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The Relationship Between High School Culinary Curriculum and Culinary Arts College Student Achievement and Completion

Emily Knight
Walden University

Walden University

COLLEGE OF EDUCATION

This is to certify that the doctoral study by

Emily Knight

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Dr. Richard Braley, Committee Member, Education Faculty
Dr. Michelle Brown, University Reviewer, Education Faculty

Chief Academic Officer

Eric Riedel, Ph.D.

Walden University
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Abstract

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by

Emily Williams Knight

MS, Troy University, 1998

BS, Boston University, 1995

AS, Newbury College, 1993

Doctoral Study Submitted in Partial Fulfillment

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Abstract

There is a lack of persistence and completion of students enrolled in a local college culinary arts program, a problem also evident in national data. Some students entering the college program have participated in a defined high school curriculum focused on culinary arts, such as the National Restaurant Association Education Association's ProStart curriculum. The purpose of this study was to determine if participation in the ProStart program was related to the mean grade point average (GPA) and time to completion in the college culinary arts program. Dewey's theory of experience provided the theoretical framework. Participants from 2 cohorts at the local college—students who participated in ProStart (n = 17) and those who did not (n = 122) were examined for GPA and number of months to program completion. A t test revealed the students who participated in ProStart had higher average GPAs. There was no statistically significant difference in the time to completion between the 2 groups. The analysis must be viewed within the limitations of the available sample size of the ProStart group, and further study is recommended with larger group sizes. Based on the results of this study, a peer-to-peer mentoring program pairing ProStart with non ProStart students was developed and recommended to the research site. The implications for social change include providing research results to the local site and a recommendation for a mentoring program to improve the rate of completion in the culinary arts program.

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Dedication

This doctoral study is dedicated to my loving family, Alec, Elizabeth and Olivia. There were countless weekends when you allowed me to complete course assignments and to research my study topic. You never shared your disappointment or sadness that we weren't doing things as a family; instead, you offered me unwavering support and encouragement. I love the three of you so much and am fortunate to call you mine. I also dedicate this study to my mom and dad. With my dad serving in the United States Navy and completing several remote deployments, my mom was never able to complete her doctorate. She rose to being a community college president and my drive to complete this degree is as much for her, as it is for me. I am truly blessed to have such supportive parents. To my brother Chris, thank you for always being my champion and for being the best brother I could have asked for. Finally, I dedicate this to all the high school students who have the goal of entering the hospitality and restaurant industry. I was a high school student looking to build a career in the industry and wish I had access to the type of findings found in this study. It would have helped me to better understand how an investment in a high school program could benefit my future college academic achievement.

Acknowledgments

I would like to thank my Chair Dr. Carole Pearce and my methodologist, Dr. Richard Braley. They have provided me with tremendous support, guidance, and are two people I trust and respect. They say that your chair and committee are a critical component of your ability to complete your doctorate. There is no doubt this is a team effort and I am blessed to have their support, guidance, and experience. Without them, I would never have achieved my dream of earning my doctorate in higher education.

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Section 1: The Problem

Introduction

The field of culinary arts education began in Paris in the 1800s (Brennan, 2014). Ranhoffer, chef of one of the early and best known fine dining restaurants, called for the establishment of culinary training schools in the United States (Brennan, 2014). Until this time, many restaurant owners and chefs were importing talent from Europe. Importing culinary talent versus developing and nurturing local individuals became too costly and a new solution was needed.

The first cooking school in the United States was the Boston Cooking School located in Boston, MA (Butler, 2013). It was created to train women for jobs outside the home and demand quickly outweighed the number of people that could be trained in each kitchen. The school gained national prominence following an 1896 publication of *The Boston Cooking-School Cook Book*. The first edition was published by Farmer and remains in print today (Hegarty, 2014).

Following the success of the Boston Cooking School, the New Haven Culinary Institute was founded in 1946 (Culinary Institute of America [CIA], 2015). Roth, who was an attorney rather than chef, had a vision to create an education institution that would serve as a national center of excellence in culinary education. The early mission of The New Haven Culinary Institute was to provide training to returning World War II service members (CIA, 2015). The first class consisted of 50 people and was supported by three faculty members (CIA, 2015). The school was founded at the right time due to postwar prosperity and an increasing demand for entertainment and dining out. From 1946 to

1951, the school changed its name two more times, ending as the Culinary Institute of America.

The CIA expanded the Boston Cooking School teaching methodology. The CIA had a teaching philosophy which combined theory with hands on practical application and an industry based internship (CIA, 2015). They required each student to complete an 18-week long, paid internship (CIA, 2015). This required internship supports Dewey's theory of experience-based education put to use in culinary arts education (Dewey, 1939).

Through the late 1950s to present day, culinary schools have grown in popularity and numbers. In 2013, 273 institutions offered 476 accredited postsecondary culinary programs (American Culinary Federation [ACF], 2013). In just 4 years, this is a 30% increase in the number of schools offering culinary arts programs and a 39% increase in number of program available (ACF, 2013). This is the number of program accredited by the ACF, and two prestigious programs are missing from this calculation, the CIA and Johnson and Whales University. Both schools decided to not participate in the ACF accreditation process. Even without this recognition, both these schools are consistently ranked in the top 10 culinary schools in the United States (Odesser-Torpey, 2014). For the purpose of this study, I used the ACF school count to determine the current market size of postsecondary culinary education. The ACF is the sole postsecondary culinary arts accreditor and their schools account for close to 90% of the market (ACF, 2013).

Definition of the Local Problem

The problem addressed in this study is the lack of academic achievement and completion of a culinary arts program at a small college in the Midwest by students who

either did or did not complete a vocational education program in culinary arts. There is a lack of persistence and completion of students enrolled into college culinary arts programs across the United States (Hertzman & Maasb, 2012). This lack of success occurs nationally and also at a local college in the Midwest that offers an associates and bachelor's degree in culinary arts. The lack of student completers, coupled with the cost of many of these programs (National Center for Education Statistics, 2013) has college leaders looking for strategies to improve persistence and completion rates (Marckle, 2015).

There is a heightened sense of urgency to improve completion rates due to continued criticism by key legislators regarding the cost and return on investment of college programs (Breed, McKinney, Mukherjee, Shefman, & Wade, 2015). The Bureau of Labor Statistics (2015) projected 5% growth in the culinary industry; industry leaders will need trained labor to meet this growing demand. Lack of completion, an administration focused on persistence and academic success, and a local environment depending on trained culinary talent to serve the growing tourism industry are all key drivers that contribute to this local problem.

Prior to enrolling into an associate's degree program in culinary arts, some students have completed high school career and technical education (CTE) programs. Entering students can come from two types of high school career and technical education programs - traditional programs that utilize varied curriculum and resources, or high school programs that utilize the National Restaurant Association Education Foundation (NRAEF) ProStart curriculum (National Restaurant Association, 2013). The NRAEF

ProStart Curriculum reaches more than 118,000 students in 1,700 high schools across 48 states, Guam, and several U.S. military bases (National Restaurant Association, 2013).

