The Effects of Assessment Preparation for the Improvement of Course Placement and Student Satisfaction at Tacoma Community College

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THE EFFECTS OF ASSESSMENT PREPARATION FOR THE IMPROVEMENT OF COURSE PLACEMENT AND STUDENT SATISFACTION AT TACOMA COMMUNITY COLLEGE

A Project

Presented to

The Graduate Faculty

Central Washington University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Education

Higher Education Administration

by

Kari Twogood

Winter 2015
ABSTRACT

THE EFFECTS OF ASSESSMENT PREPARATION FOR THE IMPROVEMENT OF
COURSE PLACEMENT AND STUDENT SATISFACTION AT
TACOMA COMMUNITY COLLEGE

by
Kari Twogood
February 2015

There is significant focus on graduation rates and persistence of students in higher education. Lengthy sequences of developmental education have been shown to have detrimental effects on the persistence and graduation rates of students. This study reviewed the research that has been performed concerning persistence in developmental education. A survey of incoming or current students was conducted to study the effects of offering an ACCUPLACER® preparation workshop at Tacoma Community College. The survey collected 733 unduplicated responses. The data indicated that students feel more anxiety as a result of attending the workshop prior to taking the ACCUPLACER® assessment. The data proved inconclusive in determining whether the workshop assisted students in improving their assessment scores. The implications of the high stakes nature of assessment are discussed.
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CHAPTER I
INTRODUCTION

Two-year institutions are traditionally open-door institutions that can bring numerous challenges to administrations to improve graduation rates (Hughes & Scott-Clayton, 2011). These institutions (currently referred to as community colleges) take all students who apply for admission. Community colleges in the nation present the easiest access to a college education for those who otherwise may not have the opportunity (Attewell, Lavin, Domina, & Levey, 2006). As a result, community colleges have had to deal with those that arrive underprepared for college level coursework (Hughes & Scott-Clayton, 2011; Rutschow & Schneider, 2010). The most common solution to this problem has been developmental or remedial education programs. Students must persist from quarter to quarter and from year to year in order for them to graduate. Graduation rates are directly related to the persistence of students.

In a preliminary report from the National Center for Educational Statistics (NCES), a study of two-year institutions’ 2009-10 first time student cohorts showed only a 37% graduation rate at four years, 200% of normal time (Ginder, Kelly-Reid, & Mann, 2014). Developmental education is considered a barrier for some students as it delays their ability to get started in college level coursework and their program of choice (Edgecombe, 2011; Jaggars & Hodara, 2011; Rutschow & Schneider, 2011). For other students, it is a way to refresh the academic skills required to be successful in college level coursework, and therefore, successful in achieving their goals of a degree or certificate (Safran & Visher, 2010; Saxon & Morante, 2014). The assessment helps institutions and faculty maintain academic standards (Hodara, Jaggars, & Karp, 2012;
Hughes & Scott-Clayton, 2011). It was found that many community colleges rely solely on a single test score for placement (Attewell, et al., 2006; Hodara, et. al., 2012; Hughes & Scott-Clayton, 2011). Hodara, Jaggars and Karp (2012) stated that the goals of developmental education are three fold: “to ensure that students are successful in their first college level courses; to provide students with the additional preparation needed to succeed in later courses; and to enable institutions to maintain standards of academic quality and rigor in college courses” (p. 1).

Tacoma Community College (TCC) is a mid-sized urban community college with approximately 8000 students per quarter. An assessment is required by the college for all new incoming first year students. Hughes and Scott-Clayton (2011) found 92% of community colleges in the nation use an assessment test to determine readiness for college level coursework. Assessments are used to “sort students into differing level of difficulty in terms of content instruction” (Hughes & Scott-Clayton, 2011, p. 329). The assessment that TCC uses is the ACCUPLACER®, by the College Board, a nationally recognized exam to assess the students’ academic skills in English, Reading, and Math.

ACCUPLACER® is a computer adaptive placement testing system. ACCUPLACER® has six primary dimensions for placement: reading comprehension, sentence skills, writing, arithmetic, elementary algebra, and college level mathematics (College Board, 2014). Each of these dimensions is composed of multiple-choice items except for writing which requires composing a writing sample (College Board, 2014).

TCC has been offering free English/Reading and Math preparation workshops for just over two years. The original intent for the creation of the ACCUPLACER® preparation workshop was to provide a resource for students to improve placement with
the ultimate goal of having more students test into college level courses, to avoid remedial education requirements. When a student completes the assessment, their scores are used to make a course placement based on institution cut-scores. For example, placement could be at English 85, 95 or college level. Inquiry at the TCC Assessment Center and Institutional Research found that the workshop had not been evaluated. The question of whether the ACCUPLACER® preparation workshop was accomplishing what it intended needed to be answered.

TCC is committed to assisting students persist to graduation, whether that is a certificate or a degree (Tacoma Community College, 2015). TCC began offering an Accelerated Learning Program (ALP) just about a year ago as another effort to assist students in avoiding long delays in developmental education. The ALP has been taking place in developmental English and in developmental Math. The developmental Math program is in partnership with the Carnegie Foundation, a national program called Statway. The ALP at TCC moves students from English 85 (the lowest English placement) directly into English 101 (entry-level English course) following a faculty driven nomination process. The faculties that teach English 85 have the ability to nominate students who have shown not only academic ability, but also motivation, to be successful with the demands of college level coursework. Students are enrolled in an English 101 course that has a mandatory support course attached. Similar programs will be discussed further in the literature review. The Statway program is an inferential statistics course that takes non-science majors through just the material they need to be successful in college level statistics. It is a significantly shorter pathway for students to complete their college level quantitative skills requirements. TCC has continued to bring
innovative ideas to the campus community to help students succeed and achieve their goal of certificate or degree.

Purpose of the Study

The purpose of this study was to examine the effects of participating in the assessment preparation workshop on the anxiety level and placement results for the students at Tacoma Community College. Does participation in a preparation workshop reduce a student's anxiety prior to taking the placement test? Does participation in a preparation workshop improve the student’s placement score? Those that are participating in the study are any college student over the age of 18, current and incoming, who took the ACCUPLACER® at TCC during the designated survey period. There were college students under the age of 18 who did take the survey; their data was discarded due to being under age of consent. The ACCUPLACER® preparation workshop is for any current or incoming college student at TCC. This study examined the survey results of those students who assessed at TCC between September 22 and December 4, 2014. The study specifically looked for students who self reported previous testing, attended a preparation workshop, and post-tested, in order to demonstrate the effectiveness of such an intervention offered by the college to improve students’ placement results as compared to those who have not attended the workshop. The study also compared those students who may be assessing for the first time, but attended the workshop prior to assessment as compared to those who reported that they were assessing for the first time and had not attended a workshop.
Justification

Many students’ first experience with the campus is the assessment. Students complete admission to the institution and then are asked to take an assessment test; many do so without any preparation (Attewell, et. al., 2006; Bailey, 2009; Burdman, 2012; Rutschow & Schneider, 2011; Safran & Visher, 2010). At TCC and other institutions, the student is told that it is impossible to fail the assessment; it is only to determine their skill level in these subject areas (Bailey, 2009; Hodges & Kennedy, 2004; Howell, Kurleander, & Grodsky, 2010; Jaggars & Hodara, 2011; Rutschow & Schneider, 2010; Safran & Visher, 2010; Saxon & Morante, 2014). The high stakes nature of the assessment is not explained to the student (Kerrigan & Slater, 2010; Safran & Visher, 2010; Saxon & Morante, 2014). The assessment is used to determine whether the student has the skills to be successful in college level courses (College Board, 2014). According to Hughes and Scott-Clayton (2010), “Placement exam scores are commonly used not merely as a measure of skills but rather as a high-stakes determinant of students’ access to college level courses” (p. 328).

