instruction through a focus on “teaching as organizing” and “making learning possible” is a conscious effort to ensure that learning is the outcome of teaching.

Impact on Learning

Girded by theory that places student needs and interests at the center of teaching practice, proponents of CTL emphasize the potential positive impact that contextualized instruction has on two key dimensions of the learning experience. The first is the cognitive mechanism that promotes the transfer of skills, that is, “the students’ ability to demonstrate the competencies learned through one context in another” (Baker et al., 2009, p. 13; Gillespie, 2002). Weinstein et al. (2000, as cited in Simpson et al., 2004, p. 2) noted that if skills learned in developmental classes are not

transferred to other academic classes or to future learning tasks, then developmental education programs are of little value to students or their institutions.

Perin (2013) observed that the challenge in teaching the academically underprepared lies not so much in the standardizing the competencies that represent college readiness but in “knowing how to teach transferable skills” (p. 89). The challenge is particularly acute among the lower-skilled students in remedial coursework. She suggested that “linking basic skills in developmental education instruction directly to authentic content area applications that students will encounter in a disciplinary courses may increase the likelihood of transfer of skill to that particular setting” (Perin, 2011b, p. 2). CTL actively incorporates principles that facilitate strategy transfer. These principles, as delineated by Simpson et al. (2004), include the following: (1) teach students procedural knowledge (“how to do”), as well as conditional knowledge (“why and when to do”); (2) allow students time and opportunity to develop skill in applying a strategy; (3) model strategy usage within specific disciplinary contexts and never deliver strategy instruction in a vacuum; and (4) develop metacognitive awareness by reflecting on the application of strategy use in selected learning environments (p. 3; see also Simpson et al., 1997, p. 43; Gillespie, 2002, p. 3).

The second dimension is the affective mechanism of motivation. Studies have shown the connection between psychosocial factors such as motivation and student outcomes such as academic performance and persistence (Lotkowski, Robbins, & Noeth, 2004). Robbins et al. (2004) conducted a meta-analysis of 109 studies on the relationship between psychosocial factors and study skill factors and college outcomes

and found that the construct of academic motivation defined as “one’s motivation to achieve success, enjoyment of surmounting obstacles and completing tasks undertaken; the drive to strive for success and excellence” (p. 267) is one of the strongest predictors of academic performance.

Low motivation among developmental students can occur in different ways. It begins when students arrive on a college campus and find that they are not college-ready in one or more academic areas. They may resent this apparent mandated return to high school. Also, developmental students generally come into higher education with a short-term utilitarian “vocationalist” attitude (Grubb & Cox, 2005, p. 95): they seek a college credential to improve occupational prospects. They wish to avoid wasting time and money, wanting to learn only what is important in relation to their work-related goals. Repeating irrelevant (in the eyes of the students) basic skills in standalone classes decreases motivation to learn and increases the “getting it over with” attitude (Bailey et al., 2010; Cox, 2009, p. 63). Their lack of college-going knowledge and competing priorities in life (work, families, social life) also act to dilute motivation. Developmental education programs that contextualize curriculum and pedagogy tend to enhance student motivation to learn and can arrest the high rates of attrition (Baker et al., 2009; Mazzeo, Rab, & Alssid, 2003; Predmore, 2005).

Quantitative Evidence of Promise

There are limited studies on the effectiveness of contextualization. Perin (2011a, 2011b) found 27 studies on contextualization using experimental, quasi-experimental,

or comparison design. She confined her review to studies that focused on student outcomes, omitting the few studies that reported findings on teaching practice and instructor perceptions. Only seven studies were conducted on college academic or career/technical education programs, one of which was done at a four-year institution. There were six on adult basic education/workplace literacy programs. The rest used samples from K-12 academic programs. Most of the studies compared students who participated in contextualized classrooms with students who did not. All the studies reported positive gains in outcomes measures (e.g., reading, writing, or math scores) for students who participated in CTL. However, Perin noted that “many of the studies had methodological weaknesses that limited the conclusions about the effectiveness of contextualization” (p. 2). Thus while the studies clearly indicate the potential of contextualized practice, the conclusions were at best tentative. Summaries of three studies conducted in postsecondary settings are presented here.

Study One

The Content Comprehension Strategy Intervention (CCSI) was developed as a curricular supplement to provide systematic practice in essential basic skills to students in upper-level developmental reading and writing courses. The CCSI consisted of 10 units focusing on “written summarization, question formulation, defining and use of vocabulary, persuasive writing, and reading test preparation” (Perin & Hare, 2010, p. 1). These units were completed by students independently outside of class meetings over the course of one semester. For the study on the effects of contextualization, two versions of CCSI were developed. One version was contextualized for biology: units

focused on biology topics and textbook material. The other version drew its topics and material from a generic developmental reading textbook. The study used a quasi-experimental design: 16 sections of developmental reading and writing were chosen. Within 12 of these sections, half the students were randomly assigned to use contextualized CCSI units and the other half to non-contextualized CCSI units; students from the four remaining sections were asked to take part in pre-post tests but did not utilize CCSI.

The results. Students in both the CCSI intervention groups showed statistically significant gains on summarization variables (identification of main ideas, accuracy of information) over the comparison group with the contextualization group showing the greater gains. These findings suggested repeated contextualized practice using a content-specific text improves student comprehension and summary of material, enhancing preparation for handling course material in a college-level class. There were, however, no gains on the pre-post reading test for all three groups. Two limitations in this study were cited: the CSSI units were completed by students independently with little instructor feedback or guidance, opening up the possibility that student variables other than the contextualization intervention affected the better results; selection of students for the three groups may not have been totally random (Perin, 2011a; Perin & Hare, 2010).

Study Two

Caverly, Nicholson, and Radcliffe (2004) studied the effectiveness of contextualized strategic reading instruction in improving reading performance and

transfer of skills into college-coursework. First-semester developmental reading students at a four-year institution were taught to use a reading heuristic strategy called PLAN. The students used PLAN in a contextualized setting where instruction used authentic text from textbooks assigned in core curriculum classes. PLAN—Predict, Locate, Add, and Note—is a four-step strategy. The first step, Predict, required students to predict content by previewing the title, subtitles, boldfaced and italicized words, visual aids, and chapter summaries. They then created a concept map using ideas from the preview. The second step, Locate, guided students to review prior knowledge by putting check marks against known ideas on the concept map and question marks where the ideas are new. During the third step, Add, students read the text closely, confirmed already known information on and added new information to the concept map. At the last step, Note, students reflected on whether they could now perform the task requirements ascertained prior to reading (Caverly et al., 2004, p. 48). The instructor modeled the application of PLAN through think-alouds. Students performed guided practice in small groups. They were encouraged to apply the PLAN strategy to other classes to promote the transference of skills.

The results. Developmental reading students were compared with students who had similar developmental reading placements but chose not to take strategic reading over the four years of the study. The comparison was done on two measures of transfer: performance on a re-take of the standardized tests and course grades on a reading-intensive course (a history course was chosen). The test scores and history grades of students who experienced the intervention were significantly higher than the ones who

did not. Perin (2011a) noted three drawbacks in this study. There is a four-year gap between pre-tests and post-test results. Further, the students in the comparison group chose not to take a developmental strategic reading class, raising the possibility the other student-related variables could have impacted their poorer performance. Also, it was not clear whether the better performance of PLAN users was due to taking developmental reading (any curriculum), learning to use PLAN, or both.

Study Three

The Integrated Basic Education and Skills Training (I-BEST) program in the state of Washington is a partnership between adult basic education and career and technical education (CTE) programs in community colleges. The goal of this program is to improve the rates at which low-skilled adult students earn a credential from postsecondary CTE programs. In this integrated curriculum model, basic skills instructors and career-technical faculty jointly plan and teach classes that are designed to infuse basic skills instruction into instruction for college-level career-technical skills. Jenkins, Zeidenberg, and Kienzl (2009) conducted a study following 900 I-BEST students over two years and compared their outcomes to two groups of adult basic education students—one group that took a college-level CTE course and another group that did not.

The results. Using multivariate analysis, Jenkins et al. controlled for student characteristics including age, gender, enrollment patterns, and educational history. The study found that I-BEST students, in comparison to both samples of adult basic skills students, were more likely to continue to take subsequent college credit-bearing courses, earn credits towards a degree or credential, earn career certificates, and show

gains on basic skills tests. The comparative advantage was much higher in relation to the adult students who did not choose to take any college-level CTE course. Jenkins et al., however, cautioned that the contextualization intervention of the I-BEST program is at best correlated with positive outcomes. The study did not control for student-related variables such as motivation, persistence, grit, so their possible effects on the outcomes are unknown at this time.

Contextualization is a unique combination of re-designed curriculum and pedagogy affecting the teaching and learning process in the classroom. Vincent Tinto (2011) reminded us that, given the commuter nature of community colleges, the classroom experience is *the* college experience for most students. Success and progress towards credential attainment take place in the classroom, one class at a time. Finding out what works in classroom teaching and learning to propel student progression forward is key. Grubb et al.'s (2011) oft repeated conviction that efforts to improve student progression through developmental course work sequences and on to credential attainment must go beyond structural changes to address instruction—what is taught and how it is taught—should be heeded. Redesigning structure—accelerating courses, modularizing course work to meet individual needs, providing summer bridge camps, mandating student success courses, removing late registration, adding intrusive advising—is a necessary step for change but is not sufficient to ensure the learning that must accompany progress and the acquisition of desired credentials. Among the many innovations and touted high-impact practices on the forefront of community college reform efforts, contextualization of teaching and learning is the one promising practice

that pays attention to instruction (Perin, 2011a, 2013; Perin & Charron, 2006). Empirical studies point to the promise of this practice.

CONCLUSION

In the light of these research findings, the developmental reading program at Middle West Community College embarked on the introduction of CTL pilots in fall semester 2013. The purpose was to realize the promise of improved outcomes through contextualized instruction for underprepared reading students at MWCC. The research project undertaken in the current study was a form of program evaluation of these contextualized reading sections. The developmental reading program's faculty leadership intended to use the findings as part of a formative assessment of the pilots. Outcomes will inform program-level strategic decisions on how to enhance the effectiveness of its work with developmental reading students.

CHAPTER THREE: METHODOLOGY

INTRODUCTION

Most public community colleges have developmental education programs. These programs prepare students who are not academically ready for the rigors of college-level work. The concept of developmental education is simple: underprepared students should spend a semester or two to overcome skill deficiencies in reading, writing, and math before they begin in college-level programs. Basic skills preparation equips the student with the essential academic tools to succeed.

Developmental education is necessitated by the mission of access that is a hallmark of the community college movement. As Robert McCabe (2000) says, there is no one to waste. Community colleges are the pathways into higher education for anyone who wishes to learn, gain postsecondary credentials, and acquire higher-level skills for the workforce. These pathways provide access to populations traditionally underserved by higher education—low-income, first-generation, racial and ethnic minorities, non-traditional adult learners, and more recently, displaced workers and the chronically under-employed (Myran, 2009b). But many of these—1.7 million annually—are not academically equipped for college-level work and enter into college through developmental education programs (Complete College America, 2012).

In recent years, the mission of access has been counter-balanced by an equal emphasis on the mission of success and completion. Having the chance to enter postsecondary education is but the beginning. There must be progression towards completion. The national emphasis on completion has shone the light of scrutiny on developmental education programs. Evaluative reports indicate that most suffer from high attrition and low success rates (Bailey et al., 2010). The promise to open the doors of higher education to low-income, first-generation, minority, and non-traditional adult learners has turned out to be somewhat hollow. Most of the students who begin in developmental education exit from higher education institutions without credentials or the possibility of vertical transfer. Less than 10% will graduate in three years (Complete College America, 2012).

If developmental education is to remain relevant and viable in helping students succeed and attain their postsecondary aspirations, its conceptual framework and practices must be reformed. One emerging and promising area of developmental education reform is the contextualization of curriculum and instruction. In contextualized curriculum classrooms, developmental instructors teach basic academic skills “in the context of current or future disciplinary courses” (Perin, 2011b, p. 1). Jenkins et al. (2009) found that adult education students from contextualized classrooms showed more gains in credits earned and persistence than adult education students who did not. Perin, Bork, Peverly, Mason, and Vaselewski (2011) showed that students in a program where developmental education curricula focused on literary practices and skills expected in specific college-level content courses experience a

higher rate of success than students in traditional developmental reading and writing classes where literacy skills are taught in isolation and overlook “authentic applications” in college content-area courses.

Perin (2011b) avered that contextualization has the strongest theoretical base and empirical support among all the attempts to increase learning among academically under-prepared college students. But she acknowledged that these conclusions are at best tentative since rigorous research on the use of contextualization has been very limited. The study by Jenkins et al. focused on lower-skilled adult education students. There are few quantitative studies on the effects of contextualization among mid-level skilled developmental students in college. In response, this study sought to add to this body of knowledge by studying academic outcomes among mid-level skilled reading students as a result of taking required developmental reading in course sections that offer contextualization curriculum. Its overarching research question was articulated as follows: What is the impact of contextualized curriculum in the developmental reading classroom on the academic outcomes of first-year mid-level developmental reading students?

Based on the review of literature in Chapter Two, this project took the five smaller research questions outlined in Chapter One and posited the following directional hypotheses about developmental reading students who take reading in a contextualized reading section (intervention received) in their first semester in comparison with students who take reading in traditional non-contextualized sections

(intervention not received). The hypotheses were formulated in terms of intervention received and attainment of success outcomes.

- Hypothesis 1: Students who take developmental reading in sections with contextualized curriculum will successfully complete the required reading class at a higher rate than developmental reading peers in non-contextualized sections (hitherto referred to as untreated peers).
- Hypothesis 2: Students who take developmental reading in sections with contextualized curriculum will attempt and earn more credits in their first and second semesters than their untreated peers.
- Hypothesis 3: Students who take developmental reading in sections with contextualized curriculum will attempt and complete more college-level content classes in their first and second semesters than their untreated peers.
- Hypothesis 4: Students who take developmental reading in sections with contextualized curriculum will persist to the second year at a higher rate than their untreated peers.
- Hypothesis 5: Students who take developmental reading in sections with contextualized curriculum will report an increase in their academic engagement, motivation, and confidence.

RESEARCH DESIGN

The research question is studied at Middle West Community College where faculty were piloting the use of contextualized curriculum in some course sections of its upper-level developmental reading classes. The course title for upper-level developmental reading is Critical Reading Skills II, commonly referred to by its course prefix and number as CRS 099. In fall semester 2013, five contextualized curriculum sections were offered as pilots for students interested in the following career programs or transfer majors: automotive service technology, business, criminal justice, diesel power equipment technology, and health professions.

Rationale for Project Design

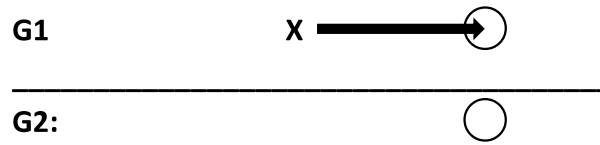
The research question was studied in two parts: one portion of the study was based on quantitative research methodology; the other utilized a qualitative approach. For easy reference, they are called Part One and Part Two. Both components of the study took place concurrently. The quantitative portion of the study yielded hard data on outcome achievements. The data were related to standard measurements of effectiveness when evaluating developmental education programs (Ewell, 2006; Goldberger, 2007; Leinbach & Jenkins, 2008). However, a fuller understanding of the impact of contextualization curriculum necessitated the inclusion of student perceptions of how the received intervention affected their academic experiences in terms of engagement, motivation, and confidence. Non-cognitive affective factors play key roles in improving student success (Cox, 2009; Perin, 2011a; Robbins et al., 2004). The

qualitative portion of the study sought to provide a collective mosaic of student experiences to complement the quantitative data and analysis of outcome achievements.

Part One

Part One of the research project used a comparative design to compare the outcomes of students who took developmental reading, CRS 099, in contextualized sections and those who took the same reading course in traditional non-contextualized sections. A comparative design modeled on the Most Similar Systems Design was deemed appropriate as this study involved two groups of students—students in contextualized sections and students in non-contextualized sections—who share similar characteristics except for the slant in the curriculum and instruction received. A comparison was made of how each group fared in the achievement of success. (How success is measured will be addressed later in this section.) Membership assignments to the two groups were not manipulated by the researcher: students underwent standard advising procedures to choose sections prior to the start of the research study. Likewise, faculty members were assigned to course sections via standard academic department processes without foreknowledge that this research study was going to be conducted on the effects of contextualization on student academic outcomes.

The study design is graphically depicted as follows:



The project shared elements of a program evaluation. Contextualization of curriculum and instruction requires significant buy-in from faculty. Implementation involves faculty time and effort to develop curriculum and instructional activities that mesh with the literacy competencies (specifically the reading/textual engagement skills and study strategies) expected in specific college-level programs of study. It requires administrative investment of fiscal resources to provide release time for faculty to develop cross-discipline partnerships and adapt teaching techniques. Administrative backing is also needed for appropriate evidence-based professional development to support this kind of initiative. An immediate goal of this project was to provide supportive evidence, if any, for expanding contextualization efforts beyond the initial pilots.

Variables

The independent variable in this part of the research study was the curricular design experienced by students who took CRS 099 (upper level developmental reading course) in fall semester 2013. At Middle West, entering students whose ACT reading sub-score is less than 20 are assessed using the ACT COMPASS test for possible placement in developmental reading. CRS 099 students are those who score within the range of 65 to 82 on the reading test. CRS 099 students in fall 2013 were dichotomously

divided into two nominal categories: students who took CRS 099 in contextualized reading sections and students who took the assigned course in traditional (non-contextualized) sections. The dependent variable was the academic performance and behavior of the CRS 099 students. Academic performance and behavior was measured in terms of the attainment of momentum points/milestones that are essential points of progression for developmental education students (Leinbach & Jenkins, 2008). This study focused on the following momentum points/milestones: completion of CRS 099 with C or grade of higher, credits earned in the first year—fall and spring semester, number of completed college-level content courses with D or better grade, and persistence to the second year.

Reducing Threats to Validity and Reliability

Given the design chosen for this study, the researcher had no control over group member assignment or who taught contextualized or traditional curriculum sections; hence, there are two obvious weaknesses. One is that the findings from the study are weak in external validity insofar as the results may not be generalizable to the population of mid-level skilled developmental reading students beyond Middle West. The other is that alternative explanations for variance in the dependent variable—academic performance and behavior of students—cannot be definitively ruled out.