Once enrolled into a college culinary arts program, there is a lack of persistence and completion to graduation. This problem is mirrored in the public data that also indicated a national trend of low completion rates in college culinary arts programs (National Center for Education Statistics, 2013). Looking back at these students high school experience, their school districts can invest financial resources into various curriculums, some specific to culinary arts. A lack of evidence on a connection between students participating in a defined curriculum, like the NRAEF ProStart program and their future college success leaves high school administrators with lack of clarity around their return on their investment.

For the 2012-2013 academic year, the national discount rate, based on first-time, full-time students was 44.8%. This discount rate is an increase from the 2011-2012 academic year (Pullaro, 2013). If college administrators had evidence that students who participated in a high school ProStart program perform better academically, and have a greater chance to graduate, they will be able to better target scholarship and financial resources to the students with the greatest projected opportunity for success.

The purpose of this study was to determine whether there is a connection between high school students' participation in ProStart curriculum and their academic achievement and completion of a local college level culinary arts programs, as compared to students who did not participate in this high school curriculum. By determining a

connection or a lack there of, school administrators, students, and college leaders will have evidence to assist making key strategic decisions.

Rationale

Evidence of the Problem at the Local Level

The local college's retention rates mirror those of the national reported data, with only 41% of first time, full time students who began the culinary arts associates' degree program in the fall 2011, completing the program within 3 years (IPEDS, 2014). Using the Department of Education metric (National Center for Education Statistics, 2013) for completion of first time, full time first year students, it means that 59% of students, who began did not finish the 2-year program within 3 years. The year-to-year retention rate for the culinary arts associate degree program, from 2012-2013 was 73% (Local College Annual Report, 2014). Those data mean 27% of students who started the program were no longer enrolled 1 year later.

There are a number of negative implications from college attrition, that is, when a student begins a program, but does not persist to completion. The college will experience a loss of tuition revenue; this financial loss could have a material impact on the financial sustainability of the institution (Fowles, 2013). A college budgets each year and plans for new as well as retuning students. When either of these targets are less than projections, many colleges do not have alternative strategies to recover the loss of revenue (Harding, 2014). This loss of expected revenue puts financial strain on the institution and may mean key initiatives or other areas of investment need to be postponed (Fowles, 2013).

Another negative impact of attrition on an institution of higher education is with the school's accrediting agency and the state and federal legislative oversight that monitors such outcomes as completion (National Center for Education Statistics, 2013). Over the last 5 years, there has been growing oversight and focus by the federal government, specifically by the Department of Education who has been working on new legislation related to graduation rates and the ability for students to find a job (Hentschke & Parry, 2014). If a college has lower graduation rates, specifically against national averages established by the department of education, it can have a negative impact on the brand and image of the institution by students and their families (Hentschke & Parry, 2014). This can again impact long term enrollment for the college. It can also mean negative ramifications from the Department of Education in the form of reduced access to federal funding and tighter reporting annual reporting requirements (Natow, 2015).

Along with the negative implications attrition has on an institution of higher education, it can also have a negative impact on perspective students and their families (Hentschke & Parry, 2014). As part of their evaluation process, many parents and perspective students look at the graduation rates of colleges (Steiner, Sundstrom, & Sammalisto, 2013). The current attrition results from this small college in the Midwest could deter students from selecting this particular culinary arts program. The role of reputation based on outcomes is expected to grow in importance in the years to come (Steiner et al., 2013).

The failure to complete a college program could have a long term financial impact on a student. For example, in 2013, the average worker, between the ages of 25-34 with a

high school credential, earned approximately $30,000. The average worker who held an associate's degree, earned $37,500 (National Center for Education Statistics, 2014). The national unemployment rate in 2014 for workers with only a high school credential was 6%, while a worker with an associate's degree was lower at 4.5% (Bureau of Labor Statistics, 2015). These data point to the increased likelihood of securing employment and the financial gain one makes by earning a college degree and also highlights the negative impact when they do not.

On the regional level, the mayor of a large city in the Midwest has publically stated that tourism and growth of the restaurant sector is a cornerstone of his economic agenda. The mayor has established a city goal for annual tourists of 55 million visitors a year (Anonymous, 2014). City economists estimated that if this goal is achieved by 2020, an additional 30,000 jobs will be created (Anonymous, 2014). There is current and growing demand for skilled culinary arts professionals. Prepared students who complete programs will be critical to achieving the mayor's economic growth agenda.

Evidence of the Problem From the Professional Literature

Although there has been limited research on high school culinary arts programs and how they connect to future college success, there have been a number of studies on other high school career and technical education programs and college success. These studies vary in focus with many focusing on math and engineering disciplines and their potential connection to future college success. There are also several studies on college retention and persistence rates as college leaders and other key stakeholders look for ways to increase college completion.

Evaluating previous research on the topic of college readiness tied to formal high school academic programs, Chapa, Galvan-De Leon, Solis, and Mundy (2014) researched the effectiveness of a high school math and reading program on future academic success in college. This ex post facto study was focused on a high school in South Texas examined the differences between the academic achievement in college math and reading courses between students who participated in the preparatory program and those that did not. The findings illustrated a strong improvement in the reading scores of those students who participated, but there was not a significant difference between the math scores of both groups (Chapa et al., 2014).

Bersudskaya and Chen (2011) analyzed trends of high school CTE participants. Bersudskaya and Chen focused specifically on students who participated in a high school program and then transitioned into college. Bersudskaya and Chen determined that of their sample population, 67% of high school students who took some culinary career and technical education courses in high school enrolled into a college program within two years of gradation. Bersudskaya and Chen showed that roughly 7% of students who took high school culinary courses transitioned to college. This is a higher percentage than most believe, as many career and technical education programs are designed to lead to direct employment (Schwartz, 2014).

Dupuis, Harwell, LeBeau, Medhanie, and Post (2014) investigated a possible connection between high school math curricula and college developmental courses. The results showed that the type of curriculum, number of years the student took math courses and their incoming standardized tests scores all contributed to their participation in

developmental college math courses. The specific role that curriculum, like the ProStart program, played was not determined. The findings did not show a strong connection between high school curriculum and the requirement to enroll into development math courses in college.

In order to increase completion rates in college culinary arts programs, students must first choose to pursue a college degree in this field of study. Jackson and Hasak (2012) researched high school career and technical education programs and proposed a new framework to increase participation in high school programs that help lead to future college success. Castellano, Sundell, Overman, Richardson, and Stone (2014) also studied the impact of high school vocation programs and determined that students who took additional vocational CTE programs in high school did not limit their opportunity to attend college.

Similar to Jackson and Hasak (2012), Stone and Lewis (2012) looked at historic pathways from high school to college, and offered an alternative to the 2 and 4-year degree that could include 15-18 months career and technical education training in fields such as culinary arts. This type of hands on and craft based learning has been determined to increase workforce readiness. Jonas, Gibson, and Yamaguci (2014) took it a step further and looked at the more than 400,000 Virginia high school students who participated in a CTE program in high school and determined that in order to increase future college success, CTE programs needed to contain a blend of academic foundation content with skills based and technical training.