Research shows that more than 60% of first year community college students enter with at least one developmental level course requirement, the most common being Math (Hodara, et. al., 2012; Hughes & Scott-Clayton, 2010; Jaggars & Hodara, 2011; Rutschow & Schneider, 2011). Kerrigan and Slater (2010) found 98% of the first time students in their study placed into at least one developmental education course.

Developmental education programs are designed to improve and enhance the students’ academic skills for college level coursework (Hodara, et. al., 2012). Lengthy sequences of developmental courses offered at community colleges have been blamed for
creating barriers to the students’ academic accomplishments (Kerrigan & Slater, 2010; Rutschow & Schneider, 2011). Numerous studies looking at developmental education have found that developmental education is negatively associated with students’ success and persistence (Bailey, 2009; Hodara, et. al., 2012; Howell, et al., 2010; Jaggars & Hodara, 2011; Rutschow & Schneider, 2011). A study by Attewell, Lavin, Domina, and Levey (2006) found that although community colleges were more likely to place students into developmental education courses, those students who completed those courses were actually more likely to persist to graduation, though it did take longer. The disadvantages of these lengthy sequences of developmental education include: non-college level courses that cost money (Howell, et al., 2010), delays in taking college level or major courses that increase time to degree (Bailey, 2009; Burdman, 2012; Howell, et al., 2010; Jaggars & Hodara, 2011) and put the student at risk of not persisting to graduation (Jaggars & Hodara, 2011; Kerrigan & Slater, 2010).

According to the researcher’s perception, there is a dearth of research available that studies intervention efforts to assist students to prepare for the placement exam and potentially avoid developmental education requirements. Hodara, et al. (2012) provided information on institutions and programs from nine states regarding remediation efforts. Kerrigan and Slater (2010) provided their research through the Achieving the Dream initiative for El Paso Community College that has high school students pre-testing, completing an intervention, and post-testing. Howell, Kurlaender and Grodsky (2010) studied the Early Assessment Program at California State University - Sacramento that has high school students completing an assessment and then an intervention prior to entering postsecondary education.
Accelerated learning programs are one option in the reform effort towards developmental education that is currently being investigated by institutions across the nation (Edgecombe, 2011; Venezia & Hughes, 2013). For those students who are assigned to developmental education, an accelerated learning program may help them move into college level coursework in less time and therefore increase their persistence to graduation. Venezia and Hughes (2013) reported on a couple of acceleration programs offered in California and Maryland. TCC has been experimenting with accelerated learning programs. Students who are assigned to the lowest level of developmental education in English at TCC may have the opportunity to accelerate to college level English if they show they have the cognitive and non-cognitive skills to be successful.

Research Hypothesis

Research has shown an increase in the numbers of students going to college who are in need of some form of remediation (Bettinger & Long, 2005; Hodara, et. al., 2012; Jaggars & Hodara, 2011; Kerrigan & Slater, 2010; Miller & Murray, 2005; Rutschow & Schneider, 2011; Scott-Clayton, 2012). Students are placing into developmental courses more often when they are not preparing for the entry assessment, causing additional time to degree, costs and enhanced risk for drop out (Attewell, et. al., 2006; Hodara, et. al., 2012; Hodges & Kennedy, 2004; Rutschow & Schneider, 2011). I hypothesized that a student, who completes as little as a single two-hour subject specific session focused on preparation for the ACCUPLACER® assessment, will experience reduced anxiety prior to taking the assessment test. The study presumed that a student who completes the workshop will improve their assessment score. How does having students complete an assessment preparation workshop improve the outcome of the assessment score?
Attendance at an ACCUPLACER® preparation workshop helps the student to understand the high stakes nature of the test and encourages them to spend some time preparing for the test. An improved score potentially results in fewer developmental courses, lower costs, and less time to degree, and therefore, increased persistence by the student.

Limitations

This project was limited by time and information. The survey only provided basic information for those students who took the survey as part of the ACCUPLACER®. Since the survey period for the study was only for a few weeks during fall quarter, the survey only captured those that were planning to start classes at TCC winter term or after and those students re-assessing for future terms. The data was an archival convenience sample; it did not include any identifying information, which did not allow for follow up. A convenience sample does not control for prior experience, achievement or any other characteristics. There was an inability to minimize differences between comparison groups. Without establishing a quasi-experimental process, there is no way to control for variables. No causal links can be established due to the inability to control variables. The inaccuracy of self-reporting will also prevent establishing causal links.

Definition of Terms

*Developmental (Remedial) Course:* a course that is below college level.

*Assessment:* is the testing system, ACCUPLACER® utilized to establish the student's academic skill level in the subjects of English, Reading, and Math.

*Improvement:* is used throughout this project to be an increase in score.

ACCUPLACER® Write Placer score change by 1 and Math score change by greater than or equal to 5 points in category.
College Level Course: a course which is 100 level or above.

Persistence: continuing from one quarter to the next, from one year to the next, with the intent of completing a certificate or degree.

Motivation: an uncontrollable variable related to student's personal drive for achievement.

Non-cognitive skills: considered to be motivation, critical thinking, commitment to college, and resiliency.

The following chapter will review and discuss the findings of a limited literature review on the topic of assessment, assessment preparation, and developmental education.
CHAPTER II
LITERATURE REVIEW

Introduction

Developmental education provides access to college for those that otherwise may have been denied. The students that are over-represented in developmental education are students of color, low income and English language learners (Attewell, et. al., 2006; Koski & Levin, 1998; Maitre, 2014). This is representative of the same group who are at higher risk for dropout, according to Tinto (2012). Howell, Kurleander and Grodsky (2010) stated “pronounced racial/ethnic and gender differences in the probability of requiring remediation” (p. 739-740). Black more than white were found to be placed into remedial English and women more than men were placed into remedial Math (Howell, et. al., 2010). Jaggars and Hodara (2011) raised concerns of the achievement gap between low income and more affluent peers that begin as early as high school.

Research has shown that a lengthy sequence of developmental education creates higher rates of drop out (Edgecombe, 2011; Jaggars & Hodara, 2011). Bettinger and Long (2007) indicated that being placed into developmental education might lead to lower self-esteem, higher frustration, and increase rates of drop out. Venezia and Hughes (2013) reported on student frustration with the delays caused by lengthy sequences of developmental education.

The bulk of the research that relates to assessment preparation is about preparing high school students to be college ready; however, the average age of community college students is 24 to 29 (Mullin, 2012) so the norm is the non-traditional student. There is research on programs in California, Texas, Georgia, and North Carolina that prepare high
from California, North Carolina, New York, and Texas, and acceleration programs. Finally, there will be a discussion of considering multiple measures in placement decisions.

High Stakes of Assessment

Even though the assessment provides only a narrow view of student readiness for college, it is the most common determinant of college readiness used by more than 90% of the community colleges in the nation (Conley, 2010; Hughes & Scott-Clayton, 2011). Many researchers found that students were unaware of the high stakes nature of the assessment (Bailey, 2009; Bettinger & Long, 2005; Burdman, 2012; Conley, 2010; Hodara, et al., 2012; Hughes & Scott-Clayton, 2011; Jaggars & Hodara, 2011; Kerrigan & Slater, 2010; Safran & Visher, 2010; Saxon & Morante, 2014; Saxon, Levine-Brown, & Boylan, 2008; Scott-Clayton, 2012; Venezia, Bracco, & Nodine, 2010). Students did not understand that this test would possibly prevent them from taking college level coursework upon entering their first term (Hodara, et al., 2012; Hughes & Scott-Clayton, 2011; Jaggars & Hodara, 2011). Hughes and Scott-Clayton (2011) found that students reported they were “unprepared for the content and format of tests” (p. 331).