However, threats to internal validity were reduced in the following ways. One, the study guarded against history effects by taking measurements of academic performance and behavior at three points in time: end of first semester (fall), end of second semester (spring), and beginning of second year (second fall). If a confounding

event were to have happened during the course of the study, the researcher would have been able to see whether a change in the dependent variable coincided with the timing of the event in question. Two, the threat of maturation effects on validity is minimized in this study. The duration of the study was relatively short—one academic year. It was expected that the two comparison groups of first-time-in-college students with the same reading placement in a study over the course of the first year in college would develop through the first year in largely similar ways. Three, threats against validity that come through volunteer effects and communication among subjects is not be a concern as this portion of the study utilized student unit record data in the college student information database. The data were extracted at the aforementioned three points without direct student contact. Reliability in terms of replicability is achieved through clear operational definitions of the constructs under study and well-defined steps in data collection and analysis.

Part Two

Part Two of the study focused on student perceptions of the intervention (contextualized curriculum) received in CRS 099, particularly in the areas of engagement, motivation, and confidence.

Epistemology

This portion of the study was framed within the context of constructivism (McKusick, 2012; Merriam, 2009). Individuals bring a prior network of conceptual understanding, experiences, beliefs, and values into each interaction with their social

reality. Meaning is constructed as each individual interprets his or her social reality in terms of this prior knowledge and the immediate context of the interaction.

Constructed meaning impacts the individual's perceptions, responses and actions. Thus, students each enter the classroom with a set of prior educational experiences, ideas of what it means to be a college student, priorities, and values. They also come with pre-formed ideas of what they should major in or choose as a likely career path. As they enter into the experience of learning in the environment of contextualized curriculum and pedagogy, these academic experiences affect their evolving perception of what it takes to succeed in college and their personal role in the college journey toward a degree. This study used student perceptions of being in a contextualized classroom to construct a mosaic of collective experiences to advance understanding of the impact of this curricular approach.

SAMPLING

Part One

Rather than selecting a random sample of subjects, this was a population study: the entire population of new students who started at Middle West in fall semester 2013 and who placed into and enrolled in CRS 099 that same semester. (Students who took CRS 099 in fall 2013 but had completed previous semesters at Middle West were excluded from the population.) The unit of analysis was the student in this population. The data for this part of the study were collected from student unit records in Middle West Community College's student information system. Each record is uniquely

identified through a college-issued student identification number. The data, however, were given to the researcher without the unique identifiers.

Explanation of Sample

In fall semester 2013, a total of 429 students at MWCC enrolled in CRS 099. Of this population, 140 students were not first-semester students. They were students who had enrolled in at least one earlier semester: some were repeating CRS 099 due to an unsuccessful earlier attempt; others started in CRS 098 due to lower initial placement scores. These 140 students were eliminated from the overall cohort to preserve the similarity of the students in the study in terms of reading-skill level and prior experience of CRS 099 curriculum. The remaining 289 students who were included in the study sample were all first-time students at MWCC taking CRS 099.

Five pilot sections of contextualized curriculum were offered in fall semester 2013. The curriculum in each section was linked to one of the following career programs or transfer majors: automotive service technology, business, criminal justice, diesel power equipment technology, and health professions. That sections of contextualization were offered in these specific discipline areas was due to a combination of factors that included awareness of need, faculty interest, and prior grant opportunities. Anecdotal evidence suggested that students in career programs struggled in reading classes. Cohort tracking data had indicated the need for a different approach to impact retention and persistence. Some faculty had expressed interest in contextualization due to their professional interests. Earlier grant opportunities released faculty from some teaching obligations to observe college-level classes related to health professions,

diesel-powered technology, and automotive technology. Other faculty participated in learning communities that linked reading to criminal justice and business. The confluence of these factors led to the pilot launch of five sections of contextualized reading curriculum in fall semester 2013.

Fifty-three (53) students opted to take CRS 099 in these contextualized sections: they comprised the sub-cohort who received the contextualized curricular intervention. The remaining 236 students took CRS 099 in traditional non-contextualized classes where the curricular focus is on broad non-discipline specific textual engagement skills needed for introductory general education classes. The choices for contextualized or non-contextualized sections were presented to students during their first advising session that took place as part of the required orientation for new degree-seeking students.

This research study compared the academic outcomes of students who received the contextualized intervention with developmental reading peers who did not receive the intervention.

Instrumentation

The researcher worked with Middle West Community College's Office of Institutional Research (OIR) to collect the data on the academic performance and behavior of the students in the two comparison groups. As mentioned above, these data in the study were extracted from the college's archival student information records at three points in time: end of fall semester 2013, end of spring semester 2014, and beginning of fall semester 2014. There was no direct contact with the students in Part

One of the study. Threats to validity such as the effects of self-selection, volunteerism, and communication among subjects did not surface. OIR oversaw consistency in extraction of data, assuring reliability and accuracy of the data. OIR removed unique student identifiers from the data reports before the data were made available to the researcher.

Part Two

Part Two of the study used qualitative methods to study the experiential impact of contextualized curriculum on students. Students who took contextualized reading sections in the fall semester 2013 were invited to participate in focus group interviews to reflect on their experiences in the contextualized classroom, the relevance of skills learned, their perceptions of growth in academic engagement, motivation, and confidence, and the perceived impact on their academic performance in the semester following the contextualization intervention. This provided qualitative insights to complement the student unit record data from the student information database.

Sample Selection

Students who took contextualized reading sections in fall semester 2013 were invited to participate in focus groups. The focus group interviews were conducted in late spring semester, 2014. The invitations were distributed via MWCC student email accounts and/or by phone. Both forms of invitations were used to accommodate two potential obstacles: (1) some students do not regularly access their college email, and (2) phone numbers in the student information system are sometimes not operational or

are incorrect. Students in these sections had the same developmental reading placements; all students within a contextualized section had declared a common interest in a career program or a major related to a career field; all were first-time-in-college students in fall semester 2013.

Informed Consent

Before the focus group interviews begin, the students were asked to individually sign an informed consent form. A verbal explanation of the concepts of informed consent, voluntary participation, and confidentiality was also given. It was not assumed that the students would read the informed consent form with care and comprehension. It was also emphasized that participation in the focus group interviews and opinions voiced during the interviews would not have any impact on grades in classes taken at Middle West Community College.

Semi-structured Focus Group Interviews

A semi-structured interview approach was used for the focus group interviews: the interviews started with standardized questions and moved as needed into open-ended follow-up questions. Each interview session lasted approximately 50 minutes. Students were given the choice of three times.

A note-taker took notes on a laptop during the interview. The interviews were also audio-recorded.

DATA ANALYSIS

Part One

Data analysis began with the preparation of the data. This included entering the data into SPSS (Statistical Package for the Social Sciences) that the study used for statistical analysis of the data. Decisions were made regarding how the data on the variables were entered. For example, the student information system provided letter grades on class performance. In order to use grades as an interval/ratio measure, the letter grades were re-coded into numerical form as continuous variables (A = 4.0, B = 3.0, C = 2.0, D = 1.0, F = 0. Middle West Community College does not use a plus/minus distinction when awarding letter grades). However, when looking at whether students passed CRS 099 with a C or better, the data were recoded into dichotomous categories (0 = 0.0 – 1.0; 1 = 2.0 – 4.0).

Descriptive Statistics

Descriptive statistics were used to provide an overview of the data. Frequency distribution tables provide a basic summary of the number of students included in the study, their ethnicity and socio-economic status in terms of Pell eligibility, grades and credits earned by students in each comparison group. Measures of central tendency (mean, mode, and median of credits earned and college courses completed in the first year), dispersion (range, standard deviation of grades and credits earned), and distribution of grades and number of credits were reported.

Measures of Association and Inferential Statistics

Hypotheses posited were tested using the following measures of association and inferential statistics. The choice of statistics was based on the nature of the variables selected for this study.

Hypothesis 1 (course success rates). The independent variable (curricular design in CRS 099) and dependent variables (the course success rate—C or better grades or D, F, and W grades) are categorical. A chi-square test was run to compare observed and expected frequencies to see whether course success was contingent on curricular design or whether the variables were independent of each other. The Phi statistic was applied to check for the magnitude of relationships.

Hypothesis 2 (credits hours attempted and earned). An independent samples *t*-test was run to test whether the mean difference in attempted hours between students in contextualized CRS 099 and those in non-contextualized CRS 099 were statistically significant. The confidence levels of the difference were considered. A similar *t*-test was run to test the mean difference in earned hours between the two sub-cohorts.

Hypothesis 3 (college content courses attempted and completed). A regression analysis was run to see whether taking reading in a contextualized section had a greater impact on the number of college courses taken and on the number completed than taking reading in a non-contextualized section.

Hypothesis 4 (persistence rates). Given that the independent variable (curricular design in CRS 099) and the dependent variable (persistence – persisted; did not persist)

are categorical, a chi-square test was run to test relative frequencies to see whether next-term persistence (fall to spring) and year-to-year persistence (fall to fall) were contingent on or independent of curricular design.

Part Two

A system of coding using word processing software was developed to interpret the data. Coding began with descriptive open coding. Interview scripts were annotated with notes in the margin when data looked interesting and/or appeared relevant to the study of impact of the contextualization intervention on student motivation and confidence. This was followed by interpretive coding. Open codes were grouped as regularities and recurrent themes appeared. This led to the identification of categories upon which an interpretative commentary was constructed.

Interpretations required a return to literature already reviewed for guidance. Data and emergent patterns resulted in the construction of different meanings. Alternative explanations to data were sought to test interpretations and findings through consultation with professional colleagues who work closely with the student demographic under study as well as with the members of the dissertation committee.

DISCUSSION AND CONCLUSION

This research study posited five hypotheses regarding the academic performance and behavior of CRS 099 students who completed developmental reading requirements in a classroom that used contextualized curriculum and instruction. Based on research noted in the review of literature, it was anticipated that the findings of this study would

affirm the hypotheses: these students would complete CRS 099 with a C or better, earn more credits in the first year, attempt and pass more college-level courses, and persist to the second year at higher rates than developmental reading peers who take traditional curriculum sections. Students experiencing reading in a contextualized classroom were expected to perceive in themselves a higher level of academic motivation and a stronger degree of confidence as they continued in college.

However, it must be acknowledged that the anticipated affirmation of these hypotheses at best would correlate the use of contextualization in the developmental reading classroom with a better rate of milestone attainment and an increase in student perception of motivation and confidence. It would only partially address the question of whether contextualization increases student acquisition and transfer of literacy competencies and textual engagement skills into specific disciplines or programs of study. It would not answer the question of whether the improvement in milestone attainment was caused by this transfer of skills. In other words, further research will be needed to tie milestone attainment with increased learning and improved competencies.

Also, the progress of the developmental student toward credential attainment is the result of the interplay of several factors. Curriculum and instruction is but one, albeit important, factor. How the effectiveness of the contextualization of curriculum is moderated or augmented by non-academic factors such as income, prior educational preparation, first-generation status, life-management strategies or the quality of faculty professional development are issues that still need to be investigated.

CHAPTER FOUR: FINDINGS AND ANALYSIS

OVERVIEW OF CRS 099 STUDENT COHORT

The research project focuses on the outcomes of students who took CRS 099,³ an upper level developmental reading class, in fall semester 2013 at Middle West Community College (MWCC). Cohort members were entering freshman students who placed into CRS 099 by their COMPASS reading score. For these students, taking CRS 099 is mandated through MWCC's strictly enforced assessment and placement policy. It should be noted that students who took CRS 099 in fall 2013 but had taken classes prior to fall 2013 were eliminated from the study population. Such students may have started in CRS 098 (the lower level developmental reading class) with a lower range of reading placement scores; they could also be repeating CRS 099. The researcher chose to limit the sample to new students attempting CRS 099 for the first time to strengthen the similarity of students in terms of reading skill-level and prior experience of CRS 099 curriculum.

Cohort Demographics

Descriptive data provide an overview of the demographics of the CRS 099 student cohort.

³ CRS 099 is the course prefix and number for Critical Reading Skills 099. The 099 course number designates pre-college or developmental curriculum.

Total Cohort

The total cohort comprised 289 students: 144 were female; 145 were male. The ethnic profile of the cohort was as follows: 40.1% of the students were black or African American; 40.5% were white; 4.5% were Hispanic or Latino. Eighty-two percent (82%) of the students fell into the traditional college age-group of 17-20. On the basis of Pell eligibility, 64% of the cohort can be classified as low socio-economic status (SES).

For the purposes of the study, the cohort was divided into two comparison groups: students who took CRS 099 in classrooms where the reading curriculum was contextualized to specific career or transfer programs (hereafter referred to as contextualized sub-cohort or students) and students who took the same course in classrooms where the curricular focus was on broad non-discipline specific textual engagement skills considered relevant for first-year general education classes (hereafter referred to as non-contextualized sub-cohort or students).

Contextualized and Non-Contextualized Sub-Cohorts – Gender, Ethnicity, Age, and Pell Eligibility

- Males made up 60% of the contextualized sub-cohort whereas women made up 52.1% of the non-contextualized sub-cohort (see Table 1).
- The ethnic make-up of both sub-groups was dominated by black and white ethnic groups. In the contextualized sub-cohort, 35.8% were black and 45.3% were white while Hispanic or Latino students made up 5.7% of the group. In the non-contextualized sub-cohort, 41.1% were black and 39.4% were white while Hispanic students accounted for 4.2% (see Table 2).

- In the contextualized sub-cohort, 92.5% of the students were in the traditional college age-group of 17-20 and 5.7% in the 31-39 age-group. Among the non-contextualized students, 79.7% were in the 17-20 age-group, 8.1% in the 21-14 age-group and 5.1% in the 25-30 age-group (see Table 3).
- In the contextualized sub-cohort, 30 out of 53 students (or 56.6%) were Pell eligible while 155 out of total of 236 students (or 65.7%) in the non-contextualized group qualified for Pell grants (see Table 4).

Table 1: Fall 2013 CRS 099 Student Demographics – Gender

GENDER	NON-CONTEXTUALIZED		CONTEXTUALIZED		TOTAL	
	N	%	N	%	N	%
Female	123	52.1	21	39.6	144	49.8
Male	113	47.9	32	60.4	145	50.2
Total	236	100.0	53	100.0	289	100.0

Table 2: Fall 2013 CRS 099 Student Demographics – Ethnicity

PRIMARY ETHNIC/RACIAL CLASSIFICATION	NON-CONTEXTUALIZED		CONTEXTUALIZED		TOTAL	
	N	%	N	%	N	%
Asian	3	1.3	1	1.9	4	1.4
American Indian or Alaska Native	2	.8	1	1.9	3	1.0
Black or African American	97	41.1	19	35.8	116	40.1
Hispanic or Latino	10	4.2	3	5.7	13	4.5
White	93	39.4	24	45.3	117	40.5
Unknown	31	13.1	5	9.4	36	12.5
Total	236	100.0	53	100.0	289	100.0

Table 3: Fall 2013 CRS 099 Student Demographics – Age Range

AGE RANGE	NON-CONTEXTUALIZED		CONTEXTUALIZED		TOTAL	
	N	%	N	%	N	%
Under 17	1	.4	0	0.0	1	.3
17-20	188	79.7	49	92.5	237	82.0
21-24	19	8.1	1	1.9	20	6.9
25-30	12	5.1	0	0.0	12	4.2
31-39	8	3.4	3	5.7	11	3.8
40-55	8	3.4	0	0.0	8	2.8
Total	236	100.0	53	100.0	289	100.0

Table 4: Fall 2013 CRS 099 Students – Socioeconomic Status in Terms of Pell Eligibility

SOCIOECONOMIC STATUS	NON-CONTEXTUALIZED		CONTEXTUALIZED		TOTAL	
	N	%	N	%	N	%
Pell Eligible	155	65.7	30	56.6	185	64.0
Non-Pell Eligible	81	34.3	23	43.4	104	36.0
Total	236	100.0	53	100.0	289	100.0

Observations

- There were more males, percentage-wise, in contextualized CRS 099 classes than females in comparison to the non-contextualized CRS 099 classes. This was possibly due to the fact that the diesel technology and automotive classes tend to primarily attract male students.

- There was less age diversity in the contextualized CRS 099 sub-cohort. Traditional-aged students dominated and almost 95% of the students were 24 and younger.
- In fall semester 2013, black students made up 18.3% of MWCC's total credit student population (includes all first-time and continuing students taking credit-bearing courses) while Hispanic students comprised 5.5%. If only first-time credit students ($n = 2255$) were considered, black students accounted for 28.5% and Hispanic students 5.6% of the population. Clearly, in both the contextualized and non-contextualized developmental reading cohorts, black students at 40% were overrepresented. This reflects the apparent college-readiness gap between white and black students in terms of entering assessment scores and placements into developmental coursework, a gap that has been typical among freshman students entering MWCC each fall. This same lack of college-readiness is, however, not indicated among Hispanic students. The percentage of Hispanic students in the contextualized sub-cohort paralleled that in the general student population at MWCC; the percentage of Hispanic students in the non-contextualized population was actually slightly below their percentage representation in the general student population.
- In CRS 099, 64% of students were Pell eligible. The high number of low-income students as well as the over-representation of minority (black) students indicate that students in developmental reading are at a higher

level of academic risk (Complete College America, 2012; Mullins, 2012; NCES, 2011b).

HYPOTHESIS 1 – FINDINGS AND ANALYSIS

Hypothesis 1 states that students who take developmental reading in sections with contextualized curriculum will successfully complete the required reading class (CRS 099) at a higher rate than developmental reading peers in non-contextualized sections. Data point toward the confirmation of Hypothesis 1.

Findings: Descriptive Statistics

The grades earned by students in contextualized and non-contextualized sections of CRS 099 are summarized in Table 5.

Table 5: *Fall 2013 CRS 099 Grade Distributions*

Grades	NON-CONTEXTUALIZED		CONTEXTUALIZED	
	<i>N</i>	%	<i>N</i>	%
A	48	20.3	9	17.0
B	48	20.3	16	30.2
C	41	17.4	13	24.5
D	11	4.7	5	9.4
F	37	15.7	5	9.4
W	51	21.6	5	9.4
Total	236	100.0	53	100.0

Successful completion of CRS 099 is defined as earning a grade of C or better. Students who earn D or F grades or withdraw from CRS 099 are considered not successful in the course. (At MWCC, unsuccessful CRS 099 students are required to repeat developmental reading in the following semester or assess out by taking COMPASS reading again.) Table 6 is a contingency table presenting a cross-tabulation of CRS 099 students, divided between contextualized and non-contextualized curriculum, in terms of their success rates in CRS 099 in fall 2013.