There have also been studies on various high school curriculums and their potential impact on students' future success in college. Cole, High, and Weinland (2013) examined the retention of students in the College of Engineering, Architecture and Technology (CEAT) at Oklahoma State University (OSU) engineering program. Cole et al. determined that students completing a high school pre-engineering program of study, consisting of technical as well as some foundational academic courses might realize higher rates of persistence to a college engineering program. Those students who participated in the high school pre-engineering program could have better persistence to graduation when enrolled into a college level engineering program. To determine these findings, Cole et al. compared the college enrollment trends of those that participated in the high school program with those that did not participate in the high school program. These findings align directly with this study in determining if there is a connection between prior preparation in a defined curriculum and future college success.

LeBeau et al. (2012) studied approximately 3,500 students from 229 high schools in the Midwest and determined that students who completed a rigorous math curriculum in high school did not persist in college at a higher rate than those students who did not complete a defined set of rigorous math courses in high school. This comparable study aligns with the proposed study by looking at specific and defined high school curriculum and if it leads to stronger persistence and academic success in college programs.

Definitions

Career and Technical Education (CTE):

A term applied to schools, institutions, and educational programs that specialize in the skilled trades, applied sciences, modern technologies, and career preparation. It was formerly (and is still commonly) called vocational education; however, the term has fallen out of favor with most educators. (Great Schools Partnership, 2014, p. 1)

Culinary Arts/Chef Training:

A program that prepares individuals to provide professional chef and related cooking services in restaurants and other commercial food establishments. Includes instruction in recipe and menu planning, preparing and cooking of foods, supervising and training kitchen assistants, the management of food supplies and kitchen resources, aesthetics of food presentation, and familiarity or mastery of a wide variety of cuisines and culinary techniques. (National Center for Education Statistics, 2013, p. 1)

Dual Enrollment:

The term dual enrollment refers to students being enrolled simultaneously into two courses. Students can be enrolled in the same school or in two different institutions. Over the last decade, the term dual enrollment has often been used to reference students taking high school and college courses at the same time, and while they are still enrolled in high school. (Great Schools Partnership, 2012, p. 1)

National Restaurant Association Education Foundation (NRAEF): Founded in 1987, the NRAEF is the philanthropic foundation of the National Restaurant Association. The cornerstone product of the NRAEF is the ProStart curriculum that is used in high

schools across the United States, and in the territory of Guam and at Department of Defense schools in Europe and the Pacific (National Restaurant Education Foundation, 2014).

Vocational Education Training (VET): The 1990 Perkins Act defined vocational education as "organized educational programs offering a sequence of courses which are directly related to the preparation of individuals in paid or unpaid employment in current or emerging occupations requiring other than a baccalaureate or advanced degree" (National Center for Education Statistics, 2013, para 1).

Significance

Retention and persistence to completion of college students is a goal of students, parents, college faculty and staff, as well as legislators and policy leaders. There are a number of benefits to college completion including support of the labor pipeline for industry, long term earning power and job prospects for students, prestige and reputation of the college within the community, and overall student satisfaction with earning a college degree. This study provides insight into a possible connection between a defined high school curriculum and student academic achievement and completion of a two year college program. The information shared with the NRAEF leadership team, high school administrators focused on the discipline of culinary arts, and college leaders with programs in culinary arts will all benefit by the background information presented and the findings determined by this study.

This study may also contribute to positive social change by inspiring leaders within the NRAEF and 2-year culinary programs to work together on curriculum to

ensure students are better prepared for college programs. K12 administrators could use this information to support the investment in curriculum and teaching materials. If the results determined that students who participated in the program in high school performed academically better and graduated at a higher percentage rate than their peers, who did not participate, K12 administrators would have better information and support to invest in this program, over adjacent disciplines.

The employment rate and potential earnings of a 2-year college graduate exceed those of a high school graduate (Board of Labor Statistics, 2014). Determining what helps a student perform academically better and persist to graduation is good for the student and for society.

Research Questions

RQ1: What is the difference in mean accumulated grade point averages between college-level culinary arts students who participated in ProStart curriculum in high school and college-level culinary arts students who did not participate in a ProStart curriculum in high school?

$H_0$1: There is no statistically significant difference in mean accumulated grade point averages between college-level culinary arts students who participated in ProStart curriculum in high school and college-level culinary arts students who did not participate in a ProStart curriculum in high school.

H_a1: There is a statistically significant difference in mean accumulated grade point averages between college-level culinary arts students who participated in ProStart

curriculum in high school and college-level culinary arts students who did not participate in a ProStart curriculum in high school.

RQ2: What is the difference in mean time to completion between college-level culinary arts students who participated in ProStart curriculum in high school and college-level culinary arts students who did not participate in a ProStart curriculum in high school?

$H_0$2: There is no statistically significant difference in mean time to completion between college-level culinary arts students who participated in ProStart curriculum in high school and college-level culinary arts students who did not participate in ProStart curriculum in high school.

H_a2: There is a statistically significant difference in mean time to completion between college-level culinary arts students who participated in ProStart curriculum in high school and college-level culinary arts students who did not participate in ProStart curriculum in high school.

Review of the Literature

A review of the literature relative to high school career and technical education programs and their possible connection to future college success, as well as retention and persistence of students in 2-year college culinary arts programs, was completed. The following literature review outlines a sampling of the current research on select topics related to this specific study. The topic of high school curriculum and programs and their connection to future college persistence, experience learning theories, retention and persistence in college culinary programs, and retention in 2-year vocational college

programs were all researched. The literature review confirmed limited prior research on high school culinary arts programs and their possible link to academic success in college culinary arts programs.

The databases used for this literature review were, ERIC, ProQuest, Education Research Complete, Thoreau, Hospitality and Tourism Complete, National Center for Education Statistics, SAGE Primer, and Bureau of Labor Statistics. The Walden University library was used extensively, as was a local library. The search terms used in varying combinations were *vocational education, cooking school, career and technical education, college culinary arts, persistence from high school to college, culinary arts retention, learning styles, and culinary arts completion.* Additionally, *career and technical pathways to college,* and *college retention factors* were explored.

A majority of the findings related to general retention and persistence in college. There were a few researchers who measured high school curriculum to future college persistence. There was a noticeable lack of specific evidence on retention within college culinary programs. These research results were expected as this area has been relatively unstudied and there was an expected gap in practice. The information is outlined in the following sections: High School Career and Technical Education Curriculum, Theoretical Framework, High School Preparation Connected to College Persistence and Completion, College Retention, and Summary.

High School Career and Technical Education Curriculum

A common theme across the available literature regarding high school career and technical education curriculum is that most curricula are designed to lead from classroom

to industry (Packard, Leach, Miki, Yedalis, & DiCocco, 2012). There are many researchers who focused on the role of the teacher in student success within secondary CTE programs. There are very few studies about specific high school vocation curriculum and that curriculum or program designed to prepare students for success in college culinary arts programs. Gustavo, Nakamoto, Oh, and Rueda, (2013) examined 267 11th and 12th grade students from California who were recent graduates of a career education program. The results showed that when adult role models were used in the classroom, alongside the curriculum, to encourage and support students, students were more interested in making education and career decisions. The influence of adult mentors increased the interest of these students to consider a specific career or to consider a pathway to postsecondary education.