Researchers and students believe that assessment tests create a barrier to accessing college level courses (Burdman, 2012; Rutschow & Schneider, 2010; Venezia & Hughes, 2013). Safran and Visher (2010) found that most students took the assessment without preparation, under less than ideal conditions that could have played a role in the student not doing well. Less than ideal conditions could be student impatience, test fatigue, or lack of time to spend on the assessment due to other obligations. Kerrigan and Slater
(2010) demonstrated that a lack of knowledge about the assessment and its importance affected the results for students.

Hodara, et al. (2012) reviewed programs from around the United States that were making efforts at preparing students for the assessment process. They found that many institutions provided information and links on their website for preparing for the assessment but did not actively promote their use. TCC has numerous links and materials available for download on their website to help students prepare for the ACCUPLACER® assessment. Venezia, Bracco, and Nodine (2010) included the student perspective in their project and reported that some students assumed that they should not prepare as it was cheating.

Hughes and Scott-Clayton (2011) recommended that institutions explain the purpose and necessity of the placement in terms that is easily understood by students from all backgrounds. Hodara, et al. (2012) did find a few institutions in Georgia that attempted to notify students about the importance of preparation by having them sign a contract prior to taking the assessment.

Students arrive at college under prepared in many ways – not just academically (Hughes & Scott-Clayton, 2011; Mattern & Packman, 2009; Miller & Murray, 2005; Saxon & Morante, 2014). Miller and Murray (2005) determined the following factors to play a role in student placement and persistence: individual factors that include cognitive, neurological, health or psychological challenges; familial factors that include disturbed family functioning, dependent care, financial resources, and family values regarding education; and social factors that include peer pressure and conflicting ethnic and cultural values. Other risk factors that influence student persistence include personal autonomy,
self-confidence, commitment to college, study skills, social competence, ability to deal with racism, motivation, and resiliency (Miller & Murray, 2005; Saxon & Morante, 2014). Prior academic performance and length of time out of school also influences the students’ placement and persistence (Kerrigan & Slater, 2010; Saxon & Morante, 2014). Consideration should also be given to test anxiety and computer anxiety or a lack of computing skills (Hodges & Kennedy, 2004). All of these factors should be taken into consideration during the entry process, especially prior to assessment (Hodges & Kennedy, 2004; Miller & Murray, 2005).

Lengthy sequences of developmental education offers more than just delays in graduation, it adds costs. Remedial education costs students about $708 to $886 million in tuition and fees per year, as stated in the Strong American Schools report (2008). Bailey (2009) and Attewell, et al. (2006) concluded that less than 25% of students in their sample, who enrolled in developmental education, completed a degree within eight years of enrollment. Bailey (2009) reported that 40% of those who did not take a developmental education course completed a degree in eight years. Developmental education requirements can be directly attributed to adding time to a degree (Rutschow & Schneider, 2010).

Boatman and Long (2010) and Jaggars and Hodara (2011) research showed that placement into developmental education challenges students’ motivation and discourages persistence. Bettinger, Boatman and Long (2013) indicated that remedial education can help or hinder depending on level of academic preparedness. Some students reported their disappointment at being placed into developmental education, which they saw as returning to high school (Bailey, 2009). In their study, which was conducted with the
City University of New York (CUNY) system, Jaggars and Hodara (2011) indicated that 16% of those students who were placed into developmental education only attended one semester. The CUNY system experienced higher attrition rates for those placed into developmental English versus Math (Jaggars & Hodara, 2011). Bailey (2009) conveyed that 68% who enroll in developmental English completed all required courses but only 30% of those placed into developmental math complete required courses. Jaggars and Hodara (2011) also conveyed that 26% of those who failed developmental English dropped out. The ‘‘...most commonly-encountered barrier was failing a developmental course’’ (Jaggars & Hodara, 2011, p. 37). Bailey, Jeong and Cho (2010) reported on research conducted through Achieving the Dream (a program for community college improvement funded by the Lumina Foundation and Gates Foundation), that students in developmental education were more likely to drop-out and not complete a degree. These studies lacked any data on students who assessed into developmental education but never started classes (Bailey, Jeong & Cho, 2010).

A lack of standardization for what determines college readiness was found by many researchers to be a challenge for students especially when multiple options were available in their region (Attewell, et al., 2006; Bailey, 2009; Hughes & Scott-Clayton, 2011; Kerrigan & Slater, 2010; Jaggars & Hodara, 2011). In most cases, the institution determines the cut scores for what is determined to be college ready (Attewell, et al., 2006; Bailey, 2009; Safran & Visher, 2010). One study found that students would shop for the best outcome for their placement, finding the school that would give them the best placement (Conley, 2010). The Washington State Board for Community and Technical Colleges (2015) created a reciprocity policy a few years ago. This policy requires the
institutions to accept the placement given at another institution even if the college readiness standards at the other institution are lower (Washington State Board for Community & Technical Colleges, 2015). For example, if a student assesses into college level English at Highline College, Bellevue College would have to accept the placement even though at Bellevue a student with the same score would be placed into developmental English (Washington State Board for Community & Technical Colleges, 2015).

Questions about Assessment Validity

Mattern and Packman (2009) stated “the main goal of placement testing is to enroll students in courses that are aptly challenging to their current knowledge level,” (p. 1). Mattern and Packman (2009) conducted a meta-analysis of ACCUPLACER® placement studies to determine test validity; accurate placement was between 58 and 84 percent. Researchers such as Hodara, et al. (2012) and Hughes and Scott-Clayton (2011) questioned the validity of the assessment tests currently in use at the community colleges. Hodara, et al. (2012) questioned the accuracy of a single skills test to measure the actual college readiness of the student, including non-cognitive preparedness. The assessment test can only be used to predict course success (College Board, 2014). Mattern and Packman (2009) indicated that there is a “moderate to strong relationship between scores and course success” (p. 1). Saxon and Morante (2014) questioned validity of the assessment tests to predict student success; they claim the assessment test should only be used to identify current academic skills. Scott-Clayton (2012) found assessment tests more predictive of success in Math than in English.
It has already been established that these tests are used broadly in the community college system and that the system relies on them to place students into courses, thus predicting the student’s ability to meet the challenges of the course (Hughes & Scott-Clayton, 2011). The institution is setting the cut-scores by which the placements are made and therefore there must continue to be some question as to the validity of the placements, based on institutional set standards, for student success (Attewell, et al., 2006). Scott-Clayton (2012) conducted a thorough examination of the predictive validity of the assessment tests and found that they have limited predictive validity.

Jaggars and Hodara (2011) and Fulton, Gianneschi, Blanco, and DeMaria (2014) argued for finding a balance between efficiency and effectiveness in standardize assessment tests. The standardized assessment test creates efficiency in placing thousands of students each quarter (Jaggars & Hodara, 2011). The assessment can be administered with a minimum of resources, processed and scored by computer, and applied instantly to give the student a placement (College Board, 2014). Jaggars and Hodara (2011) contended that the efficiency of standardized placement must be balanced against the effectiveness of more predictive diagnostic assessment.

Remediation Avoidance

The challenge that students experience being placed into developmental education, the delays in graduation, and the high costs of remediation, one solution is remediation avoidance (Bailey, 2009; Rutschow & Schneider, 2010). The focus of most of the research has been on high school students meeting college readiness standards. Administering placement exams at local high schools provides students, parents, faculty, and administrators with feedback regarding academic preparedness (Hodara, et al., 2012;
Hodara, et al. (2012) found a limited number of postsecondary institutions providing preparation tools to high school students following the assessment test in high school.