Table 6: *Fall 2013 CRS 099 Course Success Rates*

		NON-CONTEXTUALIZED		CONTEXTUALIZED	
		<i>N</i>	%	<i>N</i>	%
Successful	C or better	137	58.0	38	71.7
Not successful	D/F/W	99	42.0	15	28.3
Total		236	100.0	53	100.0

CRS 099 students in contextualized sections had a success rate that is 13.6% higher than students who took the same course in non-contextualized sections. These observed values indicate that in terms of relative risk, students in contextualized sections are 23% more likely to complete CRS 099 successfully than their peers in traditional non-contextualized sections. By the same token, the non-success rate of students taking CRS 099 in non-contextualized sections is 12.1% higher than peers in contextualized sections. They are 32.5% more likely to earn D or F grades or withdraw from the course.

Findings: Associational and Inferential Statistics

Given that the independent variable (the curriculum design in CRS 099) and dependent variables (the course success rate of students in CRS 099) in Hypothesis 1 are both categorical and that Hypothesis 1 poses a bivariate problem, a chi-square test was run to test relative frequencies to see whether success is contingent on the curriculum design or whether they are independent of each other. The results are presented in Tables 7 and 8.

Table 7: *CRS 099 Course Success Rates – Contingency Table of Observed and Expected Frequencies*

	NON-CONTEXTUALIZED		CONTEXTUALIZED		TOTAL
C or better	Observed	137	Observed	38	175
	Expected	142.9	Expected	32.09	
D/F/W	Observed	99	Observed	15	114
	Expected	93.09	Expected	20.91	
Total		236		53	289

Table 8: CRS 099 Course Success Rates – Chi-square Tests

CHI-SQUARE TESTS					
	VALUE	df	ASYMP. SIG. (2-SIDED)	EXACT SIG. (2-SIDED)	EXACT SIG. (1-SIDED)
Pearson Chi-square	3.375 ^a	1	.066		
Continuity Correction ^b	2.828	1	.093		
Likelihood Ratio	3.493	1	.062		
Fisher's Exact Test				.087	.045
Linear-by-Linear Association	3.363	1	.067		
N of Valid Cases	289				

^a 0 cells (.0%) have expected count less than 5. The minimum expected count is 20.91.

^b Computed only for a 2x2 table

SYMMETRIC MEASURES					
		VALUE	ASYMP. STD. ERROR ^a	APPROX. T ^b	APPROX. SIG.
Nominal by Nominal	Phi	.108			.066
	Cramer's V	.108			.066
	Contingency Coefficient	.107			.066
Interval by Interval	Pearson's R	.108	.055	1.841	.067 ^c
Ordinal by Ordinal	Spearman Correlation	.108	.055	1.841	.067 ^c
N of Valid Cases		289			

^a Not assuming the null hypothesis.

^b Using the asymptotic standard error assuming the null hypothesis.

^c Based on normal approximation.

The chi-square statistic is 3.375 with a p value of .066 and a Phi value of 0.108. Chi-square critical values indicate that based degrees of freedom (df) = 1, a chi-square statistic of 3.8 is needed to achieve $p < .05$. If a traditional $p < .05$ standard of significance is held, then the association posited here between success rates and curriculum design is not statistically significant. While the observed values clearly differ

from the expected frequencies, the difference is not large enough to generate a larger chi-square critical value. The Phi value of 0.108 indicates a weak effect size.

Discussion of Findings

Descriptive data indicate that students taking CRS 099 in a contextualized classroom experience much better course success rates. They are 23% more likely to pass CRS 099. CRS 099 is the terminal course in required reading courses at MWCC. Thus passing CRS 099 with at least a grade of C represents the successful completion not only of a required class but also of an essential first milestone towards credential attainment, namely, the completion of a required developmental coursework sequence.

However, the chi-square statistic is relatively small with a probability value of 0.066 suggesting that the association between the curricular intervention and course success rates might not have the desired statistical significance weight. There are two points to consider in evaluating the impact of this on Hypothesis 1. One, it is important to note that setting the desired p value at < 0.05 is but a statistical convention, albeit a highly respected one, to show that there is less than a 5% chance that the null hypothesis is true (which in the case of the current study would mean that there is no relationship between course success rates in CRS 099 and the curriculum design of the course). The p value is affected by sample size and effect size. The size of the cohort and sub-cohorts in this study is relatively small. Analysis using G*Power software indicates that the cohort/sub-cohort sizes in this study only have a power level of 0.63. To achieve the conventional minimum of $p = < 0.05$, the traditional power level is 0.80. In other

words, an alpha level of 0.05 is not achievable. For studies such as this one that use relatively smaller amounts of data and expect smaller effect sizes and where the consequences of failing to reject a null hypothesis are important, there are grounds for allowing a larger p value such as 0.07 or even 0.1. Two, this study was designed as a program evaluation using the entire population of first-semester MWCC students attempting CRS 099 for the first time. The results of the study will not be used to make inferences about the rest of the fall 2013 CRS 099 population. They are intended to facilitate program-level decisions about expanding contextualized curricular pilots. A p value of 0.066 is sufficient to indicate promise in the chosen curricular direction. The researcher concludes that there is basis to say that Hypothesis 1 should not be rejected in favor of the null hypothesis at this juncture and that the data provide sufficient substantive significance for the evaluative work at hand.

HYPOTHESIS 2 – FINDINGS AND ANALYSIS

Hypothesis 2 states that students who take developmental reading in sections with contextualized curriculum will earn more credit hours in their first and second semesters (fall 2013 and spring 2014) than developmental reading peers in non-contextualized sections. To test this hypothesis, the course-taking patterns of CRS 099 students were followed from fall semester 2013 through to the end of spring semester 2014. These two full semesters comprise the study population's first year in college.

Findings: Descriptive Statistics

The descriptive data in Table 9 show that students who started college at MWCC in contextualized CRS 099 classes (fall 2013) attempt and earn more credits than their peers who took the same course in non-contextualized classrooms.

Table 9: *Attempted and Earned Hours (Fall Semester 2013 – Spring Semester 2014)*

FALL 2013 CRS 099			ALL CREDIT HOURS ATTEMPTED	ALL CREDIT HOURS EARNED
Contextualized CRS 099	N	Valid	53	53
		Missing	0	0
	Mean		24.88	18.75
	Std. Deviation		7.216	10.288
	Percentiles	25	20.00	12.00
		50	26.00	20.00
		75	30.50	26.00
Non-Contextualized CRS 099	N	Valid	236	236
		Missing	0	0
	Mean		21.35	13.47
	Std. Deviation		7.519	10.122
	Percentiles	25	14.00	3.00
		50	24.00	13.00
		75	26.88	21.38

Findings: Inferential Statistics

Parametric *t*-tests were run to see whether the mean differences apparent in the descriptive statistics between the impact of contextualized reading curriculum and non-contextualized reading curriculum on accumulation of attempted and earned credits are statistically significant and not the result of a coincidence. The results are presented in Table 10.

Table 10: *Impact of Curriculum on Attempted and Earned Hours*

		INDEPENDENT SAMPLES TEST								
		LEVENE'S TEST FOR EQUALITY OF VARIANCES		T-TEST FOR EQUALITY OF MEANS						
		<i>F</i>	Sig.	<i>t</i>	<i>df</i>	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of Difference	
									Lower	Upper
All Credit Hours Attempted	Equal variances assumed	.744	.389	-3.105	287	.002	-3.524	1.135	-5.757	-1.290
	Equal variances not assumed			-3.188	79.409	.002	-3.524	1.105	-5.724	-1.323
All Credit Hours Earned	Equal variances assumed	.198	.657	-3.418	287	.001	-5.275	1.543	-8.312	-2.238
	Equal variances not assumed			-3.383	76.269	.001	-5.275	1.559	-8.380	-2.170

The results are as follows. The *t* statistic of -3.105, related *p* value of 0.002 (two-tailed), and confidence interval (LL = -5.757; UL = -1.290) indicate that the difference in how reading curriculum design (contextualized versus non-contextualized) impacted the number of credits attempted in the CRS 099 student’s first academic year is statistically significant. Likewise, the *t* statistic of -3.418, related *p* value of 0.001, and confidence interval (LL = -8.312; UL = -2.238) show that the reading curriculum in the first semester has a statistically significant impact on the number of earned hours accumulated in the first year.

Given that the population for this study is relatively small and the sub-cohort sizes were unequal, the data were also tested using a non-parametric measure of association—the Wilcoxon Rank-Sum Test or Mann-Whitney U test. The results are tabulated in Table 11. These non-parametric measures confirm that the CRS 099 contextualized sections attempt and earn more credits hours in a statistically significant way (with $p = 0.002$ for attempting more credit hours and $p = 0.001$ for completing more credit hours).

Table 11: *Fall 2013 CRS 099 Attempted and Earned Credit Hours – Sum of Ranks*

		RANKS		
		N	MEAN RANK	SUM OF RANKS
All Credit Hours Attempted	Non-Contextualized	236	137.75	32510.00
	Contextualized	53	177.26	9395.00
	Total	289		
All Credit Hours Earned	Non-Contextualized	236	137.53	32456.00
	Contextualized	53	178.28	9449.00
	Total	289		
		TEST STATISTICS ^a		
		ALL CREDIT HOURS ATTEMPTED	ALL CREDIT HOURS EARNED	
	Mann-Whitney U	4544.000	4490.000	
	Wilcoxon W	32510.000	32456.000	
	Z	-3.114	-3.216	
	Asymp. Sig. (2-tailed)	.002	.001	

^a Grouping Variable: Contextualized CRS Curriculum

While both parametric and non-parametric tests conducted on the data regarding credit-hour accumulation show that the positive impact of taking CRS 099 in a contextualized classroom is statistically significant, the question of whether the variance in credit hours earned by the students in contextualized sections is due more to the

greater number of credit hours attempted or to the contextualized curriculum intervention experienced in the first semester remains unanswered. In other words, it is possible that students who attempt more credit hours are simply more likely to earn more credit hours than students who do not regardless of whether they benefitted from the contextualization of curriculum. As a response to this, a regression analysis was conducted using two models. In the first model, earned credit hours were regressed on credit hours attempted. In the second model, earned credit hours were regressed on attempted hours and the CRS 099 contextualized intervention with the objective of seeing how much additional explanation of the variance can be derived. The results are tabulated in Table 12.

Table 12: *Regression Analysis on Earned Credit Hours*

MODEL SUMMARY										
MODEL	R	R SQUARE	ADJUSTED R SQUARE	STD. ERROR OF ESTIMATE	CHANGE STATISTICS					
					R SQUARE CHANGE	F CHANGE	df1	df2	SIG. F CHANGE	
1	.782 ^a	.611	.610	6.459	.611	450.900	1	287	.000	
2	.784 ^b	.614	.612	6.443	.003	2.478	1	286	.117	

^a Predictors: (Constant), All Credit Hours Attempted

^b Predictors: (Constant), All Credit Hours Attempted, Contextualized CRS Curriculum

ANOVA ^a						
MODEL		SUM OF SQUARES	df	MEAN SQUARE	F	SIG.
1	Regression	18811.662	1	18811.662	450.900	.000 ^b
	Residual	11973.717	287	41.720		
	Total	30785.379	288			
2	Regression	18914.499	2	9457.250	227.849	.000 ^c
	Residual	11870.880	286	41.507		
	Total	30785.379	288			

^a Dependent Variable: All Credit Hours Earned

^b Predictors: (Constant), All Credit Hours Attempted

^c Predictors: (Constant), All Credit Hours Attempted, Contextualized CRS Curriculum

MODEL	COEFFICIENTS ^a					COLLINEARITY STATISTICS	
	UNSTANDARDIZED COEFFICIENTS		STANDARDIZED COEFFICIENTS	t	SIG.	TOLERANCE	VIF
	B	STD. ERROR	BETA				
1 (Constant)	-9.031	1.169		-7.727	.000		
All Credit Hours Attempted	1.067	.050	.782	21.234	.000	1.000	1.000
2 (Constant)	-9.000	1.166		-7.720	.000		
All Credit Hours Attempted	1.052	.051	.771	20.656	.000	.967	1.034
Contextualized CRS Curriculum	1.567	.996	.059	1.574	.117	.967	1.034

^a Dependent Variable: All Credit Hours Earned

The regression analysis results indicate the following. Sixty-one percent (61%) of the variance (adjusted *R* square statistic) in earned credit hours is explained by the number of attempted hours. When the earned credit hours are regressed on both attempted hours variable and the contextualization variable, very little is added to the explanation (*R* square change = 0.003). On this score, it is not surprising that the number of attempted hours is a statistically significant predictor of earned credit hours ($p = 0.000$). The contextualization variable is not a significant predictor ($p = 0.117$).

Discussion of Findings

Both the descriptive data and the inferential statistical tests (parametric and non-parametric) point to the confirmation of Hypothesis 2. The curricular intervention makes a statistically significant impact on the total number of credit hours attempted and earned in the developmental reading student's first year at MWCC. Being enrolled in a contextualized CRS 099 section in the first semester is significantly associated with earning more credits than taking CRS 099 in non-contextualized sections. The results of

the regression analysis are very interesting as they suggest that the higher number of credits earned is due more to the greater number of credits attempted rather than the curricular intervention. However, the researcher believes that the regression results do not necessarily negate Hypothesis 2. It is possible that students who chose to participate in contextualized sections of CRS 099 took more credit hours in their first semester than their non-contextualized peers because they entered college with an initial sense of what they wanted to study or with a career pathway in mind. This was not influenced by the kind of curriculum they experienced in CRS 099. However, it is possible that the momentum generated by the learning experiences in contextualized CRS 099, the successes of the first semester, and the transferability of skills learned to other classes influenced students to continue in a stronger credit-hour accumulation pattern. (This will be further discussed and analyzed under Hypothesis 5 where student perceptions of their contextualized experiences are considered.) In other words, students who participated in the contextualized sections of CRS 099 were more likely to attempt more credit hours. That they did so entailed that they also accumulated a larger number of earned credit hours than their CRS 099 peers who were in non-contextualized sections.

HYPOTHESIS 3 – FINDINGS AND ANALYSIS

Hypothesis 3 states that students who take developmental reading in sections with contextualized curriculum will complete more college-level content courses in their first and second semesters (fall 2013 and spring 2014) than developmental reading peers in non-contextualized sections.

Findings: Descriptive Statistics

Descriptive data, as summarized in Table 13, show that contextualized CRS 099 students took and passed more college-level courses than students in non-contextualized CRS 099 students. Passed is defined as earning a D or better grade.

Table 13: *Comparing Number of College Courses Attempted and Passed*

STATISTICS					
FALL 2013 CRS 099		N_COLLEGE_CRSES			
		ATTEMPTED		PASSED	
.00 Non-Contextualized	N	Valid	236	190	
		Missing	0	46	
	Mean		2.0932	1.5263	
	Std. Deviation		1.65279	1.51774	
	Percentiles	25		1.0000	0.0000
		50		2.0000	1.0000
		75		3.0000	2.0000
1.00 Contextualized	N	Valid	53	49	
		Missing	0	4	
	Mean		3.5849	2.7143	
	Std. Deviation		1.97517	2.11148	
	Percentiles	25		2.0000	1.0000
		50		4.0000	2.0000
		75		5.0000	5.0000

The histograms in Figures 2 to 5 visually depict the differences in college-level course taking patterns and college-level course completions (that is, passing with a D grade or higher) between students in contextualized CRS 099 sections and those in non-contextualized CRS 099 sections. Students who experienced the contextualized intervention attempted more and earned more college-level courses.

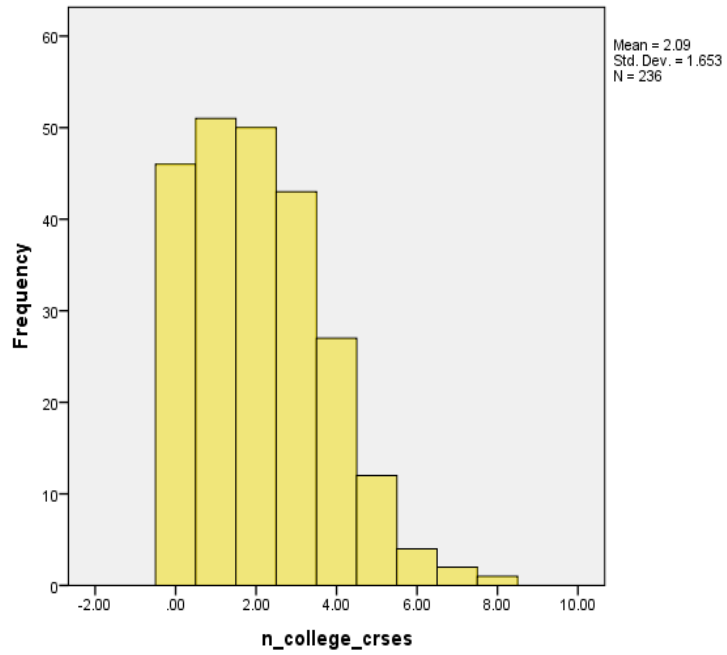


Figure 2. Non-Contextualized CRS 099 Students – College-Level Courses Attempted in Fall 2013 to Spring 2014.

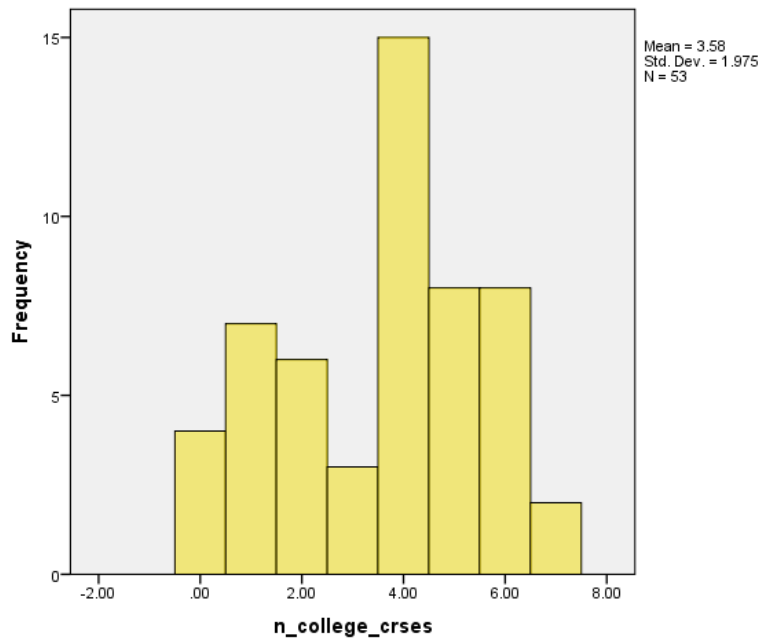


Figure 3. Contextualized CRS 099 Students – College-Level Courses Attempted in Fall 2013 to Spring 2014.