Kim, Kim, DesJardins, and McCall (2015) examined a possible connection between students who took Algebra II in high school and their ability to attain a college degree. Applying an instrumental variable (IV) approach, and using longitudinal student record data from Florida, Kim et al. determined that students who successfully completed Algebra II in high school significantly increases the likelihood of college attendance, but not to completion. This finding is important because participation in a specific high school course was shown to impact college participation, but not completion.

Much of the research about secondary CTE education is focused on the teacher and their role in student success. Casale-Giannola (2012) conducted a qualitative study at two suburban high schools using three data sources: observation, consultation, and surveys. Sixty-seven classes were observed and Casale-Giannola determined that to

improve inclusion in CTE classrooms, teachers needed to increase active learning, provide more skill development in key areas, teachers themselves needed to improve their skills and strategies for dealing with students with disabilities, and should also invest in coteaching and more collaborative projects with other CTE teachers.

Fletcher, Djajalaksana, and Eison (2012) interviewed teachers and based on their findings recommended the most common methods of instruction to use in CTE classrooms. Stephens (2011) linked the Carl D. Perkins Act of 2006, which requires professional development for CTE teachers, with the strategy of teacher internships as a method to improve teacher effectiveness. Stephens noted that advisory councils and cooperation education are two strategies to provide quality professional development to teachers.

The Growth of Culinary Programs

There are number of reasons for the recent growth of college culinary arts programs. There has been a significant increase in the number of television networks and shows dedicated to cooking and baking. While newer television programming, like the Food Network (Tuschman, 2015), is driving strong viewership, it was in 1963 when Julia Child debuted her show, *The French Chef* (Brennan, 2014) that television viewers in the United States first saw how television brought awareness to cooking and to the accessibility to culinary training (Woo, 2014).

Another reason for the growth of college culinary programs is the increase in available secondary programs. The National Center for Education Statistics (2013) projected that 1,466 US high schools offer some type of culinary class, with 1,354 of

these schools being regular public institutions and 112 being specialized culinary programs. With the number of high school culinary programs, there are more available students to matriculate to college culinary programs.

College culinary arts programs are offered in community colleges, private nonprofit and for-profit colleges. In 2011, 20,366 associate degrees were conferred (National Center for Education Statistics, 2013). This is up from 9,325 in 2012 (National Center for Education Statistics, 2013). Although the number of graduates has increased, so has the number of students enrolling into college culinary arts programs (National Center for Education Statistics, 2013).

Theoretical Framework

In this study, I used Dewey (1938) as the foundational theoretical framework. Dewey (1938) believed the best education experiences came from combining practical experience with academic rigor. Prior to the publication of one of his most famous works, Dewey wrote his pedagogic creed and stated that school must represent current life and be focused on living today and not organized for future living (Dewey, 1897).

Dewey was known for making schooling more engaging as he believed curriculum should be a balance between demanding academics and real world application (Stipanovic, Lewis, & Stringfield, 2012). Dewey's philosophy falls between traditional and progressive education with a focus that curriculum should be grounded within the theory of experience. Because of his steadfastness on this foundational aspect to his philosophy, in the early 1900s he began a movement that caused the creation of

experiential education programs which remain a foundation of many curricula today (Waks, 2013).

Dewey believed that students learned best in an environment that blended academics with hands on experience, and it was through the experience that students gained needed context and insight (Hohr, 2013). Several researchers have used Dewey's theory to further explore achievement trends when students actively participate in the classroom. Using 20 fifth-grade classes, Pratton and Hale (1986) determined that when students actively participated in their learning, there was a significant and positive difference in performance. Freemana et al. (2013) completed a comprehensive study analyzing 225 previous studies on active learning and found that there was significant improvement in student academic performance when active learning was included in the delivery of course content. Active learning was in place in (n = 158 studies) and traditional lecturing in (n = 67 studies). The results indicated that average student scores improved by about 6% in the active learning sections" (Freemana et al., 2013, p. 8410).

When evaluating Dewey's experiential learning theory related specifically to culinary arts and hospitality, there has been demonstrated effectiveness of his theory (Bower, 2013; Hedeker, 2012; Thibodeaux, 2012) Hedeker laid out a model for creating a learner centered teaching kitchen. Hedeker connected Dewey's theory of learning to applying the responsibility of learning on the student. Hedeker encouraged culinary instructors to provide their students with the tools to be successful and the freedom to own their learning. Hedeker believed that students should apply what they hear to real world application in the teaching kitchens.

The results from these studies reinforced Dewey's theory of active learning and the impact that hands on learning has on student performance. The ProStart program and college culinary arts curriculum consists of traditional lecture materials that are blended with hands on experience delivered in a lab or kitchen environment. The ProStart high school curriculum was designed using Dewey's theory of experience based education (W. Safstrom, personal communication, June 10, 2015). The goal of both programs is to incorporate hands on learning to support the lecture component and to provide real world learning of concepts presented in the traditional classroom environment. Dewey's theory ties hand on learning to student success and therefore it is expected that the ProStart program will prepare students for academic achievement and completion.

High School Preparation Connected to Academic Achievement and College Completion

Recognizing the need to successfully transition secondary students to postsecondary institutions, national leaders and policy makers developed new initiatives, such as career and tech prep academies, High Schools that Work and various defined secondary tech prep curriculums (Kim & Bragg, 2008). Many of these initiatives are attempts to infuse more rigorous academic and career and technical education into secondary programs to better prepare students for success in future college programs. Although there are limited studies on specific high school curriculums that lead to future college success, An (2013) researched the impact high school dual enrollment programs could have of college academic preparedness. With an analytical sample of more than 13,320 students, An determined that participation in dual enrollment increased first-year

GPA and decreased the need for remediation. That is an important finding as it shows that students who participate in specific programs, with added rigor, perform better in their first year of college.

Kim (2014) examined the relationship of high school dual credit and vocational programs to college readiness in three core disciplines; reading, writing, and math. The sample consisted of 612 high school graduates. These high school graduates went on to enroll into a community college, one in Florida and the other in Oregon. The findings indicated a significant difference between the academic success of the students in college who previously enrolled into dual credit and tech prep in high school and those that did not. These findings can help high school administrators encourage more students to participate in these defined high school curriculums.

Although retention of college students has been studied for more than 50 years, there is still no single solution that ensures all students who enroll in college persist to completion (Turner & Thompson 2014). There are researchers who focused on the reasons student attrite in 2-year college programs and also that offer strategies to support student persistence to completion. Turner and Thompson conducted a qualitative study to explore the perceptions of entering freshman, continuing sophomores, and students who dropped out during their first year. Turner and Thompson focused on the opinions and perceptions of these students and the data were organized into themes. Turner and Thompson concluded that there were four main drivers to retaining students in their first year; freshmen focused activities, developing effective study skills, instructor-student relationship, and academic advisements-support. These drivers of first year retention

were also confirmed by other researchers (DeBerard, Scott, Spielmans, & Julka, 2012; Kuh, Cruce, Shoup, & Kinzie, 2008).