Howell, et al. (2010) and Rutschow and Schneider (2010) reviewed the Early Assessment Program (EAP) in use in California. The EAP provides an option for high school juniors to take an assessment test administered by California State University (CSU) as a component of the California Standards Test that all high school juniors complete (Howell, et al., 2010). The results of the assessment provided information about the level of college readiness and recommendations and programs available to the student during their senior year to remediate those deficiencies (Howell, et al., 2010; Rutschow & Schneider, 2010). The EAP has three goals: to identify students before their senior year who need additional preparation in English and Math to meet college readiness standards; to provide information about college readiness standards and opportunities for remediating deficiencies; and to motivate students to take steps in their senior year to meet college readiness standards (Howell, et al., 2010). Howell, et al. (2010) found that participants in EAP “reduced average student’s probability of needing remediation at CSU by 6.1% in English and 4.1% in Math” (p. 726).

Under the Achieving the Dream initiative, El Paso Community College, in collaboration with others, developed the college readiness protocol (a program administered to high school students) (Kerrigan & Slater, 2010). The program has high school students complete an admissions application, learn about and prepare for the ACCUPLACER® test, take the ACCUPLACER® test, and review placement with counselors (Kerrigan & Slater, 2010). If the student needs remediation, they are provided
the opportunity at the high school prior to re-testing (Kerrigan & Slater, 2010). Kerrigan and Slater (2010) reported that fewer students are placed into developmental education after the college readiness protocol was established. “The proportion of students placing in the college-ready range on the ACCUPLACER® assessment increased from 3 to 5 percent in math…and from 51 to 66 percent in writing” (Kerrigan & Slater, 2010, p. 1).

City University of New York (CUNY) has implemented a system of instructional interventions for high school students called At Home in College (Fulton, et al., 2014; Jaggars & Hodara, 2011). These interventions are provided to those who had not tested college level on the New York Regents exam (Fulton, et al., 2014). Re-tests in CUNY system requires completion of instructional interventions, some of which are offered online (Jaggars & Hodara, 2011).

There was quite a bit of discussion and recommendation from the research for aligning K-12 graduation requirements with college readiness standards (Bettinger & Long, 2005; Conley, 2010; Hodara, et al., 2012; Howell, et al., 2010; Jaggars & Hodara, 2011; Venezia, et al., 2010). Most researchers argued that there is a lack of connection between high school graduation standards and college readiness standards. The colleges that worked with the local school districts, implementing college preparation strategies are seeing higher levels of college readiness as compared to pre-implementation (Conley, 2010; Fulton, et al., 2014; Hodara, et al., 2012; Kerrigan & Slater, 2010).

While most of the avoidance research has been focused on bringing high school students up to standards of college readiness, there are brief overviews among the research of working with older, non-traditional students, to give them an opportunity to get college ready (Kerrigan & Slater, 2010). It is important to note that the community
colleges see more students who have been away from school for a number of years (non-traditional student) than the traditional student (Mullin, 2012). The average reported age of a community college student is between 24 and 29 (Mullin, 2012). Fulton, et al. (2014) reported that Ohio has implemented mandatory preparation intervention, which includes a facilitated course and study guides. Hodara, et al. (2012) discussed North Carolina’s requirements for re-testing. North Carolina created online courses for English, Reading, and Math that are required prior to re-testing (Hodara, et al., 2012). In North Carolina, they found “about 60% tested at least one level higher in English... and 35% of students tested at least one level higher in math” after completing the review sessions (Hodara, et al., 2012, p. 7). They also found that those “students had similar or higher pass rates for the courses they re-tested into” (Hodara, et al., 2012, p. 8). Kerrigan and Slater (2010) presented an overview of the Pretesting Retesting Educational Preparation (PREP) program that El Paso Community College provides for the older non-traditional college student. The PREP program includes a two-hour overview of the ACCUPLACER® test, a diagnostic assessment, and a review of results with each student to prepare them for the test (Kerrigan & Slater, 2010). Instructional workshops, tutoring and online modules are available to refresh skills prior to taking ACCUPLACER® test (Kerrigan & Slater, 2010).

Acceleration Programs

Acceleration programs allow students to complete developmental education requirements quickly, or to take college level courses with mandated support services upon entering college (Edgecombe, 2011; Maitre, 2014). Acceleration programs typically involve new models of instruction and curricula (Edgecombe, 2011; Maitre,
2014). Edgecombe (2011) covered a few promising acceleration programs such as compressed courses and mainstreaming with supplemental support. Compressed courses take the curriculum from a normal sequence of developmental education and condense it into a single term (Edgecombe, 2011). The contact hours are maintained so students are in longer classes to cover the same amount of work in the normal developmental sequence (Edgecombe, 2011). Sheldon and Durdell (2010), as reported by Edgecombe (2011), found higher course completion rates for the compressed format. Burdman (2012) also reported on research that is showing that students who participate in accelerated courses are more likely to take and pass entry-level college courses. Burdman (2012) posited that the reason might be that there are fewer exit points and fewer chances for disappointment and discouragement. Hodara, et al. (2012) considered acceleration programs a great option for those that may have been under-placed by the assessment test. The student is able to quickly satisfy the requirements of the institution and show that they can succeed in college level coursework. Maitre (2014) and Venezia and Hughes (2013) reported on an acceleration program in California that shows students were 17 to 22 percent more likely to have completed an entry level English course than students who took the traditional developmental sequence.

Mandatory companion classes when students are mainstreamed into introductory college level courses (linked courses) are another form of acceleration that has evidence of improved outcomes (Burdman, 2012; Edgecombe, 2011). Jenkins, Jaggars, Roksa, Zeidenberg, and Cho (2009) reported that for those that placed into the highest level of developmental courses, going directly to college level courses with additional support are showing success rates equal to those that assessed at college level. Koski and Levin
(1998) found evidence as early as the 1990s that linked courses improve student persistence, though it still has not progressed to wide implementation. Burdman (2012) found this strategy to be a cost-effective way to assist students, but it has yet to be seen if it is effective for students with much lower assessment scores. Currently these practices are shown to be successful for students who are just below the cut-score for college level placement (Burdman, 2012; Edgecombe, 2011; Rutschow & Schneider, 2010; Venezia & Hughes, 2013). The California Acceleration Project is an example that shows up in the research multiple times, as well as the Accelerated Learning Program (ALP) at Community College of Baltimore County. These programs are using innovative ways to move students into and through initial college level courses with some measure of success (Safran & Visher, 2010; Venezia & Hughes, 2013).

Multiple Measures

Another area that appeared across the research that is showing significant level of success is using multiple measures for placement (Bailey, 2009; Burdman, 2012; Hodara et al., 2012; Hughes & Scott-Clayton, 2011; Saxon & Morante, 2014; Scott-Clayton, 2012; Zachry & Orr, 2009). Traditional assessment has been shown to be a weak predictor of college success (Burdman, 2012; Hughes & Scott-Clayton, 2010; Scott-Clayton, 2012). Assessment tests are not the only tool to use for placing students. Many researchers advocate for a multiple measure approach to placement, especially for underserved populations (Bailey, 2009; Burdman, 2012; Hodara et al., 2012; Hughes & Scott-Clayton, 2011; Saxon & Morante, 2014; Scott-Clayton, 2012; Zachry & Orr, 2009). Hughes and Scott-Clayton (2011) suggested using a more nuanced approach that considers other aspects of the student’s motivation and abilities. Assessment measure
academic skill at that point in time, they do not measure motivation and critical thinking (Bailey, 2009; Burdman, 2012; Hodara, et al., 2012; Zachry & Orr, 2009). Burdman (2012) argued that high school grades are better predictors of college success, though the question regarding the shelf life of these grades has not been answered. Boylan (2009) developed an entire model called Targeted Interventions for Developmental Education Students (T.I.D.E.S.) that enables advisors to make placement and intervention recommendations based on multiple measures. The challenge with multiple measures is the resources that it takes to be implemented and cost thereof for the institution (Hodara, et al., 2012). Hodara, et al. (2012) did find that the use of multiple measures in practice at small institutions have been effective.