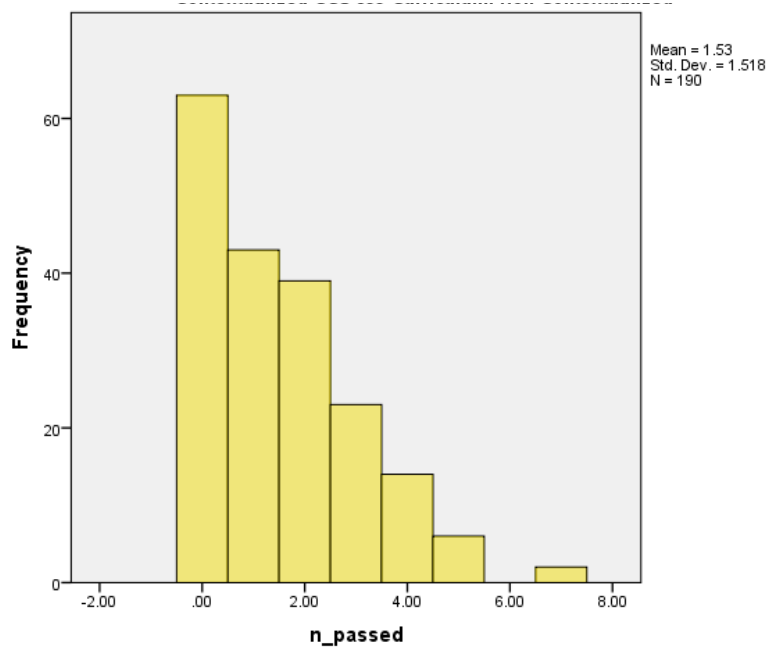


Figure 4. Non-Contextualized CRS 099 Students – College-Level Courses Passed in Fall 2013 to Spring 2014.

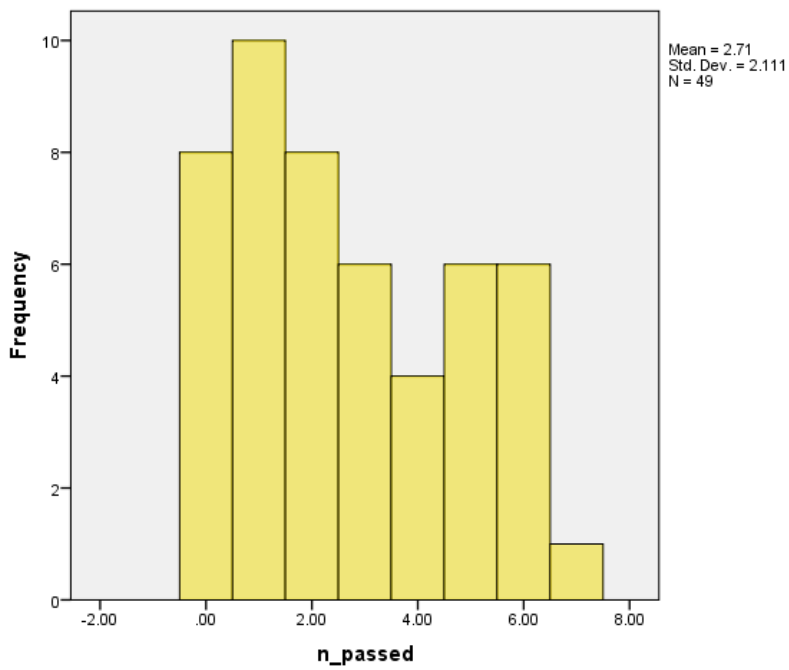


Figure 5. Contextualized CRS 099 Students – College-Level Courses Passed in Fall 2013 to Spring 2014.

Findings: Associational and Inferential Statistics

The results of a regression analysis as represented in Table 14 affirm the descriptive data: taking developmental reading in a contextualized section had a greater impact on the number of college-level courses that a student enrolled in than taking reading in a non-contextualized section. The Adjusted *R* Square statistic = .099 and *p* = .000 indicates that this is statistically significant.

Table 14: *Impact of Contextualized Curriculum on Course-Taking Patterns by Developmental Reading (CRS 099) Students*

MODEL SUMMARY									
MODEL	<i>R</i>	<i>R</i> SQUARE	ADJUSTED <i>R</i> SQUARE	STD. ERROR OF THE ESTIMATE	CHANGE STATISTICS				
					<i>R</i> SQUARE CHANGE	<i>F</i> CHANGE	<i>df</i> 1	<i>df</i> 2	SIG. <i>F</i> CHANGE
1	.320 ^a	.102	.099	1.71570	.102	32.716	1	287	.000

^a Predictors: (Constant), Contextualized CRS Curriculum

ANOVA ^a						
MODEL		SUM OF SQUARES	<i>df</i>	MEAN SQUARE	<i>F</i>	SIG.
1	Regression	96.304	1	96.304	32.716	.000 ^b
	Residual	844.817	287	2.944		
	Total	941.121	288			

^a Dependent Variable: *n_college_crse*

^b Predictors: (Constant), Contextualized CRS Curriculum

COEFFICIENTS ^a								
MODEL		UNSTANDARDIZED COEFFICIENTS		STANDARDIZED COEFFICIENTS		COLLINEARITY STATISTICS		
		B	STD. ERROR	BETA	<i>t</i>	SIG.	TOLERANCE	VIF
1	(Constant)	2.093	.112		18.743	.000		
	Contextualized CRS Curriculum	1.492	.261	.320	5.720	.000	1.000	1.000

^a Dependent Variable: *n_college_crse*

However, as in Hypothesis 2, it is important to note that while contextualized CRS 099 is clearly associated with the higher enrollment in college-level courses, it is not possible to claim the association between contextualized CRS 099 and completing (that is, passing with a D grade or higher) a higher number of college-level courses. The regression analysis in Table 15 used two models. In the first model, the number of college-level courses completed was regressed on the number of college-level courses attempted. In the second model, the number of completed college courses was regressed on the number taken and the CRS 099 intervention. The results tabulated show that there is negligible additional explanation of the variance by adding the CRS intervention in the second model. There is a 30% probability that the association between taking CRS 099 and completing more college courses is the result of chance.

Table 15: *Relationship Between Contextualization and Completion of College-Level Courses*

MODEL SUMMARY									
MODEL	R	R SQUARE	ADJUSTED R SQUARE	STD. ERROR OF THE ESTIMATE	CHANGE STATISTICS				
					R SQUARE CHANGE	F CHANGE	df1	df2	SIG. F CHANGE
1	.727 ^a	.528	.526	1.18417	.528	265.290	1	237	.000
2	.728 ^b	.530	.526	1.18404	.002	1.052	1	236	.306

^a Predictors: (Constant), n_college_crse

^b Predictors: (Constant), n_college_crse, Contextualized CRS Curriculum

ANOVA ^a						
MODEL		SUM OF SQUARES	df	MEAN SQUARE	F	SIG.
1	Regression	372.007	1	372.007	265.290	.000 ^b
	Residual	332.336	237	1.402		
	Total	704.343	238			
2	Regression	373.482	2	186.741	133.201	.000 ^c
	Residual	330.861	236	1.402		
	Total	704.343	238			

^a Dependent Variable: n_passed

^b Predictors: (Constant), n_college_crse

^c Predictors: (Constant), n_college_crse, Contextualized CRS Curriculum

COEFFICIENTS ^a								
MODEL		UNSTANDARDIZED COEFFICIENTS		STANDARDIZED COEFFICIENTS		COLLINEARITY STATISTICS		
		B	STD. ERROR	BETA	t	SIG.	TOLERANCE	VIF
1	(Constant)	-.479	.158		-3.034	.003		
	n_college_crse	.786	.048	.727	16.288	.000	1.000	1.000
2	(Constant)	-.473	.158		-2.991	.003		
	n_college_crse	.769	.051	.711	15.073	.000	.894	1.118
	Contextualized CRS Curriculum	.206	.201	.048	1.026	.306	.894	1.118

^a Dependent Variable: n_passed

Discussion of Findings

Based on the foregoing descriptive statistics and results of regression, it is reasonable to conclude that the contextualized curriculum intervention positively impacts the college-level course taking pattern of CRS 099 level students. Students in the contextualized sections take more college-level courses than those in non-contextualized sections. Taking more college-level courses is in turn associated with the greater number of college course completions. The data affirms Hypothesis 3.

HYPOTHESIS 4 – FINDINGS AND ANALYSIS

Hypothesis 4 states that students who take developmental reading in sections with contextualized curriculum will persist to the second year at a higher rate than developmental reading peers in non-contextualized sections. A two-step process was adopted in testing this hypothesis. Data relating to fall-to-spring (fall 2013 to spring 2014) persistence were first examined. This was followed by data on fall-to-fall persistence (fall 2013 to fall 2014).

Findings: Descriptive Statistics – Fall-to-Spring Persistence

Table 16 summarizes the fall-to-spring persistence data. The data are coded in the following way. The code n_CID is used to denote the number of Colleague⁴ student identifier records. A student who enrolled only in fall semester 2013 was coded as n_CID

⁴ Colleague is the name of the ERP (enterprise resource planning software) used at Middle West Community College

=1 and a student who enrolled in fall semester 2013 and spring semester 2014 was coded as n_CID=2.

Table 16: *CRS 099 Fall-to-Spring Persistence (Fall 2013 to Spring 2014)*

CRS 099	N_CID				TOTAL
	n_CID = 1		n_CID = 2		
	N	Row %	N	Row %	
Non-Contextualized	57	24.2	179	75.8	236
Contextualized	9	17.0	44	83.0	53
Total	66	22.8	223	77.2	289

Students who took CRS 099 in contextualized curriculum sections in fall 2013 returned the following semester (spring 2014) at a higher rate. Eighty-three percent (83%) of the contextualized sub-cohort students registered for spring semester classes in contrast to the 76% of the non-contextualized sub-cohort. According to college archival data from FY 2000 to FY 2013, students who begin at MWCC in the fall semester with either developmental reading or developmental writing placements return for spring semester classes at the average rate of 77%. At this descriptive level, it appears that the fall-to-spring persistence outcomes for students in non-contextualized sections reflect the college’s developmental student norm while the persistence for students in contextualized sections exceeds the expectations.

The same information can also be expressed in terms of odds and odds ratios (see Table 17). The odds that students in contextualized sections would persist into spring are $44/9 = 4.89$ while the odds of next-term persistence for students in non-contextualized sections are $179/57 = 3.14$. The odds ratio is $4.89/3.14 = 1.56$, meaning

that the odds of students experiencing the contextualized intervention returning the following spring are 1.56 times greater than peers in non-contextualized sections. The odds ratios calculation is reflected in Table 17.

Table 17: *CRS 099 Fall-to-Spring Persistence – Odds Ratio*

	RISK ESTIMATE		
	VALUE	LOWER	UPPER
Odds Ratio for Contextualized/Non-contextualized CRS 099 Curriculum	1.557	.716	3.384
For cohort n_CID = 1	1.422	.752	2.689
For cohort n_CID = 2	.914	.793	1.052
N of Valid Cases	289		

Findings: Associational and Inferential Statistics

Given that the independent variable (the curriculum design in CRS 099) and dependent variables (the fall-to-spring persistence) in Hypothesis 4 are both categorical and that Hypothesis 4 poses a bivariate problem, a chi-square test was run to test relative frequencies to see whether term-to-term persistence is contingent on the curriculum design or whether they are independent of each other (see Tables 18 and 19).

Table 18: CRS 099 Fall 2013 to Spring 2014 Persistence Rates – Contingency Table of Observed and Expected Frequencies

	NON-CONTEXTUALIZED		CONTEXTUALIZED		TOTAL
Persisted	Observed	179	Observed	44	223
	Expected	182.2	Expected	40.9	
Did not persist	Observed	57	Observed	9	66
	Expected	53.8	Expected	12.1	

Table 19: Chi-square Tests on Fall-to-Spring Persistence

CHI-SQUARE TESTS					
	VALUE	df	ASYMP. SIG. (2-SIDED)	EXACT SIG. (2-SIDED)	EXACT SIG. (1-SIDED)
Pearson Chi-square	1.263 ^a	1	.261		
Continuity Correction ^b	.889	1	.346		
Likelihood Ratio	1.333	1	.248		
Fisher's Exact Test				.365	.173
Linear-by-Linear Association	1.259	1	.262		
N of Valid Cases	289				

^a 0 cells (.0%) have expected count less than 5. The minimum expected count is 12.10.

^b Computed only for a 2x2 table

SYMMETRIC MEASURES					
		VALUE	ASYMP. STD. ERROR ^a	APPROX. T ^b	APPROX. SIG.
Nominal by Nominal	Phi	.066			.261
	Cramer's V	.066			.261
	Contingency Coefficient	.066			.261
Interval by Interval	Pearson's R	.066	.054	1.122	.263 ^c
Ordinal by Ordinal	Spearman Correlation	.066	.054	1.122	.263 ^c
N of Valid Cases		289			

^a Not assuming the null hypothesis.

^b Using the asymptotic standard error assuming the null hypothesis.

^c Based on normal approximation.

According to the chi-square test results, the apparent higher rate of persistence of students in contextualized sections is not statistically significant (Pearson chi-square ($df = 1$) = 1.263, $p = 0.26$). The strength of the relationship denoted by $\Phi = 0.066$ is weak. This result indicates that additional data are needed to reach a more conclusive statement about the observed differences between the sub-cohorts in relation to fall-to-spring persistence. Using a G*Power post-hoc power analysis, this test had only a power of 0.38.

Findings: Descriptive Statistics – Fall-to-Fall Persistence

The data summarized in Table 20 show that the two CRS 099 sub-cohorts essentially persisted from fall 2013 to fall 2014 at about the same levels, around 51%. According to college archival data from FY 2000 to FY 2013, students who begin at MWCC in the fall semester with either developmental reading or developmental writing placements return the following fall semester at the average rate of 48.3%. (MWCC students who begin college-ready in reading and writing return at the rate of 66.8% for the second year.) It appears that the fall 2013 CRS 099 students on the whole persisted at a slightly higher rate. But the increase of 2.7% in year-to-year persistence cannot be attributed to the introduction of contextualized curriculum.

Table 10: *CRS 099 Fall to Fall Persistence (Fall 2013 to Fall 2014)*

CRS 099	DID NOT PERSIST		PERSISTED		TOTAL
	COUNT	ROW TOTAL N%	COUNT	ROW TOTAL N%	
Non-Contextualized	115	48.7	121	51.3	236
Contextualized	26	49.1	27	50.9	53
Total	141	48.8	148	51.2	289

Table 21 below disaggregates the persistence rates of the contextualized students by CRS 099 section. Each section is named according to the career program/major that the curriculum was linked to.

Table 11: *Contextualized CRS 099 Persistence Disaggregated by Sections*

CRS 099	FALL-TO-SPRING PERSISTENCE				FALL-TO-FALL PERSISTENCE			
	.00 DID NOT PERSIST		1.00 FALL-TO-SPRING PERSIST		.00 DID NOT PERSIST		1.00 FALL-TO-FALL PERSIST	
	N	Row %	N	Row %	N	Row %	N	Row %
Health Professions	1	11.1	8	88.9	5	55.6	4	44.4
Business	1	10.0	9	90.0	3	30.0	7	70.0
Criminal Justice	2	18.2	9	81.8	6	54.5	5	45.5
Automotive Technology	5	38.5	8	61.5	8	61.5	5	38.5
Diesel Power Equipment	0	0.0	10	100.0	4	40.0	6	60.0
Total	9	17.0	44	83.0	26	49.1	27	50.9

Business majors and diesel power equipment students had higher fall-to-spring and fall-to-fall persistence than other contextualized CRS 099 students. Automotive Technology students showed the weakest persistence rate.

Discussion of Findings

The descriptive data clearly show that students who experience the contextualization intervention returned for the next semester (spring 2014) at a higher rate. The chi-square test indicated that the association between the intervention and next-term persistence outcomes is not statistically significant. As discussed earlier, the smaller size of the cohort/sub-cohorts in this study means that statistical significance of $p = <.05$ cannot be achieved. In fact, the probability that the better next-term persistence outcomes by contextualized students could occur by chance is very high at $p = .26$. Nonetheless, when the apparent next-term persistence increases (descriptive data) is taken together with the data supporting the previous hypotheses, the case that contextualized curriculum shows definite promise in its ability to effect better outcomes should be considered.

However, the momentum displayed by the contextualized group in next-term persistence (fall 2013 to spring 2014) seemed to dissipate over the summer between the end of spring semester and the start of fall semester. Contextualized students did not return at a rate any higher than students who had not had the benefit of the contextualized curriculum classroom experience. This suggests any momentum towards persistence arising from the contextualized experience and associated successful outcomes (completion of developmental reading requirements, earning more credit hours, completing more college-level credits) requires other interventions if it is to be sustained beyond the first year. What these interventions could be will be considered in

the last section of this chapter following the analysis of findings in relation to Hypothesis 5.

The fall-to-fall persistence data disaggregated according to contextualized sections (Table 21) show that students in the Business and Diesel Power Equipment students returned at rates much higher (70% and 60%, respectively) than their contextualized reading peers. In fact, their measures on this outcome brought up the average for the sub-cohort. Students in the Automotive Technology section did the worst on this measure, returning only at 38.5%. The data collected for the study do not shed light on the observed variations in return rates. The small numbers in each section also prevent generalizing beyond what is observed. It is possible that initial placement scores indicating academic readiness for college and membership in a career program cohort (for Diesel Power Equipment students) play a role in student decisions to return. More and different data will need to be collected, but this may be a natural next step in research on the outcomes of students taking contextualized reading sections.

IMPACT ON LOW-INCOME STUDENTS

A high proportion of students in CRS 099 were low-income, based on their Pell-eligibility status: 57% of students in the contextualized sub-cohort and 66% of the students in non-contextualized sections received Pell grants. Tables 22 and 23 summarize descriptive data relating to the impact of curricular design on the outcomes of Pell students in contextualized and non-contextualized sections.