Most colleges and universities are focused on completion. Community colleges that enroll half of all college students in the United States (Linderman & Kolenovic, 2013) have been working with organizations like the Lumina Foundation (www.luminafoundation.org) to research the key drivers of student retention. The Lumina Foundation is an independent organization with a focus on increasing the number of American's earning a college degree, certificate, or credential (Lumina Foundation, 2015). America is 11th for postsecondary degree attainment globally (Lumina Foundation, 2015); these educators, researchers, and policy makers are working together to suggest strategies for improvement.

Looking specifically at historically low completion rates in vocationally based programs, researchers from the City University of New York (CUNY) system used the common reasons for lack of completion, poor academic preparation, confusing degree plans, campus layouts, and demands of work and family, and created an accelerated degree program with the goal to improve completion by 50%. This program included intensive and accelerated development courses, cohort scheduling, mandatory student support services, winter and summer break course scheduling, and financial measures to assist with the cost of college. Within 3 years of the inception of this program, students were graduating at more than double the rate of similar CUNY students not enrolled into the accelerated program. The notion of creating a defined program for key disciplines and

supporting the lack of secondary preparation is one that could be leveraged at this college in the Midwest.

Considering the topic of student learning, Brown and Chesser (2013) composed a study of 390 students, “209 students were enrolled in online taped video classes and 184 were enrolled in traditional classes (p.106). All students received the same content, with the only difference being the 209 students received their culinary demonstration lecture via video while the other students received in a live setting via the instructor. The results showed that student performance did not differ between the two experiences (Brown & Chesser, 2013). However, the students were received the demonstration via video performed better in group assignments where they had to work together with their classmates to complete hands on projects.

Supporting defined pathways and cohort models as a strategy to improve two-year college retention, Bailey, Jaggars, and Jenkins (2015) agreed that the cafeteria model used today only distracts students and does not provide them with a clear pathway to degree completion. Bailey et al. focused on the cafeteria model of education delivery whereby students may select courses, often without oversight for academic advising. This self-selection can lead to an increased time to graduation. Bailey et al. proposed a guided model that allows students to gain key knowledge and skills across a defined number of courses. Through their research, Bailey et al. determined that the focus should be on programs, rather than courses. These programs should be designed to include the exact courses a student needs to complete, and to no longer allow the student to take endless

electives that may or may not lead to degree completion. This report has quickly gained national attention and support from many community college leaders.

Summary of the Literature Review

Legislators, government officials, college administrators, industry, parents, and students are all looking for strategies to improve college completion. There are only a few researchers who focused on a direct link between specific secondary CTE preparation and future college completion. The current study is focused on how secondary CTE curriculum prepares students to enter the workforce and there is a gap in research that links this preparation to college degree attainment. The outcome of this project is data that address the question of participation in a secondary ProStart program and a possible connection to college academic achievement and degree completion.

Implications

There are a number of possible implications based on the findings of this study. When completing the analysis of the first research question, analyzing the average grade point averages of the two cohorts for significant difference, the first outcome could be that there is a significant difference between the ProStart group AGPA mean score and the non ProStart group AGPA mean score. The possible implication for that result could be that the students entering the college program were better prepared by their high school participation in the ProStart curriculum. It could also mean that the students who participated in the ProStart program in high school had a stronger level of intent and commitment to their studies in culinary arts. A potential implication is that the students

having experienced culinary arts curriculum in high school gained needed knowledge that served as a foundation for further academic success in college.

A second possible outcome of this first research question is that there is no significant difference between the AGPA mean score of the ProStart group and the AGPA mean score of the non ProStart group. One possible implication for that is that the students participation in the high school ProStart curriculum did not provided additional benefit to their academic success in the college culinary arts program. A second implication could be that exposure to culinary arts curriculum in high school does not predict future success in college, above that of those students who did not invest in the curriculum in their secondary experience.

For the second research question related to program completion, there are also two possible outcomes. The first is that a higher percentage of ProStart students completed the 2-year college culinary program than the students who did not participate in the ProStart program. The implication for that could be that the students were more focused and committed to the discipline of culinary arts having already invested 2 years in the high school program. The second outcome of Research Question 2 is that there was not a significant difference in graduation percentages between those students who participated in the ProStart program and those that did not. The implication for that is that the student's participation in the high school ProStart program did not impact their commitment to completing the college culinary arts program on time. It could also mean that there are other factors impacting students' abilities to complete the program. Depending on the findings, one opportunity would be to further explore the reasons

students did not complete through a qualitative study analyzing the thoughts, feelings, and insights of students who are currently enrolled in the program and who came from a ProStart or non ProStart high school experience.

Although these are important benefits to multiple stakeholders, one group that could benefit from the findings of this study is the high school teachers who use the ProStart curriculum in their classes. The small college in the Midwest where the research will be conducted could create and provide teacher professional development to the secondary teachers delivering the ProStart curriculum. That training could be developed by the college culinary faculty and could provide the secondary teachers with additional development in key areas of the college culinary arts curriculum. The secondary teachers could travel to this college in the summer, participate in hands on training with college faculty, and receive a certificate of completion.

Regardless if there is a significant difference between the two groups, there are also implications of this research on the National Restaurant Association Education Foundation (NRAEF). At conclusion of this study, the NRAEF could decide to invest resources in curriculum development to confirm alignment to industry and college culinary arts programs. The NRAEF could interview former high school ProStart students who enrolled into college culinary arts programs and collect qualitative data regarding the student's preparation and any potential gaps they experienced when enrolled into the college program. These findings could be used to refine the curriculum to better prepare students for what they need to be successful in college culinary arts programs.

Summary

Secondary schools continue to look for ways to increase the preparation of students for future college success, and yet there is a lack of evidence about specific curriculum assisting in this goal (Elder, Smith, & Stevens, 2014). Conversely, there is evidence that more than 25% of students who begin 2-year college culinary programs do not complete within 3 years (National Center for Education Statistics, 2013). A review of the literature suggested that more research is needed in the area of persistence and academic success in a local college culinary arts programs. There is a gap in practice that connects high school career and technical preparation with future academic achievement and completion in college culinary arts programs.

Improving retention in college programs and increasing graduation rates is a priority for legislators, teachers, administrations, parents and students. Although there have been countless studies on what factors impact retention and attrition, there have been few studies on the impact of secondary curriculum and program participation on future college academic success and completion (An, 2013; Bailey, Jaggard & Jenkins, 2015; Casale-Giannola, 2012; DeBeard et al., 2012; Fletcher et al., 2012; Gustavo et al., 2012; Kim, 2014; Kim & Bragg, 2008; Kuh et al., 2008; Linderman & Kolenovic, 2013; Lumina Foundation, 2015; Packard et al., 2012; Stephens, 2011; Turner & Thompson, 2014). I looked at both academic achievement and persistence to graduation at a culinary arts program at a small college in the Midwest. Understanding if there is a significant difference between the two groups being measured will allow the college to focus resources and to implement strategies to support these learners.