Summary

The challenge of college for all is in the apparent lack of preparation for the rigors and demands of college level coursework (Howell, et al., 2010). Establishing a process whereby students are fully informed of the high stakes nature of the assessment and the importance of preparing cannot be understated (Bailey, 2009; Bettinger & Long, 2005; Burdman, 2012; Conley, 2010; Hodara, et al., 2012; Hughes & Scott-Clayton, 2011; Jaggars & Hodara, 2011; Kerrigan & Slater, 2010; Safran & Visher, 2010; Saxon & Morante, 2014; Saxon, et al., 2008; Scott-Clayton, 2012; Venezia, et al., 2010). Students need to understand how important the assessment is, not take it lightly, and prepare accordingly (Bailey, 2009; Burdman, 2012). The research has shown that working with secondary schools to assist students, parents, faculty and administrators understand how college readiness is defined is imperative for the benefit and success of the traditional student (Hodara, et al., 2012). Resources and tools for the non-traditional student are just
as important, as they make up the larger percentage of community college students (Mullin, 2012). Utilizing multiple measures in making placement decisions is one way to ensure the best possible outcome for all students (Bailey, 2009; Burdman, 2012; Hodara et al., 2012; Hughes & Scott-Clayton, 2011; Saxon & Morante, 2014; Scott-Clayton, 2012). The net result of these actions could be improved placement and persistence for the student (Rutschow & Schneider, 2010).

In the event the student is placed in developmental education, having options for accelerating into college level courses could provide the motivation needed to persist (Edgecombe, 2011; Maitre, 2014). There is conflicting research regarding the success rates of students completing developmental education and initial college level courses (Burdman, 2012; Rutschow & Schneider, 2010). The research has presented evidence that long sequences of developmental education are detrimental to student persistence (Bailey, 2009). However, research has also shown that students who do complete developmental education are better prepared for their college level coursework (Attewell, et al., 2006). Persistence through developmental education, into the major and on to graduation is what all institutions are seeking (Rutschow & Schneider, 2010). Colleges must set the student up for success from the beginning and that includes preparing for the entry assessment and placement process (Rutschow & Schneider, 2010).

The next chapter will discuss the methods used for this research study. The survey, its components and how the survey was administered.
CHAPTER III

METHODS

This was a causal-comparative (ex-post facto) study between those students who prepare for the ACCUPLACER® assessment by attending the TCC ACCUPLACER® preparation workshop (Group 1) and those who do not attend a workshop (Group 2). This study will examine the effectiveness of the TCC ACCUPLACER® preparation workshop to prepare students for the assessment. The method of data collection that was used was a survey administered to all students taking the ACCUPLACER® assessment at TCC between September 22, 2014 and December 4, 2014. This survey tool was developed by Kari Twogood – Masters Candidate and the Program Director of Assessment at TCC. It was reviewed by the CWU Human Subject Review Board (Appendix B) and the TCC Institutional Research department (Appendix C). This survey was exclusively administered electronically; however, an example of the survey can be found in Appendix A. The survey asked the student to rate their confidence level, anxiety level, and preparedness for the assessment on a 1 – 5 Likert scale (question 8 a – d), followed by their perceptions of the preparation workshop (question 9 a – c), if they stated previously that they had attended a workshop. The survey also asked how many hours they prepared for the assessment (question 10), asked the student whether they prepared for the assessment using the internet (question 11) or TCC tools (question 12).

The results for participants under the age of 18 were removed as they were under the age of consent (approximately 300). All respondents who skipped the survey were also removed prior to analysis (N = 5). Those that did not complete the survey were those assessing for a different institution or were completing special tests and not the
ACCUPLACER® assessment. Additionally, for statistical analysis, those that took the survey and assessment more than once during the designated survey period were analyzed separately (N = 108). Primary analysis of the unduplicated group (N = 733) was completed using a t-test, z-test, standard deviation, mean, median, and mode for questions using the Likert scale, questions 8 & 9.

Sample

A convenience sample was selected for this study. Those that participated in the study were any college students over the age of 18, current and incoming, who took the ACCUPLACER® assessment, at TCC during the designated survey period. The study was divided into two groups. Group one were those students who self reported, on the survey, attending an ACCUPLACER® preparation workshop (N = 108). Group two were those students who reported not attending a workshop (N = 625). The TCC student population includes students between the ages of 16 and 65 with the largest percentage (47%) in the 20 to 29 range (Tacoma Community College, 2015). Ethnicity breakdown is typically 45% white, 21% Asian or Pacific Islander, 10% Black or African American, 9% Hispanic, 1% Native American, and 14% unknown answer (Tacoma Community College, 2015). Gender is 62% female, 37% male, and less than 1% prefers not to answer (Tacoma Community College, 2015).

Explanation of Procedures

The survey was administered as part of the ACCUPLACER® assessment. Prior to entering the testing room, the student was provided an informed consent and information regarding the assessment process at the check-in desk at the Assessment Center. Upon entering the testing room and getting to their assigned testing computer, the student
would first take the survey and then proceed to the assessment exam. The survey results were then downloaded by the Assessment Center Program Director, sorted, identifying information removed and then forwarded to the researcher.

Limitations

Possible extraneous variables that might affect the results include completion of previous coursework, previous assessment attempts, time out of school, and age range. Uncontrollable variables that may affect the results are motivation, self-reporting, and personal perception of anxiety. Threats to internal validity may come from subject characteristics, testing bias, and regression. There may be some selection bias, as not all variables were controlled, such as age, gender, previous coursework, and previous testing. There may be threats to validity, as some of the participants will have previously taken the assessment (pre-test). Just taking the assessment a second time would seem to result in some improvement. According to Fraenkel, Wallen & Hyun (2012) “on average, the group will score closer to the mean on subsequent testing regardless of the treatment or intervention” (p. 179).

In the following chapter, the data collected with the survey will be reviewed and analyzed and the implications of the results discussed.
CHAPTER IV

RESULTS

All data was received in an Excel spreadsheet, sorted and without identifying information (N = 1153). The sort was completed prior to removing identifying information so that duplicated survey results could be separated. The first step of the analysis was removing all respondents under the age of consent (under 18) and who did not complete the survey (approximately 303). Using Excel formulas and SPSS software the data was analyzed. Analysis had to be accomplished separating duplicated respondents (N = 117) from the unduplicated (N = 733). There were participants who took the assessment twice in the survey period (N = 108) and three or more times in the survey period (N = 9). A review of their data found many errors that made it difficult to combine results for analysis. Errors included changed responses in ethnicity and years out of school. There were also missing survey results or conflicting responses. All duplicated respondents were analyzed separately. This left a study sample of 733 unduplicated respondents for primary analysis. Of the 733 unduplicated participants, only 108 (15%) stated that they had attended the ACCUPLACER® preparation workshop.