Table 12: *Course Success Rates of Pell-Eligible CRS 099 Students*

SUCCESS RATES IN CRS 099 BY CURRICULAR DESIGN AND PELL STATUS						
PELL ELIGIBLE CRS 099 STUDENTS	COURSE SUCCESS RATE (C GRADE OR BETTER)					
	.00 D/F/W		1.00 C OR BETTER		TOTAL	
	<i>N</i>	Row %	<i>N</i>	Row %	<i>N</i>	Row %
Non-Contextualized	66	42.6	89	57.4	155	100.0
Contextualized	9	30.0	21	70.0	30	100.0

Table 23: *Grade Distribution of Pell-Eligible CRS 099 Students*

GRADES	CRS 099			
	.00 NON-CONTEXTUALIZED		1.00 CONTEXTUALIZED	
	<i>N</i>	%	<i>N</i>	%
A	28	18.1	4	13.3
B	30	19.4	10	33.3
C	31	20.0	7	23.3
D	7	4.5	3	10.0
F	27	17.4	4	13.3
S Satisfactory	0	0.0	0	0.0
U Unsatisfactory	0	0.0	0	0.0
W	32	20.6	2	6.7
Total	155	100.0	30	100.0

Among Pell-eligible CRS 099 students, in terms of relative risk, students who took CRS 099 in contextualized sections are 22% more likely to pass CRS 099 with a C grade or higher. Although MWCC defines success and completion of reading requirements in terms of a grade of C or better in CRS 099, it is important to note that Financial Aid Satisfactory Academic Progress (SAP) criteria define success in terms of completion with a grade D or better. Using SAP criteria, 80% of CRS 099 students (Pell-eligible) in contextualized sections completed CRS 099 as opposed to 62% of CRS students (Pell-

eligible) in non-contextualized sections. Students receiving Pell grants are 29% more likely to complete CRS 099 in contextualized sections than in non-contextualized sections.

Tables 24 and 25 summarize the average number of attempted and earned hours in fall semester 2013 and spring semester 2014. Students with Pell status in contextualized sections attempted more and thus earned more hours than students in non-contextualized sections.

Table 24: *Attempted vs. Earned Hours Among CRS 099 Pell-Eligible Students (Fall 2013)*

FALL SEMESTER 2013		STATISTICS		
			TERM CREDIT HOURS ATTEMPTED	TERM CREDIT HOURS EARNED
.00 Non- Contextualized	N	Valid	155	155
		Missing	0	0
	Mean		12.1355	7.42
	Std. Deviation		2.38319	5.280
	Percentiles	25	12.0000	2.50
		50	12.0000	8.50
		75	13.0000	12.00
1.00 Contextualized	N	Valid	30	30
		Missing	0	0
	Mean		13.3333	10.67
	Std. Deviation		2.84464	5.707
	Percentiles	25	12.0000	8.25
		50	13.0000	12.00
		75	15.0000	14.00

Table 25: *Attempted vs. Earned Hours Among CRS 099 Pell-Eligible Students (Fall 2013-Spring 2014)*

CRS 099 PELL-ELIGIBLE STUDENTS			2013FA - 2014SP ALL CREDIT HOURS ATTEMPTED	2013FA - 2014SP ALL CREDIT HOURS EARNED
.00 Non-Contextualized	N	Valid	117	117
		Missing	0	0
	Mean		24.28	16.00
	Std. Deviation		4.898	9.241
	Percentiles	25	22.00	9.00
		50	25.00	17.00
75		27.00	24.00	
1.00 Contextualized	N	Valid	25	25
		Missing	0	0
	Mean		25.40	19.20
	Std. Deviation		5.781	8.078
	Percentiles	25	21.50	13.50
		50	27.00	20.00
75		30.00	24.50	

Note. Includes only students who persisted into Spring Semester 2014.

The data for fall-to-spring (next term) persistence indicate that Pell students in contextualized CRS 099 sections returned at a higher rate than peers in non-contextualized CRS 099 sections: 83.3% as opposed to 75.5%. As for fall-to-fall persistence, it has already been noted that students in contextualized CRS 099 sections in general did not return in the second year at rates higher than students in non-contextualized CRS 099 sections. When the students are disaggregated by Pell status, the data show that Pell students in contextualized sections persisted with marginally better rates than Pell students in regular CRS 099 sections: 46.7% as opposed to 43.5%.

As with the comparisons between all students in contextualized and non-contextualized sections, the descriptive data indicate that Pell recipients in contextualized sections performed better throughout their first academic year. However, the momentum gained through the initial year of success was insufficient to make a difference in year-to-year persistence.

IMPACT ON BLACK STUDENTS

Black students made up 40% of the students in the fall 2013 CRS 099 cohort. They accounted for 41.1% of students in the non-contextualized sections and 35.8% of students in the contextualized sub-cohort (see Table 2). As previously noted, given that the overall percentage of black students among first-time credit students in fall 2013 is 28.5%, black students were overrepresented in developmental reading. This reflects demographic trends among students who place into developmental coursework at MWCC. Disaggregated descriptive data on the impact of contextualized/non-contextualized curriculum on the outcomes of black students in CRS 099 are presented in Tables 26 and 27.

Table 26: *Course Success Rates of CRS 099 Students by Ethnicity*

SUCCESS RATES IN CRS 099 BY CURRICULAR DESIGN AND ETHNICITY							
PRIMARY ETHNIC/RACIAL CLASSIFICATION		COURSE SUCCESS RATE (C GRADE OR BETTER)					
		.00 D/F/W		1.00 C OR BETTER		TOTAL	
		Row					
		N	%	N	Row %	N	Row %
1 Asian	.00 Non-Contextualized	2	66.7	1	33.3	3	100.0
	1.00 Contextualized	0	0.0	1	100.0	1	100.0
2 American Indian or Alaska Native	.00 Non-Contextualized	1	50.0	1	50.0	2	100.0
	1.00 Contextualized	0	0.0	1	100.0	1	100.0
3 Black or African American	.00 Non-Contextualized	44	45.4	53	54.6	97	100.0
	1.00 Contextualized	7	36.8	12	63.2	19	100.0
4 Hispanic or Latino	.00 Non-Contextualized	7	70.0	3	30.0	10	100.0
	1.00 Contextualized	2	66.7	1	33.3	3	100.0
5 White	.00 Non-Contextualized	32	34.4	61	65.6	93	100.0
	1.00 Contextualized	6	25.0	18	75.0	24	100.0
6 Nonresident Alien	.00 Non-Contextualized	0	0.0	0	0.0	0	0.0
	1.00 Contextualized	0	0.0	0	0.0	0	0.0
7 Native Hawaiian/ Other Pacific Islander	.00 Non-Contextualized	0	0.0	0	0.0	0	0.0
	1.00 Contextualized	0	0.0	0	0.0	0	0.0
8 Unknown	.00 Non-Contextualized	13	41.9	18	58.1	31	100.0
	1.00 Contextualized	0	0.0	5	100.0	5	100.0

In terms of pass rates, black students in the contextualized CRS 099 sub-cohort performed better than their demographic peers in non-contextualized CRS 099 sub-cohort. Black students in contextualized CRS 099 had a pass rate of 63.2% in comparison to a black student pass rate of 54.6% in non-contextualized sections. In terms of relative

risk, black students in contextualized sections are 16% more likely to pass than black students in non-contextualized sections.

The grade distribution data in Table 27 repeat the information given above regarding the course pass rates of grade C or better. In addition, the table shows that black students were far more likely to remain enrolled even when they may not be on track to pass with at least a C grade. Contextualized sections saw a much higher percentage of D grades and lower percentage of withdrawals (W grades). D grades are regarded as course completion and count positively for continued federal financial aid eligibility.

Table 27: *Grade Distribution of Black Students in CRS 099*

GRADE DISTRIBUTION OF BLACK STUDENTS IN CRS 099				
GRADES	CRS 099			
	.00 NON-CONTEXTUALIZED		1.00 CONTEXTUALIZED	
	N	%	N	%
A	13	13.4	1	5.3
B	17	17.5	6	31.6
C	23	23.7	5	26.3
D	3	3.1	3	15.8
F	16	16.5	3	15.8
S Satisfactory	0	0.0	0	0.0
U Unsatisfactory	0	0.0	0	0.0
W	25	25.8	1	5.3
Total	97	100.0	19	100.0

Tables 28 and 29 summarize the average number of attempted and earned hours in fall semester 2013 and spring semester 2014 for black CRS 099 students. Black students in contextualized sections attempted more and thus earned more hours than students in non-contextualized sections. Of note is the difference in hours earned in the

bottom quartile of students. It is possible that the contextualized intervention enhanced course retention among weaker minority students.

Table 28: *Attempted vs. Earned Hours by Black Students in CRS 099 (Fall 2013)*

BLACK OR AFRICAN AMERICAN – FALL SEMESTER 2013		STATISTICS		
			TERM CREDIT HOURS ATTEMPTED	TERM CREDIT HOURS EARNED
.00 Non-Contextualized	N	Valid	97	97
		Missing	0	0
	Mean		11.9639	6.69
	Std. Deviation		2.47198	5.148
	Percentiles	25	12.0000	2.00
		50	12.0000	6.00
		75	13.0000	12.00
1.00 Contextualized	N	Valid	19	19
		Missing	0	0
	Mean		12.3158	9.68
	Std. Deviation		2.33459	4.978
	Percentiles	25	11.0000	6.00
		50	13.0000	11.00
		75	14.0000	13.00

Table 13: *Attempted vs. Earned Hours among CRS 099 Black Students (Fall 2013-Spring 2014)*

BLACK OR AFRICAN AMERICAN		STATISTICS		
			2013FA–2014SP ALL CREDIT HOURS ATTEMPTED	2013FA–2014SP ALL CREDIT HOURS EARNED
.00 Non-Contextualized	N	Valid	72	72
		Missing	0	0
	Mean		23.97	14.22
	Std. Deviation		5.151	9.187
	Percentiles	25	22.13	6.00
		50	24.50	13.00
75		26.38	20.88	
1.00 Contextualized	N	Valid	15	15
		Missing	0	0
	Mean		24.60	15.93
	Std. Deviation		6.010	7.045
	Percentiles	25	21.00	11.00
		50	27.00	16.00
75		28.00	21.00	

Note. Includes only students who persisted into Spring Semester 2014.

Black students in contextualized sections of CRS 099 showed better rates of persistence than peers in non-contextualized sections as seen in Table 30. There is a gap when black student persistence is compared to the cohort as a whole, but the contextualized intervention appears to mitigate the outcomes gap. Black students in the non-contextualized sections returned at the lowest rate. But this is not inconsistent with the MWCC fall-to-fall persistence average (FY 2000 to FY 2013) of 34.5% for all black first-time degree-seeking students entering the college in the fall semester.

Table 14: *Persistence Rates of Black Students in CRS 099*

			CRS 099 PERSISTENCE			
			NON-CONTEXTUALIZED		CONTEXTUALIZED	
			<i>N</i>	%	<i>N</i>	%
Fall-to-Spring Persistence	Black students	Persisted	72	74.2	15	78.9
		Did not persist	25	25.8	4	21.1
		Total	97	100.0	19	100.0
	All ethnicities	Persisted	179	75.8	44	83.0
		Did not persist	57	24.2	9	17.0
		Total	236	100.0	53	100.0
Fall-to-Fall Persistence	Black students	Persisted	36	37.1	8	42.1
		Did not persist	61	62.9	11	57.9
		Total	97	100.0	19	100.0
	All ethnicities	Persisted	121	51.3	27	50.9
		Did not persist	115	48.7	26	49.1
		Total	236	100.0	53	100.0

Based on the descriptive data, it appears that the contextualized intervention promises to effect better outcomes among black students who place into CRS 099. The achievement gap between black students and white students is not eradicated but clearly diminished.

HYPOTHESIS 5 – FINDINGS AND ANALYSIS

Hypothesis 5 states that students who take developmental reading in sections with contextualized curriculum will report an increase in their academic engagement, motivation, and confidence. Qualitative data to test this hypothesis were collected through focus group interviews with students who take contextualized sections of CRS 099. Invitations to students were sent out through emails and by phone. They were

asked to participate in focus group interviews on April 23, April 24, and May 8, 2014 to reflect on their experiences in the contextualized reading classroom. Using a semi-structured approach, the researcher asked the following questions to elicit student perceptions on their experiences. The objective behind each question is indicated in italics.

1. Think back to the time when you chose classes for fall semester 2013. Why did you decide to take CRS 099 with students who had the same career or major aspirations as you?
Question objective: To understand why students might select a contextualized section over a traditional non-contextualized section.
2. Describe some of the things (strategies, skills, ideas) you learned in CRS 099. In your experience, how did these lessons help you as a student? In what ways, if any, did these lessons help you with classes in your major?
Question objective: To better understand student perceptions of the usefulness and/or relevance of a contextualized skills class and whether transfer of skills occurred.
3. Your CRS 099 class was designed for you to be with students who shared the same academic/career interests. The learning activities were planned to be relevant to these interests. How did this affect your motivation as a student in CRS and your performance in the class?
Question objective: To better understand the impact of contextualized curriculum on motivation and how this motivation, if any, is connected with effort and student outcomes.
4. How well did CRS 099 prepare you for taking a college-level course in your career program or major this semester?
Question objective: To better understand student perceptions of satisfactory preparation for college-level coursework and how such perceptions relate to student perception of confidence.
5. Would you recommend that new CRS 099 students take a section that is connected to their chosen career program or major? Why or why not?
Question objective: To draw forth other relevant information that prior questions may not have tapped into.

Ten students responded to the invitations to participate in focus group interviews. They made up 19% of the contextualized curriculum cohort. Their responses are organized under themes emerging from the answers to each question.

Choosing to Take Contextualized CRS 099

Students were asked why they chose to take a reading class “with students who had the same career or major aspirations.” Three major themes emerge from their answers. It is noted that the student answers intertwine reasons for selecting a contextualized version of CRS 099 with comments about experienced benefits. The latter are included as they basically affirm the students’ original decision. The first theme has to do with the students’ perception of the importance of the social dimension in the learning environment. The idea of studying with peers who “have the same aspirations,” are “sharing things in common,” and are “basically in the same area as me” resonated strongly with the students when the choice of a class with contextualized curriculum was presented by the advisor.

I liked choosing the same class as other people who have the same aspirations. In health professions, you need the terminology. . . . Other (classes) aren’t sharing things in common. It was cool; we formed study groups according to what we were studying.

The social context for learning is closely connected with a context conducive for forming relationships. Developing relationships seem as important, if not more, than learning among people who share similar academic and vocational interests. Students starting college without peers are sometimes afraid of being alone and without a social network

of support. The idea of a class with students who have things in common presented the promise of friendships, moral support, and guidance.

It just made sense to pick a class with people who had the same interests as I did. So maybe when I made friends in the class it would give me direction, clues on what to do. What class are you taking? Where are you transferring to? Stuff like that. What are your interests?

I based my decision on . . . I haven't always been great with a lot of different people—conversating [sic] with a lot of different people. When my advisor said I'd be in this group . . . we're going into the same career, even if you're going into law and I'm going into criminal justice. If I'm taking a class and they aren't, I get some insight into what I should take.

It's not easy to build relationships with other people, when they aren't in the same area.

The second major reason for choosing a contextualized section of CRS 099 was the potential relevance of the curriculum to a declared academic major or career aspiration. There was a strong sense that learning skills and content that could have applicability in the future is important. The students use words and phrases like *benefits*, *beneficial*, *helpful*, and *a good idea* to capture their reflections.

I think it's the . . . first step with my process for business. I want to get some concept that focused me on my major. That is why I chose CRS 099. It was helpful. Because it was mixed . . . my English and some concepts in economics. I remember she teach [sic] us how to sell ourselves, like a brand. It was very helpful.

The third reason for choosing a contextualized version of CRS 099 was that someone, typically an advisor, explicitly extended an invitation with an explanation of potential benefits. The choice thus presented “sounded like a good idea.”

Perceptions of Relevance and Transfer of Skills

One major theme emerging from the student responses to the second question is that the students believed that contextualized CRS 099 introduced a set of strategies and skills that they found useful in college-level courses. They made specific references to strategies and skills learned. They embedded their references to these skills in the context of using them outside of CRS 099 in college-level courses, courses that were directly related to their chosen career program or transfer major as well as ENG 101 Composition I which is a standard general education requirement for all MWCC degree-granting programs. The resounding enthusiasm with which the students responded to this question is noted. The answers were not given just as matter-of-fact declarative statements. The tone in which the answers were delivered reflected a deep-seated appreciation of what was learned in CRS 099 and an excitement about the transferability of skills acquired. These focus-group interviews took place almost five months after the completion of contextualized CRS 099 but the students were able to name CRS 099 strategies, skills, and concepts without prompting.

The students named and described the following CRS 099 strategies and/or skill development practices as helpful and useful for college coursework.

- Annotation
- Highlighting
- Chunking
- Practice of skills (time on task)
- Vocabulary building

- Summary writing
- Selecting the most important ideas in an article
- Strategies to improve reading comprehension
- Note-taking skills
- Basics of essay writing
- Strategies to overcome writer's block
- Major-relevant topics in reading and writing assignments
- Life and educational planning – perspectives and practices that prepare for success in future academic major or career

The students' affirmation that the contextualized course provided skills that transfer into classes required for program completion was unambiguous. They were able to vividly recall actual situations of how the strategies were taught or how they could be or were being applied. This is how several of the students described their experiences in relation to the transfer of skills and strategies.

Annotation: I have to say, annotating. I didn't know how much it helps, it helps so much with my PSY class. In class, when he gives a review, it is so much easier if we can annotate. I love (CRS instructor).

Note cards: Because I'm going into medical careers, the note cards were helpful. You need all the terminology . . . with nursing, you are the one who is going to be doing all the work. (The instructor) had us do cards . . . kind of like anatomy. The next semester, it was like, this is just review for me.

Summaries: The strategies, skills, and ideas helped with writing papers, being persuasive . . . also summaries. Describe things, and that is what really helped me with BUS 101 and ENG 101, because now the papers are longer. It helped my reading comprehension. Some of the readings are challenging – they do not make it easy for you.

Summaries and main idea identification: We learned a lot about writing summaries and how to pick out the most important things out of what we were reading. Not necessarily to ignore the not-important things, but . . . try to concentrate on what the article was on, what the article was really trying to get to. I've found it helpful now in my English class, because – we're writing a research paper – so I'm using a lot of sources - I'm going to be able to read through them now – actually pick out what the article is really trying to say.

Note-taking skills: The note-taking skills that we learned in the CRS class were very helpful, because now they just talk, talk, talk. (*Laughter*) You can't write everything down. The way (the instructor) taught us was pretty helpful. How to get out the key information.

Study skills: In the class I was in, we went over the chemistry book, and that has been a lot of help. Because we would go over the things in that class, and so now I'm in (CHE) 106 and it has helped me a lot. . . . (The instructor) had us do at the end these extra questions for it. And so we had to do that. Now it has helped me a lot to understand the class I'm in right now . . . I don't think I would have been able to do it.