Section 2 includes the rational for completing a quantitative study. It contains the research design and approach; the setting which is a small college in the Midwest, a listing of the instruments and materials used in the study, a description of the data collection and analysis process as well as the data analysis findings. Also included are assumptions, limitations, scope, and delimitations of this study. Finally, the steps taken to ensure the protection of the participants are reviewed.

Following Section 2, Section 3 contains an overview of the proposed project, a positon paper, and includes the rational, goals and objectives of creating and implementing a peer-to-peer mentoring program. This section includes a detailed analysis of the framework and process needed for implementation along with recommended formative and summative assessment plan. The possible local and far reaching implications this program could have on social change are also covered. Finally, Section 4 provides an overview of the projects strengths and weaknesses, limitations, resources needed, as well as a reflection of my experience completing this doctoral study. These personal experiences include self-reflection on my role of researcher, practitioner, and scholar and the project's potential impact on social change, implications, applications, and directions for future research.

Section 2: The Methodology

Introduction

The purpose of this study was to determine if there is a significant difference between the mean score of individual grade point averages and mean time to completion of college students who participated in the ProStart curriculum in high school, as compared to college students who did not participate in ProStart curriculum in high school.

Research Design and Approach

To complete this study, a quantitative research design was used. The quantitative design was appropriate because a researcher begins with a theory, can compare groups or variables using statistical analysis, and then summarizes the findings into a presentation using numeric data (Creswell, 2012, p.13). I investigated whether or not the secondary ProStart curriculum could have affected postsecondary students' academic performance and completion as assessed by their grade point average and their time to completion of the 2-year postsecondary culinary arts or baking and pastry programs. A quantitative design allowed me to compare two groups, to collect and analyze numeric data from the groups, and to answer the two specific research questions.

A statistical analysis was performed using two groups of students, (a) those who completed ProStart curriculum prior to entering college, and (b) those who did not complete ProStart prior to entering college. The analysis compared accumulated grade point averages and completion data to discover if there is a significant difference between the two groups of students.

Researchers who also compared two groups used a quantitative study design including Castellano, Sundell, Overman, Richardson, and Stone (2014); Cole, High, and Weinland (2013); and Jonas, Garland, and Yamaguchi (2014). Castellano et al. conducted a 4-year longitudinal field study of 6,638 high school students in three large school districts. They followed students from 9th grade to high school graduation and separated the students into two groups. One group contained students enrolled in programs of studies or career academies with focused curriculum on areas such as health sciences and culinary and hospitality, and the alternative group consisted of those students who attended regular comprehensive high school curriculum. Castellano et al. found that in one district, the students who participated in the career focused curriculum and earned more CTE credits had a higher graduation rate. Student achievement varied by district; but, the results showed that the students who studied in defined career pathways earned higher GPAs.

Cole et al. (2013) measured the retention and degree completion of two groups of students enrolled in the CEAT at OSU. Cole et al. determined that students completing a high school pre-engineering program of study, consisting of consisting of technical as well as some foundational academic courses might realize higher rates of persistence to a college engineering program. Those students who participated in the high school pre-engineering program could have better persistence to graduation when enrolled into a college level engineering program. Cole et al. completed a quantitative study using statistical analysis to determine there was a significant difference in the retention of one group of students over the other.

Jonas et al. (2014) analyzed a sample of 77,006, 2008 high school graduates and 82,105, 2009 high school graduates and they compared the completers of CTE programs to those that did not participate in CTE programs in relation to future success in college. One key finding was that on average, the CTE high school completers were less likely to enroll into a 4-year college program, compared to the non CTE completers. The researchers discovered that "only 66 percent of CTE completers enrolled in college within 1 year of high school graduation, compared to 73% of noncompleters of a high school CTE program" (Jones et al., 2014, p.13). Jones et al. showed a significant difference in enrollment into college and attainment of college credits between the two groups studied.

Also measuring the impact of specific teaching strategies or curriculum between two groups, Brown and Chesser (2013) analyzed two groups of students enrolled in a first year college culinary arts program. Each group was given the same instruction; however, one group received the demonstration via video while the other in a traditional live class demonstration. The results indicated that of the 390 students, split about evenly between the two courses, produced similar performance levels no matter the demonstration delivery method. Brown and Chesser concluded that the use on online instruction does not have a negative impact on student learning, nor does it enhance the student learning outcome over traditional education delivery.

When considering the research design, I also evaluated the characteristics of qualitative and mixed-methods approaches. I eliminated the qualitative design because it would focus on the experiences of the participants, rather than of the results of something

they did. Due to my position of authority at the research site, I was unable to conduct student interviews or to deploy a survey. Understanding the challenges and experiences as explained by new culinary arts students enrolled into the college culinary arts programs would not allow me to determine if there was a significant difference in the GPAs and program completion between those student who participated in the high school ProStart program, and those that did not participate in the ProStart program. Therefore, a qualitative design was not appropriate to answer my research questions.

I considered leveraging a mixed-methods approach. Creswell (2012) noted that experienced researches should implement a mixed-methods design as it is often too complex for novice researchers. Considering this is my first comprehensive research study, I decided to focus on answering the research questions using a quantitative design rather than adding complexity I would be unprepared to handle.

Setting and Sample

The setting for this study was a small college in the Midwest. During the time of this study, the college reported 1,600 students in four programs with a focus on hospitality management and culinary arts. The average enrollment for the School of Culinary Arts was 350 students (Anonymous, 2014). The sample was drawn from two entering cohorts of postsecondary, 2-year culinary arts and baking and pastry students. The first cohort was from October 2012 and the second, from January 2013. The two cohorts were added together to give a large enough sample size for analysis.

The sampling method used for this study was convenience sampling using data from 100% of the population who enrolled into one of the cohorts selected for analysis.

Convenience sampling is a technique where subjects are selected because of their accessibility to the researcher (Creswell, 2012). For this study, the students all attended the small college in the Midwest and enrolled into the 2-year college culinary arts or baking and pastry program. The total sample size for this study was 139 students, or 139 total student records. The office of institutional research identified those students who enrolled within the study parameter and identified 139 students, or qualifying study participants. The archived transcripts for those students were extracted from the student record software system and printed. Once copies of the available high school transcripts and all college transcripts were printed, the office of institutional research removed student identifying information.

Instrumentation and Materials

Archived data were used in this study. The high school and college transcripts for each student were collected. I requested the high school transcripts of each participant who enrolled during the measurement period and also the college transcripts from the research site. All data needed for this study were contained within these two documents for each participant. One additional piece of information required was the validation of the ProStart program the student may or may not have participated in. I could see the high school name and address on each participants high school transcript and cross referenced that to the participating list of schools published by the NRAEF. I could review the courses completed to determine if they participated in the high school culinary arts curriculum. The office list of participating ProStart schools was provided by the

Executive Director of the National Restaurant Association Education Foundation, Mr. Rob Gifford.