Analysis will begin with demographic information to evaluate whether the sample is representative of the greater TCC population. The demographic data that is available for comparison is age, gender and ethnicity. The median age of students at TCC is currently reported as 25.1 (Tacoma Community College, 2015). The gender ratio is currently 62% female and 37% male and ethnicity is reported as 45% white, 21% Asian or Pacific Islander, 10% Black or African American, 9% Hispanic, 1% Native American, and 14% unknown (Tacoma Community College, 2015).
Demographic Data Results

The participants in the survey are somewhat representative of the greater TCC population; see table 1 and figures 1 and 2 below.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>733</td>
<td>18</td>
<td>61</td>
<td>25.72</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>733</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Survey Results – Age

Figure 1: Survey Results - Gender
There is some variance between the survey results and the TCC general population but the differences for this small sample group are nominal. The survey results are slightly skewed in that more males took the assessment than is representative of the general TCC population. Considerably more Black or African American and less Asian, Asian American, or Pacific Islander took the survey than is representative of the general TCC population. The skew in ethnicity could be the result of the broader breakdown of ethnic groups in the survey than is currently tracked by TCC. Ethnicity was a question created by the College Board that was already part of the assessment.

It is interesting to note the self-reported time away from school, see figure 3. Of the 733 unduplicated respondents, 222 (30%) reported having been out of school for more than seven years, the largest proportion of respondents. The next largest group was those that reported being out of school less than one year or still enrolled, 200 (27%).
While outside of the scope of this investigation, it is interesting to note the jump in respondents in the number of years out from school.

<table>
<thead>
<tr>
<th>Time Out from School</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year or still enrolled</td>
<td>200</td>
</tr>
<tr>
<td>1 year or more but less than 3 years</td>
<td>136</td>
</tr>
<tr>
<td>3 years or more but less than 5 years</td>
<td>95</td>
</tr>
<tr>
<td>5 years or more but less than 7 years</td>
<td>80</td>
</tr>
<tr>
<td>7 years or more</td>
<td>222</td>
</tr>
</tbody>
</table>

Figure 3: Survey Results - Time Out from School

The respondents were asked to report whether they had previously assessed. Of the unduplicated respondents (N = 733) 557 reported they had not tested previously and 176 reported they had. Of those that had reported previously tested (N = 176) only 30 (17%) reported having attended an ACCUPLACER® preparation workshop. For the group that reported that this was their first assessment (N = 557) only 78 (14%) reported having attended an ACCUPLACER® preparation workshop. The high number of students assessing only once could indicate that students are not aware they can assess a second time if they are not happy with their placement. The low number of students reporting that they attended a workshop prior to re-assessing indicates that the ACCUPLACER® preparation workshop needs more promotion by the institution.
The survey also inquired as to whether the respondent used the internet or the TCC's website, study guides, or other tools suggested by TCC, to prepare for the assessment. The results showed 392 (54%) respondents used the internet to prepare for the assessment and 352 (48%) reported using TCC tools to prepare for the assessment.

The research question asked, of those that reported using these tools what was the gender breakdown. See figure 4 for the results of the gender breakdown of those that reported using some tools to prepare for the assessment. It is clear that more female respondents than male respondents use some form of preparation for the assessment.

![Graph showing gender breakdown of preparation mode]

**Figure 4: Survey Results - Gender Breakdown of Preparation Mode**

**Descriptive Statistics**

Question 8 was the first question that used a 5-point Likert scale, which can be used for comparison and evaluation of the two groups. This survey data was related to...
the student confidence and anxiety level prior to taking the ACCUPLACER® assessment test. It compared the data from the two groups, those who attended the workshop and those who did not. Table 2 shows the study sample mean, the mean of group one, the mean of group two, standard deviation, mode, and median for question eight, statements a through d. The results indicate that there were differences in the responses to the statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Total Sample</th>
<th>Yes – Group 1</th>
<th>No – Group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>8a. I feel confident about taking the ACCUPLACER® assessment</td>
<td>733</td>
<td>108</td>
<td>625</td>
</tr>
<tr>
<td>8b. I don’t feel as if I have any test anxiety at this time.</td>
<td>3.55</td>
<td>3.46</td>
<td>3.57</td>
</tr>
<tr>
<td>8c. I feel prepared to take the ACCUPLACER® assessment.</td>
<td>3.13</td>
<td>2.96</td>
<td>3.15</td>
</tr>
<tr>
<td>8d. I know what is expected on the ACCUPLACER® assessment.</td>
<td>3.40</td>
<td>3.33</td>
<td>3.42</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Mean-APW*</th>
<th>Stan Dev</th>
<th>Mode</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>733</td>
<td>108</td>
<td>625</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean-APW*</td>
<td>3.55</td>
<td>3.46</td>
<td>3.57</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Stan Dev</td>
<td>.82</td>
<td>1.01</td>
<td>.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3</td>
<td>2.96</td>
<td>3.15</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Mean-APW*</td>
<td>3.40</td>
<td>3.33</td>
<td>3.42</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Stan Dev</td>
<td>.81</td>
<td>.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mode</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Survey Results: Question 8 Mean, Mode, Median, Standard Deviation

Statement 8a: I feel confident about taking the ACCUPLACER® assessment, was found to have no statistical difference between the two groups. The mean of the total sample (N = 733) is 3.55, with the mean for the group that attended a workshop (Group 1) (N = 108) at 3.46 and those that did not attend the workshop (Group 2) (N = 625) at 3.57 (SD = .82). Most respondents agreed with the statement. The first statement that is highly suggestive is 8b: I do not feel as if I have any test anxiety at this time. The
research question asked - Does attending the workshop decrease test anxiety before the ACCUPLACER® test. The total sample mean for this statement was 3.13, with the mean for the group that attended a workshop (Group 1) (N = 108) at 2.96 and those that did not attend the workshop (Group 2) (N = 625) at 3.15 (SD = 1.01). The group that attended a workshop seemed to disagree with the statement more often and needed further analysis to confirm directionality of their responses. Statement 8c: I feel prepared to take the ACCUPLACER® assessment, also showed no statistical difference between the two groups. The mean of the total sample was 3.4, mean of the workshop group at 3.33 and the group that did not attend a workshop at 3.42 (SD = .81). Most of the respondents agreed with the statement. The second statement that is highly suggestive is 8d: I know what is expected on the ACCUPLACER® assessment. The results show that there was a difference reported in knowing what was expected on the assessment between the two groups. The total sample mean for this statement was 3.66, with the mean for the group that attended a workshop (Group 1) at 3.8 and those that did not attend the workshop (Group 2) at 3.64 (SD = .87). This would indicate that those that attended the workshop reported feeling they knew more about the expectations of the assessment.

Directionality of the results was established for question 8b with follow up analysis to test the hypothesis. The hypothesis: those who attend an ACCUPLACER® preparation workshop will report less anxiety prior to the test. It was found that those reporting that they attended an ACCUPLACER® preparation workshop actually reported experiencing more anxiety than those who had not attended a workshop. Of the 733 unduplicated participants, only 108 (15%) stated that they had attended the ACCUPLACER® preparation workshop. The sample mean is 2.96 with the total sample
mean at 3.13 ($SD = 1.01$). Through analysis, it was found that the null hypothesis is rejected, that the alternate hypothesis is to be accepted. An explanation for this will be posited in the next chapter. The response frequency bar graph can be viewed in figure 5. The bar graph shows the number of responses received on the Likert scale. The scale of the sample size is evident.

![Response Frequency Bar Graph](image)

**Figure 5: Survey Results - Question 8b Response Frequency**

Table 3 shows the comparison between female respondents and male respondents from the group who reported attending the ACCUPLACER® preparation workshop ($N = 108$) for question 8. One respondent did not report gender. Male respondents reported slightly more agreement to statement 8a ($M = 3.54$) than female respondents ($M = 3.43$). Male respondents reported more agreement to statement 8b ($M = 3.03$) than reported by female respondents ($M = 2.94$). This would indicate that female respondents disagreed with the statement more frequently, which could be interpreted to mean they were experiencing some level of anxiety prior to the assessment test. Statement 8c, like 8a, shows male respondents ($M = 3.46$) reporting only slightly more agreement than female
respondents ($M = 3.29$). Both male and female seemed to agree with the statement.