Transfer of skills into college-level classes was referenced in 10 out of the 19 responses to this question. The relevance of the skills learned was clearly important to the students as reflected in their excitement that these CRS skills continued to have a place in the academic aspects of their lives.

Two responses to this question underscored the relational dimension of the teaching-learning interaction. One comes from a student who appeared a little shy and somewhat overshadowed by the eagerness of other participants in the focus group. But when given the opportunity, he added his positive experience in the class to what the focus-group participants had already said. He made the following statement in the context of his challenges in writing and responding to readings outside of his one favorite topic: "Since I love cars, I can talk someone's ear off on cars. But (the instructor) is great with appreciating what you write." The instructor's affirmation of what he wrote

continued to mean much to him. The other comes from two other students who told of their appreciation of the CRS 099 (contextualized) instructor. One said, “I love (the instructor)” to which a student from a different class responded, “I think we all loved our 099 teacher.” The nods around the table, the non-verbal gestures of agreement, underscored the human dimension of teaching: students responded to what was taught because they saw the instructor as one who cared that they learned, applied, and transferred skills, and that they found success in doing so. This connects with the major emergent theme from the first question: relationships—with peers in the classroom as well with the instructor—play a dominant role in the success of students who begin college with developmental course work placements. The perception of connections (or the absence of connections) makes a difference in student outcomes.

Impact on Motivation

Motivation is a key non-cognitive factor in student persistence and success. In college, motivation inspires students to put in effort, to sustain effort over time, and to persist in face of obstacles. It helps students to keep their eyes on the prize, whether it be their grade point average, entry into a selective admissions program, transfer, or earning a credential. As the students in the focus groups reflected on their experiences in the contextualized CRS 099 class, they identified different aspects of motivation that impact their perspectives about contextualized CRS 099 and the first year of college.

Motivation from an Innate Need to Achieve

Some students spoke about their internal motivation to achieve and succeed, an inner drive and optimism that was already present prior to entering contextualized CRS 099. It shaped a “gritty” outlook that told students to stay the course and focus on succeeding regardless of circumstances. “Just passing it was my motivation.” This surfaced as students discussed their reactions to finding out that CRS 099 is a developmental course that was required by college policy but did not count towards graduation.⁵

Since it was our first class, even though we had talked to our advisor, we didn’t know that that class didn’t count. By the time we were into it, we all had the same motivation. . . . By the time (the instructor) told us it didn’t count, it didn’t matter; it was helping us get to the next step.

(CRS 099) was our first class in college. It’s a college class; it’s a good start. I knew I was going to move on. Even if you don’t pass the class, you aren’t going to go down (to CRS 098).

Motivation from the Expected Growth in Self-Efficacy

Several students pointed out that they were motivated to put effort into CRS 099 because they believed that the contextualized curriculum would help them make progress. Comments like “It was helping us get to the next step” were repeated in various ways. One student voiced the underlying fear present in many first-time-in-college, first-generation students about the challenge of college: CRS 099 gave the assurance that the class would provide the basis for self-growth and forward-going

⁵ At MWCC, developmental coursework counts towards a student’s full-time status and grades earned are computed into an overall institutional grade point average. Developmental courses are financial aid eligible. However, these preparatory courses are not counted as credits towards graduation. Since MWCC has a mandatory assessment and placement policy, required developmental coursework is treated like prerequisites to all academic programs of study.

momentum. “I was afraid of college—you hear things like 101 classes are going to kill you. This was a good review class to help you toward 101. It’s a good stepping stone.”

Motivation from the Perceived Relevance of the Class

Students expressed a pragmatic view toward their education and the classes they take. They wanted the classes to “count,” both in terms of counting for graduation and in terms of building foundations for success in their programs of study. Many comments indicated that the students drew motivation from their belief that the contextualized CRS class would be relevant as they took next steps in their major or preparation to enter selective admissions programs. This is how two students articulated this form of motivation:

I personally think it has a big impact on how much I cared about the class, the fact that it was relevant to my major. Opposed to, say, I had to take the health professions class. [*The student was a business major.*] I probably wouldn’t have taken it seriously. It definitely made me want to do well in the class because it was relevant. I wanted to learn something.

I think it affected my motivation, knowing you are going to a classroom where you are sharing the same passion as others. . . . I don’t really know how to describe it. It made me feel more interested in coming . . . it was more helpful, knowing that it was something I needed to know, something that was going to help me in my future career.

Moving on from the general sense of relevance of the class, some students elaborated on the applicability of specific strategies. “I knew it was going to help me, because I have to take those types of classes in the future, so if I learned how to take good notes that would help me, and I think (this) really influences you to do better.” Motivation here arose from a combination of believing the course content was relevant and believing that the class would open the door to increased academic self-efficacy.

Motivation from the Perception of Support and Personal Connection

While many students strongly agree that the relevance of the contextualized curriculum was a strong motivator for learning and putting in effort, the ensuing dialog dwells on another motivator: the perception that they were supported. Students repeatedly spoke of how the personal interest, encouragement, and affirmation they received from the CRS faculty member motivated them to stay the course. Two students, each from a different section, spoke passionately about their academic struggles that pushed them to consider quitting and how the intervention of the instructor helped them stay the course.

I thought of (CRS) 099 as a review session for me. Even though you learn(ed) it in high school. . . . (The instructor) was pushing us to go further in our careers. . . . With all the assignments, I thought I'd have a meltdown. "I don't have time for this. Mom, I don't think college is for me." [*Student used non-verbal gestures to indicate a phone call.*] So I talked to (the instructor). I was on the way to a job interview and she said she would take me. On the car ride there, she told me, "I see the potential in you." . . . I think it was good for me personally and academically.

This student went on to say that this kind of encouragement and affirmation, while common during her high school days, appeared largely absent in college. She proffered the observation that most college instructors do not care. Another student was a non-native speaker of English. He too had the experience of making the decision to persist because of faculty encouragement. Interestingly, this student found that the contextualized reading class also helped him in his writing class.

(CRS 099) was my first course in English. In my country I learned everything in French, but sometimes I learned English. But when I came to this class, the first assignment I did was bad. I got a D. And after one month, I stopped (faculty member) and I said I wanted to drop this class, because I think I got bad advice to come here, and she told me, "I think you can continue and can improve

yourself step by step.” And when I finished it, it was the same ENG 099 but I finished the class with a B. . . . The class was very helpful for me to get better with English.

He also said that the aforementioned interaction was the first of multiple conversations about improving his skills and assignment performance. Asked whether he found these conversations encouraging, he responded, “Every time we discussed, every time.”

Another student from the same section agreed with this comment: “I loved (CRS instructor). (Instructor) will pull you aside and ask you what is going on. (Instructor) made sure you understood everything (instructor) was teaching.”

Students also appreciated the fact that their CRS faculty asked questions about their future careers and provided opportunities in class to discuss career options in their chosen field. First-time-in-college students often do not have a grasp of the many opportunities within a field of study or career path, even though they have selected a major (and chosen to take reading in a contextualized section).

(The class) made me realize what opportunities there were in the business aspect.

(The instructor) always asked questions (about my future career). . . . I also talked to the other students, too, about what they wanted to do. . . . I learned a lot of other stuff, like options as far as my career life. I still have the same one – I want to be an RN. It just opened my eyes to more – like some wanted to be ultrasound technicians, different stuff like that. It was pretty interesting.

Motivation is tied up with faculty interest in student future career paths as well as the relevance of the discussion.

Motivation from a Sense of Community

Students spoke of the sense of community that developed while in a contextualized reading class. It appeared that the common bond of seeking careers or transfer majors in the same field translated into community. One student saw this community as one based on “sharing the same passion.” The relationships from the first semester in a contextualized classroom were meaningful and beneficial as they navigated their way through their initial term in college. Another student related how this prompted her to look for CRS 099 classmates in her second semester major-related classes. Seeing familiar faces with whom she had already bonded reduced the fear of starting over in a classroom of strangers and a different instructor. This is how she described it:

As much as you think we’d get tired of these people . . . now we can’t stop talking together. We still have criminal justice classes together. We were so close, we kept each other motivated. It’s kind of weird; we tried to all sit on the same side of the room (in subsequent class).

Preparation for College-Level Coursework

Eleven out of 13 student responses (some students spoke more than once) strongly affirmed that contextualized CRS 099 prepared them for taking a college-level course in spring semester 2015. The students identified several ways in which contextualized CRS 099 enhanced their preparation for their college-level coursework. The researcher notes that some of the comments overlap with earlier observations on the transfer of skills to other classes.

Academic behavior: Students note that they learn organizational skills and time management strategies. They also learn how to receive instruction from faculty

members who may teach in ways that do not match their (the students') learning style preferences.

College expectations: CRS 099 helps them understand the norms and expectations of college culture. One student uses an example from a general education class where grace is not extended to students who procrastinate and then encounter technical difficulties at the last minute. Another speaks of the importance of understanding one's optimal time for studying when choosing a class schedule. Yet another speaks at length about reflective prioritizing, whether work or academics should come first.

Reading-related skills: Several students specifically mention comprehension and vocabulary skills. "I had issues with understanding the words that were on the paper a lot, and after taking this class I really understand a lot better. In advanced classes (in chemistry and biology) I can understand the words better. And the questions they're asking are a lot easier to read."

Summary writing: In CRS 099, summary writing is a core skill that is emphasized for the improvement of textual engagement and comprehension. As before, the students believe that this skill proves very useful in their ENG 101 Composition I classes where they are expected to read articles prior to writing essays.

Faculty connection: Students also see faculty relationships with other faculty as having an important role in helping them make progress. Two different aspects of this are highlighted. One has to do with CRS faculty helping them choose classes for the subsequent semester. Another aspect has to do with CRS faculty acting as informal references for the students by way of introducing them to their new instructors. "They can also tell the other professors and tell them – she's a great student. Professors talk."

Community: Again, students reiterate that the bonds formed in the first semester in the contextualized CRS 099 are carried over to the following semester. The importance of relationships in succeeding in college and social dimension of teaching-learning encounters emerge once again.

It should be mentioned, however, that two students noted that they felt that the class, content-wise, was no more than a repeat of what they had learned in high school.

Recommendation to New Students

The students gave an unequivocal and resounding yes to the question whether they would recommend a contextualized CRS 099 to a new student who places into upper-level developmental reading. The reasons were based primarily on the theme of relevance, reiterating points mentioned earlier. One student was of the opinion that taking a stand-alone reading class unrelated to a chosen program or major would “just be harder.” Another student added to that remark: “You need something that is going to lead up to your career.” Yet another remarked that “general classes (that is, non-contextualized sections) do not help with what to expect if the class is not applied to your major.” Real connections with future plans are clearly of prime importance to the students.

Several students elaborated on how curricular relevance helped with retention and persistence. They believed that relevance motivates students to persist when the going gets rough. When a class is irrelevant, it is easy for a student to lose sight of why the class even matters. In other words, irrelevance is a strong de-motivator.

I would tell them (new students) to take any class that is specifically for anything you want to go into. Because if you are in college, and around April, you just start to say you don't want to go to any classes, like English, because you don't see the point if it's not going to have anything to do with what you want to do in the future.

I'll say yes, because I think it will make the class more interesting, like you want to connect more with what you want to do, stuff that's related to your career, like health professions. I think they should. If you take (non-contextualized CRS 099) just to be taking it – “Why am I taking this? It has nothing to do with what I'm doing.”

On the other hand, relevance is a strong motivator to do well. It helps a student to get grit and persist in the class even though the student might dislike the content.

It does affect your motivation and how well you want to do in your class. If you are serious about what you want to do for your career, if your class is relevant to your career, you're going to do well in there.

The only reason that I strive so hard in my chemistry class is because I know I need it to be a nurse. Other than that I probably would give up . . . long ago. But I know it is something I need and it is very, very important.

Discussion of Findings

Quantitative (descriptive) data indicate that students in contextualized CRS 099 perform better than developmental reading peers in non-contextualized CRS 099 on the following measures: They pass CRS 099 at higher rates; they attempt more and thereby earn more credit hours in their first and second semesters (first academic year); they attempt more and thereby pass more college-level courses; and they return in the spring semester (term-to-term persistence) at higher rates. The qualitative findings gathered through focus group interviews provide insights into factors that influence the positive outcomes. Three key findings emerge.

The first is the critical role that relationships play in the developmental reading students' perceptions of their college experiences. The social dimension of the classroom experience takes center stage as these CRS 099 students described what they thought was important as they started college. They placed high priority on the presence of opportunities to develop relationships with peers as they evaluated their academic experience. Starting college without knowing anyone is a fearsome thing for some students. "I haven't always been great with a lot of different people—

conversating [*sic*] with a lot of different people.” The contextualized curriculum classroom in the eyes of the focus group participants meets this need in a strong way. They believed that being in a classroom with students who share the same academic or career aspirations provides the commonality that promotes relationship building. “It’s not easy to build relationships with other people, when they aren’t in the same area.” The apparent common bonds translate into friendships that in turn heighten the sense of belonging.

Students espouse utilitarian views about relationships. Good relationships should provide benefits. “So maybe when I made friends in the class it would give me direction, clues on what to do.” Friendships mean not being alone; they also hold the promise of a mutual support network. The students say that the contextualized classroom provided the opportunities for beneficial relationships. “It was cool; we formed study groups according to what we were studying.” The relationships persisted beyond CRS 099 into the second semester. “We still have criminal justice classes together. . . . It’s kind of weird; we tried to all sit on the same side of the room!”

The relational dimension of the faculty-student interaction also emerges as pivotal as students assessed whether their academic experiences were positive. The students were emphatic that when an instructor shows concern, speaks encouraging words, affirms a student’s potential, and demonstrates interest in the aspirations of the students, these expressions of personal interest directly impacted their decision to stay the course against the odds and to put forth effort. The instructor’s attentiveness to student well-being whether it be learning the course material, remaining enrolled, or

charting the journey towards a credential provides a personal connection that means a lot to the students. Judging purely by the tone of the responses and the profusion of anecdotal comments and descriptions about the support received from the CRS faculty members, it appears to the researcher that the importance of personal connections established with faculty outweighs even the friendships developed among peers. Together both sets of relationships played a weighty role in the positive outcomes of the contextualized CRS 099 students.

The second finding is that the perceived relevance of the course material and instructional approach contributes to the success of the students in their first year. Students tended to be pragmatic about the classes they take. They repeatedly said that they wanted their classes to “count.” There were concerns about the cost of college and using financial aid dollars wisely. Developmental coursework does not count as graduation credit at MWCC; however, the students said that they could emotionally accept taking a developmental class if they saw that what they were learning laid essential foundations for success in future college-level coursework. In other words, developmental course work has to count for something in a practical way. The students stressed that the relevance of learning about reading and study skills in the context of their chosen major or career pathway was key to their motivation to perform well.

At the same time, it is equally, if not more, important that the perception of relevance was confirmed through their experience of the actual transfer of skills from the CRS 099 classroom to college-level coursework. The enthusiasm of the focus group responses about the transfer of skills learned was palpable as the students pointed out

the multiple ways in which they found application for their CRS 099 skills. The skills that the students referenced are listed on pages 140-141. Together, they represent a confirmation that the learning outcomes of contextualized CRS 099 have a durability beyond the attainment of a class grade and the completion of the developmental reading requirements. When asked which college courses they applied CRS 099 skills and strategies in, the students named college courses that are required for the pursuit of their chosen programs of study like BUS 101 Introduction to Business and CHE 106 Chemistry for Health Professions, and BIO 121 Anatomy and Physiology. But they also made reference to general education course requirements that are not major or program specific like ENG 101 Composition I and PSY 101 Introduction to Psychology. It appears that the enthusiasm for learning generated in contextualized CRS 099 fuels a motivation to apply reading and study skills to classes beyond specific program requirements. This possibly explains why students from the contextualized sub-cohort attempted and earned more credits as well as enrolled in and passed more college-level courses.

Third, taking CRS 099 in a contextualized classroom plays a critical role in nurturing and preserving student motivation. Motivation inspires students to put in effort, sustain effort over time, and persist when they face challenges within and without the classroom. It keeps the student successfully focused on academic goals as evidenced in the attainment of positive outcomes through the first year. As noted earlier, the experiences in the contextualized classroom are motivational in a variety of ways. The students initially draw motivation from an expected growth in self-efficacy

and the perceived relevance of the class to their declared majors or career programs. As the semester progresses, they derive motivation from the personal connections developed with peers in the classroom as well with the faculty members. Relationships foster a sense of community providing what Tinto (1993) has called the sense of social integration. For the hesitant new freshman student, the perception that “I belong” helps to dispel the fear that he or she is an imposter, pretending to be a college student.

However, despite the positive outcomes and success that characterized this sub-cohort of contextualized CRS 099 students, half of them did not return to MWCC the following fall semester. On this important milestone towards credential attainment, the students in contextualized CRS 099 did not perform any better than their peers in non-contextualized CRS 099. One explanation for the apparent non-success on this outcome measure is that while curricular and instructional re-design is a necessary factor in successful outcomes in the developmental reading students first year in college, it is not a sufficient factor. Contextualization of the curriculum and changes to delivery of course material are important factors for first-year success outcomes but they by themselves cannot sustain the momentum generated in the first semester into the second year. There are other factors are involved in attaining longer-term persistence.

Two reflections follow from this. The first is a practical one. When developmental faculty embark on curricular re-design in the hopes of improving student outcomes and accelerating student progression towards credential attainment, they rightly focus on the domain they have expertise in and control over—their courses, what is covered, how teaching is delivered, and how learning is facilitated. At the same time,

it is important that faculty undertake redesign with a realistic perspective. They must understand that the impact of curricular and instructional changes, relevant and essential though they be, may be limited. The results of the current limited study suggest that there are clear positive impacts on student outcomes through curricular re-design but these impacts are seen primarily in the first year. Recognizing the possible limitations of the reach of their work may allay frustration among faculty. It may also prompt faculty to look beyond the conventionally imposed silo of the classroom to possible coordination with non-instructional, non-faculty-initiated interventions to effect longer-term results.

The second reflection has a more theoretical bent as it pertains to how the purpose of developmental education is perceived. Developmental education has traditionally taken a largely negative backwards-looking perspective. Its purpose is to deliver high school-level academic skills at college to students who cannot demonstrate that they have the skill competencies to succeed in college. In this deficiency model, developmental education is a repeat of high school. In recent times, developmental educators have begun to consider a forward-looking perspective in what they teach and how they facilitate learning. The focus is not on what the students should have learned in high school but on the skills that college students need to succeed in first-year college-level coursework. In developmental reading, the emphasis is on competencies that help students to effectively engage ideas in texts and learn in that first level of college coursework. The attention is not on the “should have learned” but on the “what is needed” to read and study from first-year college texts. The developmental reading

faculty leaders at MWCC espouse this positive forward-looking viewpoint that influenced the decision to launch contextualization pilots in fall semester 2013. Given this forward-thinking standpoint, it seems reasonable to ask whether the impact of contextualized curriculum should be assessed primarily on outcomes within the first year of college. This in turn leads to the related question whether it is too much to expect that the impetus for success generated in a first-semester developmental reading class is maintained with the same strength into the second year.