The college transcripts were deemed accurate and complete because they are reviewed and approved by the college registrar and these data are also used and submitted each year to the Department of Education and the state board of higher education. The college transcript includes courses attempted, completed, the dates of enrollment into each course, program completion date, and the cumulative grade point average achieved. The student's high school transcript includes the high school name the student attended, dates of enrollment into each course, the courses attempted and completed, and the grade point average earned. By looking at the name of the high school and courses attempted, I could compare to the official list of participating ProStart schools to determine if the student participated in the ProStart program. Each student's high school transcript was previously reviewed and approved by the Director of Admissions for admission to the college program, and is deemed accurate and complete.

Once I received the data, I first reviewed to ensure each of the student transcripts were enrolled into the 2-year culinary arts or baking and pastry program. Within the sample, there were 20 students who entered into the accelerated culinary arts program. This is a 1-year program for students who have already earned a college degree and are coming to gain just the cooking skills. These five students were included in RQ1 on GPA mean comparison, and removed in time to complete analysis of RQ2.

The analysis of participating ProStart student or nonparticipating ProStart students was then completed. The transcripts were assigned to one of the two groups, 1

for ProStart student and 2 for non ProStart student, and given a randomly assigned number. The student's transcript was color coded as well to ensure the two groups were kept separate. Within each group, the entering cohort date was highlighted and the transcripts were again separated by entering in October 2012 or January 2013. Finally, the college GPA was reviewed and total written on the front of each transcript. The college transcript GPA was used, not including any transfer credit the student may have received from a previous institution.

Data Collection and Analysis

A written request was sent to the Director of Institutional Research requesting cooperation for this study. The Director of Institutional Research currently reports to the Registrar, who now reports to the Provost. Once agreed to by the Director of Institutional Research and Registrar, the letter of cooperation was sent by the Director of Finance and Operations, who at the time of the request, was the most senior member of the academic team. The letter of cooperation was received on July 1, 2015, and was submitted for approval with Walden University's IRB application.

At the time of data collection, I served in a leadership capacity at this research site. To ensure no coercion took place, I followed the standard operating procedure of the Office of Institutional Research, which included submitting a formal request for cooperation. The request was reviewed and approved by the Director of Institutional Research, irrespective of my leadership role.

Once permission was granted by Walden's IRB (Approval Number 12-04-15-0406550), I continued to follow the outlined policy for data requests, and e-mailed the

Office of Institutional Research requesting the archival data needed for the study. Specifically, I contacted the Manager of Institutional Research who reports to the Director of Institutional Research. The data request was for the high school and college transcripts for those students who enrolled in the 2-year college culinary arts or baking and pastry program in October 2012 and January 2013. As per the policy of the Office of Institutional Research, I requested the data to be scrubbed by the Manager of Institution Research to de-identify student information.

The Office of Institutional Research provides all data requests in hard copy format. For this study, I met with the Director of Institutional on Thursday, December 17th, 2015 and she handed me the data in a closed file folder. I kept the file folder in my possession as I flew back to my home and then locked it into a secure location in my home office. I used a password protected computer for data analysis which only I had access to this passcode.

Data Analysis

A *t* test analysis was used as the primary method of analysis in this study. The independent *t* test was appropriate because it is a test of mean value differences between sums of values from two groups (Creswell, 2012). By using a *t* test, I could determine if there was a significant difference in the academic achievement between the group of students who participated in the ProStart curriculum in high school and those who did not participate in the ProStart curriculum. I also used the *t* test to determine if there was a significant difference in mean time to completion between college-level culinary arts students who participated in ProStart curriculum in high school and college-level culinary

arts students who did not participate in ProStart curriculum in high school. An Analysis of Variance (ANOVA) was not needed because I was measuring the differences between two groups and not three.

RQ1. To complete the analysis of RQ 1, I entered the data and used the IBM software package, Statistical Package for the Social Sciences (SPSS). I used SPSS to perform the *t* test between AGPAs between the two groups. I entered the data indicating if the participant participated in or did not participate in the high school ProStart program and individual entered each GPA as found on the participants official transcript. Table 1 provides a representation of how data was organized to be analyzed.

Table 1

Statistical Analysis RQ1

Statistical Test	Population	Independent Variable	Dependent Variable
t test	All students at research site who enrolled in culinary arts or baking and pastry program in October 2012 or January 2013	ProStart or Non ProStart	Accumulated Grade Point Average (AGPA)

As indicated in Table 1, the independent variable was participation or nonparticipation in the high school ProStart program and the dependent variable was accumulated grade point average for courses taken at the research site. The population was all students who enrolled in the culinary arts or baking and pastry program in October 2012 or January 2013. The *t* test, tested the stated null hypothesis (Aslan, 2014; Prawitz & Cohart, 2014; Rojewski & Lee, 2012).

RQ2. To complete the analysis of RQ2, I also entered the data and used SPSS to analyze the data. I conducted a *t* test to test for a significant difference in mean time to completion between the two groups. I entered the data identifying if the participant participated in the ProStart high school program or did not participate, and I entered the number of months it took for them to complete the academic program.

Table 2 includes data related to RQ2, prior participation or nonparticipation in a secondary education ProStart program remained the independent variable and mean time to completion the dependent variable.

Table 2

Statistical Analysis RQ2

Statistical Test	Population	Independent Variable	Dependent Variable
t test	All students who enrolled in the culinary arts or baking and pastry two year program in October 2012 or January 2013	ProStart or Non ProStart	Number of Quarters to Graduate

It is important to note in Table 2 that the total population was $n = 139$, and the number of graduates was $n = 61$. However, $n = 20$ of the graduates were enrolled in the 1-year accelerated associates degree program and were therefore eliminated from the sample population. To qualify for the Accelerated program, students must enter with a bachelor's degree and then complete a 5 quarter cohort program of only culinary courses (Anonymous, 2015). To effectively compare the two populations, only those enrolled into the 2-year program were compared for graduation achievement, and the accelerated associate degree students were removed from the sample.

Data Analysis Results

RQ1. The following is RQ1, the stated null hypothesis and alternative hypothesis, and the findings after analyzing the data in SPSS.

> RQ1: What is the difference in mean accumulated grade point averages between college-level culinary arts students who participated in ProStart curriculum in high school and college-level culinary arts students who did not participate in a ProStart curriculum in high school?

$H_0$1: There is no statistically significant difference in mean accumulated grade point averages between college-level culinary arts students who participated in ProStart curriculum in high school and college-level culinary arts students who did not participate in a ProStart curriculum in high school.

H_a1: There is a statistically significant difference in mean accumulated grade point averages between college-level culinary arts students who participated in ProStart

curriculum in high school and college-level culinary arts students who did not participate in a ProStart curriculum in high school.

As shown in Table 3, before analyzing the results of the *t* test, I had to determine whether to assume equal variance. An alpha level of 0.05 was used to determine significance. This test indicated that equal variances could not be assumed, $p = .006$ (Creswell, 2012; George & Mallery, 2014).