Finally statement 8d shows male respondents ($M = 3.73$) reporting slightly less agreement than female respondents ($M = 3.86$). This would indicate female respondents agreed more frequently with the statement.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>8a. I feel confident about taking the ACCU-PLACER assessment</th>
<th>8b. I don't feel as if I have any test anxiety at this time.</th>
<th>8c. I feel prepared to take the ACCU-PLACER assessment.</th>
<th>8d. I know what is expected on the ACCU-PLACER assessment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean-APW Y</td>
<td>37</td>
<td>3.54</td>
<td>3.03</td>
<td>3.46</td>
<td>3.73</td>
</tr>
<tr>
<td>Male</td>
<td>70</td>
<td>3.43</td>
<td>2.94</td>
<td>3.29</td>
<td>3.86</td>
</tr>
<tr>
<td>Mean-APW Y</td>
<td>37</td>
<td>3.54</td>
<td>3.03</td>
<td>3.46</td>
<td>3.73</td>
</tr>
<tr>
<td>Female</td>
<td>70</td>
<td>3.43</td>
<td>2.94</td>
<td>3.29</td>
<td>3.86</td>
</tr>
</tbody>
</table>

*APW = ACCUPLACER® preparation workshop

Table 3: Survey Results: Male to Female Comparison for Group 1

Statement 8d: I know what is expected on the ACCUPLACER® assessment, also showed there was a variance between those that attended the workshop and those that did not. Comparison of the mean values indicates that those that attended a workshop reported that they agreed with the statement more than those who did not attend the workshop. The Group 1 ($N = 108$) mean is 3.8 with the sample mean at 3.66. The mean for the group that reported not attending the workshop was 3.64. These results would indicate those that attended the workshop agreed that they knew what was expected on the ACCUPLACER® assessment.

The respondents that reported that they attended an ACCUPLACER® preparation workshop had three additional survey questions. The respondents were asked to rate their response on a 1 – 5 Likert scale. Table 4 shows the population mean, mode, median, and standard deviation results for question nine. Statement 9a was: I feel that I am more
prepared as a result of attending the workshop. The results indicated that they agree with
the statement \((N = 108, M = 3.76, SD = .89)\). Statement 9b: I knew what to study to
prepare for the assessment as a result of attending the workshop. The results also
indicated that the respondents agree with this statement \((N = 108, M = 3.75, SD = .73)\).
Statement 9c: I feel the instructor helped me get prepared for the assessment. Once
again, results indicated that the respondents agree with this statement \((N = 108, M =
3.62, SD = .82)\). All three statements had a median and mode of 4 on the Likert scale.

<table>
<thead>
<tr>
<th></th>
<th>9a. I feel that I am more prepared as a result of attending the workshop.</th>
<th>9b. I knew what to study to prepare for the assessment as a result of attending the workshop.</th>
<th>9c. I feel the instructor helped me get prepared for the assessment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.76</td>
<td>3.75</td>
<td>3.62</td>
</tr>
<tr>
<td>Median</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Mode</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Mean- Male</td>
<td>3.62</td>
<td>3.76</td>
<td>3.73</td>
</tr>
<tr>
<td>Mean- Female</td>
<td>3.84</td>
<td>3.76</td>
<td>3.57</td>
</tr>
<tr>
<td>Stan Dev</td>
<td>.89</td>
<td>.73</td>
<td>.82</td>
</tr>
</tbody>
</table>

Table 4: Survey Results: Question 9 Mean, Median, Mode, Standard Deviation

Analysis of Assessment Score

It proved to be extremely difficult to analyze the assessment score without
confirmation of identity. The assessment scores were matched prior to being sent to the
researcher. A staff member reviewed the spreadsheet and searched TCC student records
to match records that had previous assessment scores, taken in 2014 prior to September
22, 2014. Those additional assessment scores were added to one of the spreadsheets,
identifying information removed, then forwarded to researcher. One hundred fifty six
(156) records had multiple assessment scores. This represents only 18% of the sample
population. Of the 156 records found, 64 (7.5% of population) showed improvement in math score and 32 (3.7% of population) showed improvement in Write Placer score. Of the records that showed improvement in the math score, 19 responded that they had attended a workshop. Of the records that showed improvement in the Write Placer score, 12 responded that they had attended a workshop. It was found that 52 of the 64 who showed improvement in math and 19 of the 32 who showed improvement in the Write Placer responded that they had used the internet to prepare for the assessment. Additionally, it was found that 46 of the 64 who showed improvement in math and 20 of the 32 who showed improvement in Write Placer responded that they had used TCC tools to prepare for the assessment. Forty-two of the 64 who showed improvement in math and 15 of the 32 who showed improvement in the Write Placer responded that they used both the internet and TCC tools to prepare for the assessment. This data is inconclusive as to the impact of the workshop on the improvement of scores. Further research is needed with an alternative research process to gather information as to the actual impact of the workshop on the improvement of assessment scores. It would appear that the participants are more likely to turn to online or electronic resources to prepare for the assessment.
CHAPTER V

DISCUSSION

Lengthy sequences of developmental education have been shown to have detrimental effects on student persistence. TCC has made efforts to help students avoid developmental education and to reduce the developmental education sequence. TCC developed the ACCUPLACER® preparation workshop as a way to help students learn more about the assessment with the intent to improve placement outcomes. Further research is needed to determine whether the population in developmental education has been reduced since the inception of the workshop at TCC.

The survey results indicate that the workshop is not reducing anxiety as postulated. One reason that this could be the case is that those that attend a workshop are learning the high stakes nature of the assessment. As research has indicated, students' not being aware of the high stakes nature of the assessment means that they are not taking it seriously, that they are not preparing and are not necessarily fully aware of the implications. I suggest that the workshop is providing this information for those that attend, which is the cause of the disagreement with the statement 8b. It is outside of the scope of this research to make assumption about the level of anxiety concerning the test.

The results would also indicate that the workshop is helping students to understand what is expected on the assessment but they do not report feeling any more prepared than those who do not attend the workshop. However, the results do indicate agreement that they feel more prepared because of attending the workshop, they knew what to study, and they feel the workshop instructor helped them to prepare.
Results indicate that the workshop currently being offered at TCC is having an impact on students and even though it would seem negative in causing feelings of anxiety, it should be considered positive. Students must be made fully aware of the high stakes nature of the assessment, which is what the workshop is doing. The workshop is also providing knowledge and tools to help students prepare. The data gathered did not provide enough information to analyze score improvements.

It would seem that one way to alleviate issues of frustration, lowered self-esteem, and lack of persistence, and yet maintain academic standards, would be to work to avoid remediation by preparing students in advance. Providing students with the expectations of college readiness in advance, and helping them to understand the high stakes nature of the assessment would change their response to the assessment and positively influence academic preparation.

There have been so many changes in the developmental education program at TCC over the last four years that it is difficult to establish what affected what. Was it the reduction in developmental education sequence? Was it the addition of Statway to the course options at TCC? Was it the implementation of the workshop? It is difficult to establish causation.

TCC is fortunate to have a strong Institutional Research (IR) department that is looking into all aspects of the success rates of their students. Currently IR is tracking the success rates of the new Accelerated Learning Program (ALP) being offered at TCC. Like those that were mentioned in the literature review, the ALP moves students into college level English with a mandated support course. The data is still being reviewed but the outcomes look positive. In addition, TCC has been participating in the Statway
program and as of the latest report, showing 74% success rate in completion of college level statistics (Tacoma Community College, 2015).