The researcher suggests that sustaining the momentum for success created in the first semester may require other intentional, possibly non-instructional, interventions in the second semester. Studies into student persistence indicate that non-academic factors play a strong role in whether students return for a second year and persist to graduation (Lotkowski et al., 2004). The community college student assumes many roles in life. Being a student is but one of these roles. Demands from the non-academic sectors of life can detract from persistence—or at least, precipitate a temporary stepping out of higher education. Anecdotal evidence from two of the 10 focus group interviewees (shared with the researcher outside of the interviews) may shed light on some of the life circumstances that sometimes hinder or delay students from returning for the second year. One student reported that she was pregnant and expected to deliver her baby before the start of the fall semester 2014. Her plan then was to return to her home 150 miles away to avail herself of family help with the newborn and to attend community college in her home district. Another student together with her mother and younger sister was evicted from her home due to

dysfunctional domestic relationships during the second semester (spring 2014). She hoped her life situation would stabilize by the start of fall semester 2014 so that she could return to resume her education at MWCC. She did not. Mastering course content and having positive experiences in one first-semester course do not override the importance of non-academic factors such as life management skills, social support, and institutional commitment (Lotkowski et al., 2004; Robbins et al., 2004). The MWCC contextualization pilot does not include any student support interventions. The absence of such intentional interventions to build on the experience of academic success is one possible reason why students in the contextualized sub-cohort were unable to translate the academic gains in the first year into a return for the second year at MWCC at rates better than their non-contextualized developmental reading peers.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

CONTRIBUTIONS OF THE STUDY

The current study on the impact of contextualized curriculum on the outcomes of developmental reading students shows that the curricular intervention correlates with higher attainment of outcome measures throughout the first year of college. Students in contextualized reading sections complete the required reading class at a higher rate, attempt and earn more credit hours, attempt and complete more college-level courses, and show higher next-term persistence rates than developmental reading peers in non-contextualized sections. Admittedly, there is one key outcome measure where there is no difference between contextualized and non-contextualized reading students—fall-to-fall persistence. The momentum generated by the learning experiences in the contextualized classrooms appears to be insufficient to boost persistence into the fall semester of the following year.

At the Local Level

This study is primarily an evaluation of Middle West Community College's pilot of contextualized sections of developmental reading. Compelled by institutional cohort tracking data that indicated the low rate of progress among students with developmental coursework placements, guided by external research, and inspired by

small internal tryouts, the MWCC reading program decided to try contextualization as an intervention strategy to jumpstart student progress. The results of this study indicate that the reading program is moving in the right direction. Overall, the students in contextualized sections do better in their first year (first fall and spring semesters) providing a basis for the program to consider a broader expansion of the contextualization efforts.

In fact, at the time of writing, the results of this study (as well as the award of federal grant funds) have inspired the lead reading faculty to move in two bold directions. The first is part of a larger college-wide endeavor to identify broad meta-majors for all incoming freshman students to choose from. This is an essential component in a comprehensive First Year Experience effort to help students select educational goals and develop realistic educational plans. The reading faculty plan to contextualize all reading sections over time so that new students will choose CRS 099 sections that are linked to the meta-major of their choice. The second is to advance the work of contextualization in relation to one of these meta-majors—career programs in engineering technology—by developing a Reading and Writing for Technicians course. This not only reduces the credit hours needed to fulfill remedial reading and writing requirements but also focuses on the kind of content literacies and textual interpretation competencies required of students preparing for work in technical fields.

Contribution to Scholarly Research

It was noted in the earlier Literature Review (Chapter Two of this study) that among the limited number of studies on the effectiveness of contextualization, only seven were conducted in postsecondary settings (Perin, 2011a, 2011b). The one that is probably the most well-known is the Jenkins, Zeidenberg, and Kienzl (2009) study on the Integrated Basic Education and Skills Training (I-BEST) program in the state of Washington. The I-BEST program focuses on improving the outcomes of low-skilled adult students participating in adult education/career and technical education programs. This dissertation comparison design study adds to the current body of knowledge by studying the effects of contextualization on middle-skilled college freshman students who place into developmental reading (who at MWCC are designated as students who place into CRS 099). Like the Jenkins et al. study, it uses progression to degree measures to quantify effects of curricular intervention. Rutschow and Schneider (2011), on the basis of their literature review of developmental education reform efforts, concluded that “acceleration and contextualization strategies appear to hold the most promise for improving developmental education students’ success” (p. ES-2). The researcher ventures to say that the current study contributes to the affirmation of the promise of the contextualization as an intervention strategy to improve student progress. Its findings also contribute to the conversation of how to reform the way developmental education is delivered.

When considering the place of this study in the field of current scholarly research, it may also be helpful to compare its findings with the results of a recent study

on the impact of learning communities on the success of developmental students. In 2012, MDRC conducted an experimental study on the impact of developmental learning communities in six college sites (Sommo et al., 2012; Visher et al., 2012). These learning communities focused on students who placed into developmental English and mathematics. The study followed students through two semesters after the initial semester in which the learning communities were offered. The overall finding was that learning communities have minimal effects on the long-term progress of developmental students. Positive effects are experienced primarily in the short-term. Students who began college in learning communities in comparison with students who did not enroll in learning communities earned on average a half-credit more in targeted subjects (English or mathematics) and therefore a half-credit more in total credits earned. Learning communities did not yield any positive effect on credits earned in other courses outside of the targeted subject areas. There was no observable effect on persistence, term-to-term as well as year-to-year. A comparison of the findings of the MDRC study with the current dissertation project shows that the contextualization intervention leads to stronger effects on the developmental students. While it is important to note that the current study is a one-college study and focuses on a smaller cohort of students (289 students compared with the 6974 in the MDRC study) and follows students only until the beginning of the second academic year, its findings indicate a significantly higher average of attempted and earned hours and of attempted and earned college-level courses. Students experiencing the contextualized intervention also show a higher fall-to-spring persistence. But like the MDRC study, the first-semester

innovation does not generate sufficient momentum to bring the students back the following fall semester. This researcher thus arrives at the same conclusion as the MDRC researchers: “Policymakers and colleges need to have realistic expectations of what a one-semester intervention of any kind, including learning communities, can do to change the trajectories of large numbers of academically underprepared students” (Visher et al., 2012, p. 9). As discussed in Chapter Four, increasing the impact on longer-term persistence may mean that curricular and other innovations must be combined with outside-the-classroom supports. Such supports, however, are potentially more costly. Higher costs may well impede efforts to offer additional supports at scale.

LIMITATIONS OF THE STUDY

At the same time, it is important to acknowledge the limitations of this study. There are five limitations that should be considered with regard to the study’s findings on the effectiveness of contextualization.

Size

Due to the time constraints under which this study was undertaken, the study is small. One, it was limited to the work of contextualization in the developmental reading program at one college. Two, it focused on one cohort of students—freshman students who started at MWCC in fall semester, 2013 and who took CRS 099 in that first semester—who were tracked through their first fall and spring semesters and into the beginning of their second fall semester. Three, although this study uses the entire population of first-semester MWCC students who attempted CRS 099 for the first time

in fall 2013, the size of the data set is relatively small given MWCC's developmental reading fall-semester enrollment numbers. This, as indicated in Chapter Four, in turn affects the p value of the inferential statistics. The smaller cohort size does not have the power to achieve the conventionally desired alpha level of 0.05.

The size of this study may diminish the generalizability of the results to contextualization efforts in other community colleges in the same Midwest region or even to future cohorts of CRS 099 students at MWCC. However, given that the original intent of the study is program evaluation for the purpose of facilitating program-level decisions regarding the possible expansion of contextualized curricular pilots, the study serves its purpose. The higher p values can be tolerated. The descriptive statistics assure MWCC that contextualization is a data-driven strategic move for developmental reading.

Faculty Characteristics

The reading faculty who launched the contextualization pilots are experienced full-time faculty at MWCC, each having a strong history of commitment to finding better ways to engage and retain developmental students. They put in the extra time and effort to learn the reading requirements of related content courses and re-design their curriculum. Some of them had been given release time from teaching in earlier semesters to develop the contextualized curriculum; one volunteered her time. All were female instructors. Instructor characteristics may have played an important role in the success outcomes of students in contextualized sections. However, the current study focused on the students—their attainment of progression outcomes and their

experiences within the contextualized learning environment. The quantitative component of the study did not consider the impact of the faculty on the outcomes; hence, the improvement in outcomes was not regressed on any instructor characteristics. The study also did not compare success outcomes of students in non-contextualized sections that were taught by these same instructors to see whether the better outcomes are dependent on the contextualization of the curriculum or on faculty characteristics.

Student Perceptions

The qualitative component of the current study focused on the perceptions of students receiving the contextualized curricular intervention. The immediate intent was to study the experiences of the students in the contextualized learning environment in order to obtain a narrative that explains the better outcomes of these students. The experiential account complements that numerical data. The researcher's choice *ipso facto* excluded the perceptions of students in non-contextualized sections of CRS 099. In this sense, the scope of the study is limited and the qualitative data collected are one-sided.

The researcher also recognizes that it is possible that students who responded positively to invitations to participate in focus groups may have been more successful grade-wise in the CRS 099 class and may possess non-academic factors that influenced their responses to curricular interventions. These possibilities were not taken into account when analyzing the responses of students.

Curricular Focus

There are two interrelated aspects to teaching and learning in the classroom—the curriculum and the pedagogy, the “what” and “how” of instruction. This dissertation narrowed its scope to focus on the relationship between a specific curricular intervention and the attainment of progression outcomes. Its initial hypothesis is that better outcomes are contingent on a change in curriculum design, that is, the contextualization of curriculum. It chose not to study the impact of pedagogies and instructional practices used in teaching either forms of CRS 099.

At MWCC, all courses are guided by a master syllabus called a Course Information Form (CIF). The CIF specifies essential curricular components, class time spent on each component, and the intended student learning outcomes from the course. CRS 099 faculty in both contextualized and traditional non-contextualized sections follow the same CIF. The curricular components include the teaching of active reading using of the strategies of annotation and selective highlighting, summary writing with an emphasis on identifying the author’s thesis and main supporting ideas, and the crafting of critical responses to specific ideas in the text. However, CIF components are broadly stated to allow instructors to use a range of pedagogical approaches. Thus faculty utilize different teaching strategies depending on their theoretical assumptions about student learning, personal teaching style preferences, and student characteristics in a given section. The range of instructional approaches common in CRS 099 classes range from lecture, demonstrating strategies using document cameras, modeling out loud, class discussion, small groups, to one-on-one conferencing. Most will adopt a

combination of pedagogies to accommodate the diversity of student learning style preferences present in the classroom, but there is no standardized approach. This is in accord with the culture of academic freedom that prevails in the academic division that houses the developmental reading program.

The faculty teaching in the contextualized sections link the content of their developmental reading courses to specific college courses required in the first year of the career programs or majors. For example, the curricular focus in the Health Professions section was on reading and study strategies needed to succeed in *Chemistry for Health Professions* and *Anatomy and Physiology I*; the Business section focused on reading material and strategies related to *Introduction to Business*. Whether the faculty used specific pedagogies and instructional methods outside of what is broadly required in the CRS 099 Course Information Form and how these may have impacted the attainment of student outcomes were not considered in this study. This is clearly a limitation of the present study.

Measurement of Reading Improvement

The current study focused on the achievement of external criteria of academic progress such as the completion of developmental reading requirements, the ability to pass classes at the college-level, and the long-term persistence of students. It did not measure whether the contextualization intervention resulted in the actual improvement of the students' reading skills. At MWCC, no exit test is administered at the completion of developmental reading requirements. The reading program assumes that the reading

strategies taught in CRS 099 are sufficient for managing reading requirements in first year college-level content courses and that passing the course with a C or better is an indication that these strategies have been adequately acquired and practiced. However, the researcher acknowledges that earning a passing grade is not necessarily a measure of skill improvement. The inability to state whether contextualization is correlated with the improvement in reading skills is a limitation of the present study.

RECOMMENDATIONS

Future Directions for Research

The foregoing discussion of limitations naturally suggests important areas of further research that will strengthen the conclusion that contextualization is a viable curricular intervention in the reform of developmental education.

Expand Present Study

For the reading program at Middle West Community College, applying the setup of the current study to subsequent fall cohorts of CRS 099 students will provide a larger data set for the formative assessment of contextualization efforts. This is particularly important since lead faculty are interested in moving forward with expanding the contextualization approach program-wide. Data collected and analyzed will also be important for facilitating faculty buy-in. At the conclusion of Chapter Four, the researcher observed that contextualization comes not only with changes to curriculum design but also a transformation of basic assumptions about the purpose of developmental education—that developmental education is not a retrospective repeat

of high school curriculum but a forward-looking endeavor that prepares postsecondary students to succeed in the first-level of courses required for entry into career programs or academic majors. Implementing this kind of change program-wide requires major adjustments in how faculty members think of their work, prepare course materials, and interact with students in the learning environment, adjustments that can only come when the mind accepts the new paradigm and the heart is willing to participate. Data to show that there are clear gains in student outcomes from contextualization go a long way in the effort to win buy-in.⁶

The current study can also be expanded to include developmental reading programs in other community colleges. Replication of the better success outcomes experienced by contextualized CRS 099 students in MWCC in other peer two-year institutions would certainly strengthen the case that contextualization is correlated with progress toward credential attainment. Expansion of this study assumes, of course, that there is sufficient interest among community college peers to allocate resources, human and fiscal, for the work of contextualization. The AACC (2012a) 21st Century Commission's clarion call to community colleges to design and implement clear and coherent pathways for students and to take developmental education out of its current dysfunctional world where student aspirations are buried (pp. ix, 10) has generated a widespread awareness of the need to change. The researcher is hopeful that there will

⁶ MWCC is located in a state with a decentralized system of community colleges. The autonomy of each institution within the system is often reflected at the program level within the institution where curricular and pedagogical change comes through persuasion rather than by program-level or institution-wide decisions. Reform takes place through a "bottoms-up" consensus-building process. This is certainly the case at MWCC.

be two-year partners interested in adopting this approach to changing the teaching-learning dynamic in the classroom in addition to the current dominant interest in enacting changes primarily at the structural level (Perin, 2013; Rutschow & Schneider, 2011).

Yet another option for expanding this research is to study the impact of contextualization on developmental student success in high enrollment general education classes. At every community college, there are general education classes that attract a large number of students with developmental reading and writing placements. At a college like MWCC, such courses would include American Government, Art Appreciation, Introduction to Psychology, and Introduction to Sociology. Contextualizing the reading curriculum to select high enrollment courses that also have significant failure rates for students with developmental reading placements would be a worthy initiative. Designing empirical studies to investigate the impact of such initiatives on developmental student outcomes would take the data on contextualization beyond the largely career program focus of the current study into the realm of transfer coursework. Findings would certainly strengthen the existing body of knowledge and empirical research related to this curricular intervention.

Perceptions of All Students

The qualitative component of the current study focused on the perceptions of students in contextualized developmental reading sections. To make the narrative behind the numerical data and findings more complete, the voices of students beyond those who experienced learning and progress in the contextualized reading

environment need to be included. These additional voices could come from any or all the following groups:

- Students in non-contextualized traditional reading sections;
- Students who are not successful in CRS 099;
- Students who do not persist into the second year.

Each group will add a different dimension to the narrative, widening the understanding of how developmental students experience the learning opportunities (contextualized and non-contextualized) in a remedial reading classroom as well as of factors that affect their decisions to persist in college. Students in non-contextualized reading sections will naturally provide an interesting comparison between their perceptions of classroom learning experiences with their peers in contextualized sections. Non-successful students will include students who do not complete the class (that is, withdraw before completion) as well as students who complete the class without the required level of success (that is, earn a D or F grade in the class). The perceptions of such students will serve as an instructive counterpoint to the views of students who succeed, providing a different but possibly rich set of insights.

CRS 099 students who do not return for a second year could possibly provide one of the more interesting sets of qualitative data. Learning whether and why developmental students transfer laterally into other community colleges, transfer vertically into four-year institutions, or decide to step out of college could shed new light on the disturbing trend of falling year-to-year persistence/retention rates among first-year community college students (National Student Clearinghouse Research Center

[NSCRC], 2014b). As Shapiro has observed, “Getting past the first year, either by staying put or transferring to another institution, is one of the most important milestones to a college degree” (as cited in National Student Clearinghouse, 2014b, p. 1). Gaining insights on why students who experience success through the contextualization intervention choose not to return in the second year will be of particular interest to the present study. However, while this presents a very important area of future research, this researcher acknowledges that collecting this kind of qualitative data may prove challenging. It is difficult enough to contact current students for a multiplicity of reasons (these reasons range from outdated contact information to institutional slowness in matching its communication technology to students’ preferred mode of communication); it may prove even trickier to contact students who have left the institution.

Specific Pedagogies and Instructional Practices

As mentioned earlier, every MWCC course has a Course Information Form (CIF). The CIF functions like a master syllabus listing major components of the course and expected learning outcomes. Developmental reading instructors develop their course materials and lesson plans guided by the CRS 099 Course Information Form (CIF) but have the liberty to choose pedagogical approaches that suit their teaching style preferences. The researcher, for this initial phase of studying the effectiveness of contextualization, chose to focus on the attainment of progression measures and on student perceptions of what they learned, the applicability of what they learned, and the contributions of what they learned to their success in college-level courses. This

naturally leaves open the question of pedagogy and the effectiveness of specific instructional practices on reading improvement. Thus two directions are recommended for future research in this area. The first direction focuses on the faculty. A variety of faculty-related variables may have impact on student outcomes. An expanded study on how faculty training and professional development, faculty theoretical assumptions about students and how they learn, and specific instructional methods affect developmental student outcomes (that is, the attainment of progression measures and/or the improvement of reading skills) and whether the contextualization of curriculum augments the impact of these co-variables could provide a rich source of additional data and analyses relevant for accelerating developmental student success.

The second direction for future research is on student characteristics. The current study shows that contextualization has a positive impact on student outcomes. An expanded study to see whether student characteristics such as entry reading skills, career program or transfer orientation, being first generation in college, and socioeconomic status moderate the effect of the contextualization intervention on the attainment of outcomes will provide important additional insights.