Survey Improvements

The survey question asking for the estimated amount of preparation time (question 10) should be changed to select from options such as none, less than 2 hours, 2 to 6 hours, 6 to 10 hours, 10 to 15 hours, 15 to 20 hours, and more than 20 hours. The responses provided made it impossible to evaluate the number of hours of preparation and its impact on the other results of the survey. It is also suggested that the survey results be used to put together a focus group for more in depth exploration of the impact of the workshop and available resources. The survey results could also be used by TCC’s IR department to establish cohorts to track over the course of a year or two for success and persistence.

Implications for Future Research

This research could be used to further the exploration into the impact of TCC’s efforts for students to avoid developmental education through preparation for the assessment. There is a great deal more information that could be culled from the results using the right tools and focus groups. The information gathered from the survey aligns with the research that is currently being done across the nation and while it is focused exclusively at TCC, it can be added to the knowledge that is accumulating on success strategies and persistence in developmental education.

Recommendations

The results of the survey and current research indicates the importance of notifying students of the high stakes nature of the assessment and what it means to be
college ready. A recommendation from this study is to create stronger pathways to disseminate this information to students. Just having a brochure or flyer is not helping students to understand the importance of the assessment. Using outreach and high school connections, TCC can help prospective students begin to understand the importance of preparing for the assessment. Creative signage created by marketing and other publications may help to get the message across that the assessment should not be taken lightly.

There were a significant number of students who only assessed once in the sample. Just under half (46%) did not appear to use any resources to prepare for the assessment. This is a suggested area of improvement for TCC. Assessment preparation should be encouraged, yet balanced against the need to get students through the entry process. Information about tools and resources should be prominent in discussions about the assessment. Students should be encouraged to re-assess especially if they indicate any disappointment with the placement results.

TCC uses multiple measures as another way to avoid developmental education but it is only used in highly limited ways. Currently advisors are able to review SAT scores for alternative placement, high school math can be used to adjust placement, and high school chemistry can be used to skip entry-level course. As the research has suggested, the use of high school GPA may be a way to adjust placement for students who are near the cut-score. The use of high school GPA may assist advisors when questions about placement have been raised by the student. An area that deserves further study is the inclusion of diagnostic tools to get to non-cognitive preparation for college
courses. It is important to understand the student’s motivation and commitment to college to assist with success strategies.

TCC is clearly committed to student success. TCC has continued to put into place innovative practices to support students. While this study cannot be generalized beyond the study population, it is an indicator that the ACCUPLACER® preparation workshop is beneficial.
REFERENCES


Tacoma Community College. (2015). *TCC by the Numbers*. Retrieved from Tacoma Community College:

https://my.tacomacc.edu/uPortal/f/u22l1s29/p/ResearchAndPlanning.u22l1n149/max/render.up?pCp#PLPluto_184_u22l1n149_1908_=70434.


APPENDIXES

Appendix A: Sample Survey

[SAMPLE below as example ONLY – electronic survey]

Instructions to Students: Thank you for coming to Tacoma Community College to start, or continue, your educational journey. In an effort to improve our service to you, our students, we are asking that you complete the following survey prior to starting the ACCUPLACER® Assessment. The survey will take less than 5 minutes. Please be assured that the results of this survey are for a research project to evaluate our assessment program and do not have any effect on your assessment, your placement or your TCC records. Please answer the questions to the best of your ability.

Student ID number: __________________________ Date of Birth: __________________

1) Have you taken the ACCUPLACER® assessment previously at Tacoma Community College? Yes No (skip to question 5)

2) Did you take the full assessment at that time? Yes (skip to question 5) No

3) Which section did you take? English/Reading Math

4) Why did you only take one section at that time?

5) Are you taking the full assessment at this time? Yes (skip to question 7) No

6) If not, which section will you take today? English/Reading Math

7) Have you attended at least one of the ACCUPLACER® Prep Workshops offered by TCC? Yes No (skip question 9)

8) On a scale of 1 to 5, how would you answer the following statements? (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree)

a) I feel confident about taking the ACCUPLACER® assessment

b) I don't feel as if I have any test anxiety at this time

c) I feel prepared to take the ACCUPLACER® assessment

d) I know what is expected on the ACCUPLACER® assessment

9) On a scale of 1 to 5, how would you answer the following statements? (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree)
a) I feel that I am more prepared as a result of attending the workshop.

b) I knew what to study to prepare for the assessment as a result of attending the workshop.

c) I feel the instructor helped me get prepared for the assessment.

10) I spent ________ (estimate) hours preparing for the assessment.

11) I used the internet to prepare for the assessment. Yes  No

12) I used TCC’s website, study guides, or other tools suggested by TCC, to prepare for the assessment. Yes  No
Appendix B: Human Subjects Review Exemption

September 12, 2014

Kari Twogood
13602 13th Avenue Ct. E.
Tacoma, WA 98445

Dear Kari Twogood:

Thank you for submitting an exemption request for your study, The Effects of Assessment Preparation for the Improvement of Course Placement and Student Satisfaction at Tacoma Community College. The application as submitted was screened for exemption status according to the policies of CWU and the provisions of the applicable federal regulations. Your research was found to be subject to CWU oversight but exempt from federal regulation because it involves the use of existing archival data which are recorded so that subjects cannot be identified, directly or through identifiers linked to the subjects [see 45 CFR 46.101(b)(4)]. This certification is valid for one year through September 11, 2015 so long as the approved procedures are followed.

Your responsibilities with respect to keeping this office apprised of your progress include the following:

1. File a Project Modification Request form for HSRC approval before modifying your study in any way except formatting of documents (e.g. any change in recruitment, subjects, co-investigators, consent forms, any procedures). If there is a major change in purpose or protocol, you may be asked to submit a new application. Please call if you have questions.
2. File a Termination Report form with this office upon completion of your study.
3. Immediately contact the HSRC for further guidance should you encounter unanticipated problems with your research. Follow up with an Unanticipated Problems report may be required.
4. Provide a current contact address and phone number if either should change prior to termination of the study.

All of the HSRC forms are available on our website. Please refer to your HSRC study number (H14136) in all related future correspondence with this office. If you have questions or concerns, please feel free to contact me.

I have appreciated working with you; may you have a productive research experience.

Sincerely,

Sandra M. Martinez, M.A.
Human Protections Administrator

c: HSRC File
   Dr. Leo D'Acquisto, HSRC Chair
   Dr. Henry Williams, Faculty Sponsor
   School of Graduate Studies and Research

Human Subjects Review Council Office
400 East University Way, Everett WA 98204-7401 . Office: 360-963-3115 . Fax: 360-963-3064 . Web: www.cwu.edu/hsrc

Please note:
The signature has been redacted due to security reasons.
Appendix C: TCC letter of cooperation

July 29, 2014

Human Subjects Review Council
Central Washington University
400 E. University Way
Ellensburg, WA 98926-7401

To Whom It May Concern:

Kari Twogood has requested permission to collect research data from students (or applicants) at Tacoma Community College. I have been informed of the purposes of the study and the nature of the research procedures. I have also been given an opportunity to ask questions of the researcher.

As Program Director of Institutional Research at Tacoma Community College, I grant permission to have the researcher gather the survey data from our students. Kari Twogood is also permitted to collect this research data during school hours.

If you have any questions, please contact me at 253-566-5187.

Sincerely,

Kelley D. Sadler,
Director of Institutional Research

Please note:
The signature has been redacted due to security reasons.