Non-Academic Factors and the Role of Faculty

The current study reveals that despite clear first-year gains in progression measures by the contextualized CRS 099 students, they did not return for the second year at MWCC at better rates than the non-contextualized reading students. In fact, there is no difference in their return rates: both sub-cohorts have a 50% fall-to-fall persistence rate. This is slightly better than the national average at 46.5% for first-year

students at public community colleges (NSCRC, 2014a), but the contextualization intervention appears not to give the student beneficiaries of this curricular redesign any edge over their non-contextualized peers. Apparently the momentum generated in a redesigned first-semester developmental reading class is not strong enough to propel students into a second year at MWCC at any higher rates. Students report that real learning took place. Yet contextualization of curriculum as an intervention by itself cannot adequately seal the leaks in the so-called pipeline from first year into second year.

The conventional wisdom that is oft repeated among developmental educators is that there is no magic bullet to fix the high attrition of developmental students. There is no one intervention or strategy that meets the needs of underprepared students en masse. What is needed is a combination of different strategies and interventions (K. Li, personal communication, November 14, 2014).⁷ This combination, Lotkowski et al. (2004) would argue, must be a mix of strategies that address academic as well as non-academic factors. Academic interventions like the contextualization of teaching and learning address only part of the equation of persistence and retention. “Non-academic factors such as academic self-confidence, achievement motivation, goal and institutional commitment, and social support and involvement also influence college outcomes” (p. 19). Their research shows that successful retention programs employ strategies that address academic and non-academic factors in an integrative way.

⁷ Kevin Li is the dean of instruction at Wilbur Wright College, Chicago, Illinois. He has been nationally recognized for his leadership in improving student success. He is instrumental in implementing innovative approaches to reform the delivery of developmental education at Wright College.

Student responses in this present study lend support to this and possibly add a new dimension to the role of non-academic factors. In the Chapter Four analysis of student reflections about contextualized sections of CRS 099, what emerged time and again is that the social dimension of the teaching-learning dynamic plays a major role in how students evaluate the quality of their learning experiences. Students respond positively to what is taught in the classroom because they perceive the instructor as one who cares for them as individuals. They naturally expect that faculty want to know how well they learn course content. But they warm up to faculty who take an interest in how well they are learning, show concern about the challenges they face in life, and pay genuine attention to their chosen career paths or academic major. Several students said that their motivation to persist despite apparent obstacles came directly from the affirmation they received from faculty. They tended to associate the growth in their academic self-confidence with the faculty member's support and attentiveness. All this accords with Tinto's observation that the degree to which the community college student experiences academic and social integration in the classroom is a strong factor in student success and persistence (Tinto, 1993, 2011). Thus the findings from the current study provide a point of departure for additional research in to the role of faculty in cultivating the non-academic areas that factor in long-term student persistence, factors that might take strengthen the momentum generated from strategies like the contextualization of curriculum to propel students over the summer gap to return the following year.

Directions for Policy and Practice

Based on the literature review and findings of the present study, the researcher recommends that community colleges consider the following as they seek to improve developmental education.

Reconsider the Purpose of Developmental Education

Changes in policy and practice begin with a change in perspective.

Developmental education should not be viewed as a repeat of high school, a kind of remedial 13th grade. As Grubb et al. (2011) have observed, this backward-looking perspective has unfortunately resulted in a monotonous skill-and-drill pedagogy with a mechanistic focus on the sequential acquisition of sub-skills. This mode of delivering remediation pervades many developmental education programs. Developmental students suffer from a high rate of attrition; many do not complete the developmental coursework sequences they are referred to, much less complete key gateway courses for credential attainment.

Developmental education should instead be re-purposed as an essential component in larger institutional initiatives to create guided pathways⁸ for students. Guided pathways are clear roadmaps that take a student from entry to an academic end goal—graduation and/or transfer. Every student is given a roadmap of courses leading to his or her academic destination. In this conception of institution-initiated guidance, developmental education programs are the “on-ramps” (Jenkins & Cho, 2014, p. 3) into

⁸ Guided educational pathways to completion is part of a national endeavor to improve the graduation rates of undergraduate students (Jenkins & Cho, 2014; McClenney, Dare & Thomason, 2013).

these educational highways. Remediation adopts a forward-looking perspective, specifically equipping students with relevant basic academic skills needed for success in required first-year coursework in the student's initial declared field of interest. This leads to the next recommendation.

Contextualize Developmental Courses

Instead of being conducted in isolation from the careers and majors that students aspire to, developmental coursework should be taught in the context of a student's choice of career program or academic major, laying essential foundations for success in required course sequences as defined by the pathway. Making contextualization of curriculum and learning outcomes an institutional priority and a reality involves a number of steps, the exact combination of which depends on institutional characteristics and resources. These steps may include:

- Announcing central administration support;
- Identifying broad meta-majors⁹ from which entering students can select an initial area of interest;
- Identifying developmental faculty leaders who are interested in contextualization as a strategy for improving teaching and learning as well as a means for enhancing attainment of progress measures;

⁹ Meta-majors are broad areas that new students can align themselves with in terms of their initial field of academic interest. Common meta-majors are allied health, humanities and the arts, STEM, social and behavioral sciences, business, and agriculture (Complete College America, 2012; Jenkins & Cho, 2014; McClenney et al., 2013). Developmental reading and writing coursework can be contextualized to meta-majors, equipping students with the content literacies needed to succeed in college-level coursework within their selected meta-major.

- Providing strong institutional support (such as release time, stipends, professional development, and assessment expertise) for interested faculty to do the work of contextualization;
- Establishing clear timeline for pilots, formative assessments, and expansion;
- Creating clear and consistent communication channels about the contextualization initiative so that faculty and student services staff keep abreast of developments;
- Investing in academic advising personnel and intrusive advising services.

Ideally, the contextualization of teaching and learning in developmental courses is a college-wide endeavor. It must move from the margins of initial pilots and appearance of boutique programs to center stage. This takes concerted institutional commitment.

The promise of better outcomes attainment, enhanced student motivation, and improvement in learning and transfer of skill makes the allocation of expertise and resources not only a worthwhile but also an imperative endeavor. McClenney, Dare, and Thomason (2013) echo this point:

The objective is to get students into college-level study as soon as possible, but institutional and instructional designs have erected virtually insurmountable barriers. Rather than embed remedial work in an academic pathway, most colleges isolate developmental education . . . from academic content where students' interests and motivation are invested. It's now time for that to change. (p. 62)

Develop an Integrative Approach to Address Academic and Non-Academic Factors for Developmental Student Success

Good curricular design such as the contextualization of teaching and learning is essential for authentic and motivated learning in the developmental classroom. But the current study suggests that the association between effective academic interventions in the developmental classroom and long-term persistence is tenuous unless there are additional student supports and interventions. The reality is that faculty-led innovations in the developmental classroom are typically conducted without connection to outside-the-classroom non-instructional supports. McClenney et al. (2013) observe that community colleges often provide a broad range of non-academic support programming—orientation, early alert, educational planning, tutoring, and intrusive advising—but these are often offered in piecemeal fashion to the individual student, uncoordinated with classroom-based curricular and instructional interventions. Colleges need to implement programming that intentionally integrates academic strategies with non-academic supports (Lotkowski et al., 2004) so that the student experience of supports for success is holistic.

How integrated approaches to academic and non-academic interventions look will vary with each college as retention programs for students must be appropriate to institutional characteristics, student demographics, and available resources. To augment the good effects of curricular redesign for developmental students, colleges may consider implementing steps such as:

- Using a non-cognitive assessment tool to identify non-academic areas of need;
- Incorporating contextualized curriculum sections into learning communities;
- Designating an advisor or counselor for each developmental class;
- Linking the contextualized class with a college success course;
- Providing mentors for students;
- Using intrusive advising to help students through the summer “cool out” period between academic years.

Each of these steps has the backing of research and practice. Colleges have to decide which coordinate best with faculty-led academic interventions within their institutional contexts.

CONCLUSION

Contextualization of teaching and learning is a promising practice in the movement to reform developmental education. Its effectiveness in increasing first-year success among developmental students is affirmed by the current study. It should be seriously considered in the efforts of community colleges to accelerate the progression of developmental students.

At the same time, we should be mindful that contextualization is but one piece of the larger essential work of institutional redesign, albeit a very important piece. As Terry O’Banion (2011) puts it: “We cannot continue to tweak the current system by simply adopting a promising practice—contextual learning, for example . . . this kind of

reform is akin to trimming the branches of a dying tree. Piecemeal reform will not bring about the transformation required” to fulfill the Completion Agenda. Colleges have to change so that all students, developmental students included, who enter the community college find themselves in clearly defined, seamless pathways that lead to the successful attainment of their academic goals. Contextualization should be recognized as an integral part of these pathways. This not only secures the role of developmental education as one of the primary functions in the community college’s academic enterprise but also helps to keep the door of access open to the academically underprepared in a meaningful way.

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APPENDIX A: RECRUITMENT EMAIL/INVITATION TO PARTICIPATE

Email invitation

Dear (Middle West) student,

You are receiving this email invitation to participate in a focus group interview because you took CRS 099 in fall semester 2013 in a special class where all the other students shared a similar career/major interest with you. The instructor connected the reading course to your career/major interest. The purpose of the group interview is to hear about your experiences in this CRS 099 class and how the connection with your career/major impacted your preparation for college. Your responses will be used as part of a study to improve the CRS 099 classes.

Each focus group will consist of several students from CRS 099. You will be asked to share your responses to 4 or 5 questions. Your answers are voluntary. Nothing you say will affect your grades or performance in any current or future class at Middle West Community College. Your identity will be kept confidential. You will not be identified directly with any of the responses.

The focus group interviews will last no more than 50 minutes and will be held on the following days and times:

- Thursday, (month/day), 12 – 12.50 p.m. in Room xxx
- Monday, (month/day), 1 – 1.50 p.m. in Room xxx
- Wednesday, (month/day), 11 – 11.50 a.m. in Room xxx

Pizza and pop will be served during the group interview.

Please note that this focus group invitation is intended for students who are 17 or older. Reply to this email if you are 17 or older and are willing and able to participate. Also, indicate your preferred day/time for the interview. If you have questions about this focus group, let me know. You can contact me by replying to this email, visit me in my office in A114 or call me 217/373-3709.

Researcher's email signature and contact information

Script for phone (verbal) invitations

Researcher: Hello. May I please speak with (student name)?

Student affirms that he or she is the student.

Researcher: How are you doing today? May I take a few minutes of your time to explain a study that I am conducting?

Wait for student assent.

Researcher: My name is Pam Lau. I work at Middle West Community College. Last fall semester, you took CRS 099 in a special class where all the students and you shared a common career or major interest. The instructor chose reading materials that were connected with your career/major interest and helped you learn reading strategies that would be needed when you take college level courses in your chosen program. I am conducting a study to learn from students about their experience in these special CRS 099 classes.

The purpose of my phone call is to invite you to participate in a focus group interview. In this group setting, you and other students will share your experiences in the special CRS 099 class and how it has impacted your performance in college. What I learn from you will be used to improve CRS 099 for future students.

During the interview, I will ask 4 to 5 questions to guide the discussion. You will respond by describing your experiences. Your answers are voluntary. This means that you can choose not to answer a question. What you say will not affect your grades or performance in any current or future class at Middle West. I will keep your identity confidential. This means that you will not be directly connected with any of the answers I collect.

Do you have any questions about what I have said so far?

Pause for student response. Clarify as needed.

Researcher: Participation in this focus group is limited to students who are at least 17 years old. Are you 17 already? Would you like to participate in this focus group interview?

If the student indicates a willingness to participate and that he or she is at least 17 years old:

Researcher: The focus group interviews are scheduled of the following days/times:

- Thursday, (month/day), 12 – 12.50 p.m. in Room xxx
- Monday, (month/day), 1 – 1.50 p.m. in Room xxx
- Wednesday, (month/day), 11 – 11.50 a.m. in Room xxx

Would any of these times fit into your schedule?

Pause for student response.

Researcher: Great. I will put you down for (date) at (time) in (room). I will send you an email to your MWCC student email address as well as to your Cobra Learning account to remind you of day/time and place for your focus group interview.

Pizza and pop will be served, so you do not have to worry about getting lunch that day.

If you have questions about the focus group interview, you may call me at 373-3709 or simply reply the email that I will send you.

If the student declines to participate:

Researcher: Thank you for listening. I wish you the best as you continue with your classes this semester.

APPENDIX B: INFORMED CONSENT

Dear Middle West Student:

Thank you for agreeing to participate in this study. The purpose of this focus group interview is to gather information about your experiences in your CRS 099 class where your instructor linked the reading course material to your declared major in criminal justice, business, health professions, automotive technology, or diesel power equipment technology. Participation in this interview is voluntary. This means that you do not have to answer any questions if you do not wish to. Your responses will have no effect on any course grade, academic assessment or performance in any current or future classes at Middle West Community College. You may also end your participation in this interview at any time.

All your responses in this interview will be kept confidential. The results of this survey will be presented in a summary of all results. You will *never* be directly identified in any way. We have xxxx, as our notetaker today. S/he will record your answers for the purpose of this study and has signed an agreement to keep what you say confidential. Even though your answers will be kept confidential, please refrain from discussing personal or sensitive private matters. If you inadvertently mention personal or sensitive matters, the comments will be deleted from the written records.

If you have any questions about this interview and the study that it is a part of, or if you wish to learn more about the results, please contact Pam Lau. Her office is in A114. She can also be reached by phone at 217/373-3709 or via email at plau@xxx.edu.

If you have any concerns or complaints about this study, please contact the Institutional Review Board at Ferris State University, Big Rapids, Michigan, by phone at 231/591-2533 or via email at IRB@ferris.edu.

Student: I agree to participate in this focus group. I am at least 17 years old. I give my informed consent.

Signature

Date

Additional optional consent

Student: I give permission for Pam Lau to see my CRS 099 class assignments. I give my consent for her to quote excerpts from my assignments at public presentations or in publications. I understand that my real name will not be used when my work is quoted.

Signature

Date

[Additional consent for students below 17 years old.]

If applicable:

Signature of person legally
authorized to give consent:

Signature

Date

Printed name of the person legally
authorized to give consent:

Printed Name

Date

APPENDIX C: FOCUS GROUP QUESTIONS

Focus Group Questions

In fall semester 2013, you took CRS 099 together with students who started college with similar academic interests. You had identified your interest in specific career or transfer programs. Your CRS 099 instructor linked the reading material as well as the reading skills to what is required to succeed in your chosen program. I would like to ask you some questions about your experience in CRS 099.

Note-taker and confidentiality: XXXX is present today as our note-taker. S/he will record your answers for the purpose of this study and has signed an agreement to keep what you say confidential. Even though your answers will be kept confidential, please refrain from discussing personal or sensitive private matters. If you inadvertently mention personal or sensitive matters, the comments will be deleted from the written records.

1. Think back to the time when you chose classes for fall semester 2013. Why did you decide to take CRS 099 with students who had the same career or major aspirations as you?

[Question objective: Understand student motivation in choosing a contextualized section over a traditional section.]

2. Describe some of the things (strategies, skills, ideas) you learned in CRS 099. In your experience, how did these lessons help you as a student? In what ways, if any, did these lessons help you with classes in your major?

[Question objective: Understand student perceptions about the usefulness/relevance of a contextualized class]

3. Your CRS 099 class was designed for you to be with students who shared the same academic/career interests. The learning activities were planned to be relevant to these interests. How did this affect your motivation as a student in CRS and your performance in the class?

[Question objective: Collect data on possible impact on motivation; how students connect motivation with class performance]

4. How well did CRS 099 prepare you for taking a college-level course in your career program or major this semester?

[Question objective: Collect data on impact on confidence; perceptions of good preparation will be regarded as an expression of confidence.]

5. Would you recommend that new CRS 099 students take a section that is connected to their chosen career program or major? Why or why not?

[Question objective: Draw forth other relevant information that the prior questions may not have extracted.]

APPENDIX D: CONFIDENTIALITY AGREEMENT,
NOTE-TAKER AND/OR TRANSCRIPTIONIST

APPENDIX E: INSTITUTIONAL REVIEW BOARD APPROVAL

To: Dr. Roberta Teahen and Pamela Lau
From: Dr. Stephanie Thomson, IRB Chair
Re: IRB Application #140207 (Title: *The Impact of Contextualized Curriculum in Developmental Reading Classes on the Academic Outcomes of Developmental Reading Students*)
Date: April 4, 2014

The Ferris State University Institutional Review Board (IRB) has reviewed your application for using human subjects in the study, "*The Impact of Contextualized Curriculum in Developmental Reading Classes on the Academic Outcomes of Developmental Reading Students*" (#140207) and approved it as expedited –category 2G from full committee review. This approval has an expiration date of one year from the date of this letter. **As such, you may collect data according to procedures in your application until April 4, 2015.** It is your obligation to inform the IRB of any changes in your research protocol that would substantially alter the methods and procedures reviewed and approved by the IRB in this application. Your application has been assigned a project number (#140207) which you should refer to in future communications involving the same research procedure.

We also wish to inform researchers that the IRB requires follow-up reports for all research protocols as mandated by Title 45 Code of Federal Regulations, Part 46 (45 CFR 46) for using human subjects in research. We will send a one-year reminder to complete the final report or note the continuation of this study. The final-report form is available on the [IRB homepage](#). Thank you for your compliance with these guidelines and best wishes for a successful research endeavor. Please let us know if the IRB can be of any future assistance.

Regards,

Ferris State University Institutional Review Board
Office of Academic Research, Academic Affairs



2400 West Bradley Avenue, Champaign, IL 61821-1896
217/351-2200 • www.parkland.edu

Ms. Pam Lau
Dean of Academic Services
Parkland College
2400 West Bradley Avenue
Champaign, Illinois 61821

February 13, 2014

Dear Pam:

Thank you for completing Parkland College's research proposal form and submitting your supporting documentation. Please allow this letter to serve as official notification that your materials have been reviewed and approved by the Office of Institutional Accountability and Research (IAR). Your documentation show compliance with Parkland College's institutional policy regarding external research projects (3.36.01).

This approval is valid for one year from the date of this letter only for the research activities and subjects described in the research proposal. Any changes to your research protocol need reported to, and approved by, IAR before implementation. You are also required to inform IAR immediately of any problems encountered that could adversely affect the health/welfare of the subjects in this study.

I wish you success with your research. Please let me know if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Kevin W. Knott".

Kevin W. Knott, Director
Parkland College
Office of Institutional Accountability and Research
Phone: 217-351-2239
email: kknott@parkland.edu