Table 3

Independent Samples t Test

		Levene's Test for Equality of Variances		*t* Test for Equality of Means				
		F	Sig.	*t*	*df*	Sig.	Mean (2-tailed)	SED Difference
GPA	Equal Variances Assumed	7.776	0.006	2.381	137	0.019	0.578	0.243
	Equal Variances Not Assumed			4.605	58.091	.0000	0.578	0.125

		t test for Equality of Means	
		95% Confidence Interval Of the Difference	
		Lower	Upper
GPA	Equal Variances Assumed	0.098	1.059
	Equal Variances Not Assumed	0.327	0.830

As shown in Table 4, there was a significant difference in the AGPA for ProStart, $M = 3.06$, $SD = .088$) and non ProStart ($M = 2.48$, $SD = .990$) conditions; $t(139) = 4.605$, $p = 0.000$. These results suggest that the students who participated in the ProStart program performed academically better in the college program, as measured by AGPA. Specifically, the students exposed to the ProStart program in high school performed academically better in the college culinary arts or baking and pastry program than the students who did not participate in the high school program.

Table 4

Group Statistics of ProStart and Non ProStart Students (AGPA): RQ1

	Group	*N*	*M*	*SD*	SEM
AGPA	ProStart	17	3.06	.363	.088
	Non ProStart	122	2.48	.990	.089

RQ2. The following is RQ2, the stated null hypothesis and alternative hypothesis, and the findings after analyzing the data in SPSS.

RQ2: What is the difference in mean time to completion between college-level culinary arts students who participated in ProStart curriculum in high school and college-level culinary arts students who did not participate in a ProStart curriculum in high school?

$H_0$2: There is no statistically significant difference in mean time to completion between college-level culinary arts students who participated in ProStart curriculum in high school and college-level culinary arts students who did not participate in ProStart curriculum in high school.

H_a2: There is a statistically significant difference in mean time to completion between college-level culinary arts students who participated in ProStart curriculum in high school and college-level culinary arts students who did not participate in ProStart curriculum in high school. Table 5 indicates the results of the independent samples *t* test.

As depicted in Table 5, before analyzing the results of the t test, I had to determine whether to assume equal variance. An alpha level of 0.05 was used to determine significance. This test indicated that equal variances could be assumed, p = .653 (Creswell, 2012; George & Mallery, 2014).

Table 5

Independent Samples t *Test(2)*

		Levene's Test for Equalityof Variances		*t* Test for Equality of Means				
		F	Sig.	*t*	*df*	Sig.	Mean (2-tailed)	SED Difference
Time to Completion	Equal Variances Assumed	.205	.653	.184	39	.855	0.065	.0357
	Equal Variances Not Assumed			.187	24.34	.853	0.065	0.352

		t test for Equality of Means	
		95% Confidence Interval Of the Difference	
		Lower	Upper
GPA	Equal Variances Assumed	-.657	.789
	Equal Variances Not Assumed	-.661	.793

As shown in Table 6, an independent samples *t* test was conducted to compare the means of the two groups (Table 6). The *t* test indicated there was not a significant difference between the time to completion between the ProStart ($M = 6.92$, $SD = 1.03$) and non ProStart ($M = 6.85$, $SD = 1.07$) conditions; $t(39) = .184$, $p = .855$. The *M* value represents the number of 10 week quarters the student took to complete the culinary arts or baking and pastry program. These results suggest that the students who participated in the ProStart program in high school did not graduate at a significantly faster pace than the students who did not participate in the ProStart program in high school

Table 6

t *Test Results for ProStart and Non ProStart Students (Graduation)*

	Group	*N*	*M*	*SD*	SEM
Quarters to Graduate	ProStart	13	6.9231	1.03	.287
	Non ProStart	28	6.8571	1.07	.203

Assumptions, Limitations, Scope, and Delimitations

Assumptions

This study is based on the assumption that valid and reliable data can be obtained. A second assumption was that there were students who enrolled into the college culinary arts program who did, and who did not participate in the high school ProStart program. A further assumption made was that there was sufficient data to determine statistical significance.

Limitations

Once the data were collected by the Office of Institutional Research, the data set was $n = 139$. That is considered a small data set and therefore, the ability to generalize the findings to a broader population may be limited. The number of ProStart students ($n = 17$) was a small sample as compared to the ($n = 122$) students who did not enter the college program having participated in the high school ProStart program. For RQ2, the accelerated associate degree students were eliminated from the analysis as their expected program completion time was half that of the two year associate degree students.

The quantitative statistical *t* test, tests for independent means and not individual scores of students in either group. Further analysis could be conducted looking at the individual scores, for each student, and comparing them quarter-by-quarter. The conclusion will focus on the means of each group, and not on individual differences between specific participants. This study included a combination of two cohorts of students, one from October 2012 and one from January 2013 and the results are directly related to that single period in time. Finally, due to my skill level as a novice research, a

quantitative approach was used versus the more comprehensive approach of conducting a mixed-methods study.

Scope of Study

The scope of this study only included participants in a specific culinary arts or baking and pastry program at a small college in the Midwest who enrolled in October 2012 or January 2013. The students entered the college program having participated in a high school ProStart program or having not participated in this high school program. The students analyzed were all expected to complete the college program in two years.

Delimitations

Data from only one small college in the Midwest was used in the study. Only two groups of students were compared; those students who participated in the high school ProStart program and those students who did not. Only student grade point averages and percentage of each group who graduated from the culinary arts program were compared. Finally, only a quantitative analysis was performed, which did not include gathering qualitative information from students about their experience in the college culinary arts or baking and pastry program.

Protection of Participants' Rights

To ensure the protection of student information, I followed the Walden University IRB guidelines for research and ethics compliance (Walden University, 2015) and agreed to follow all guidelines presented throughout the completion of my study. I also completed the online training and certification course by The National Institutes of Health (NIH) Office of Extramural Research and became certified in the course,

Protecting Human Research Participants. This certificate was included in my application to Walden's IRB. I used archival data and ensured I obtained the data directly from the Manager of Institutional Research. As per the policy of the Office of Institutional Research, at the research site, I received the data after the student's name, address, and social security numbers had been removed. Once I received the data, I kept the paper files in a locked file cabinet in my office and will keep the data for a minimum of 5 years. Once I analyzed the data and uploaded into SPSS, I used a password protected laptop to save the information and will also keep that electronic file for a period of five years. After five years, I will permanently delete it.

Summary

Section 2 included an overview of the steps taken to analyze the data, the tool selected to complete the data analysis, and the findings for RQ1 and RQ2 which are presented in narrative and table format. Additionally, the assumptions, limitations, scope, delimitations, and steps taken to protect the study participants are covered. Specifically, in the data analysis findings portion of Section 2, the results of the data analysis are covered which confirmed a significant difference in mean GPAs between the two groups, but no significant difference in time to completion between the two groups.

Based on the findings of RQ1 and RQ2, a position paper highlighting the findings and recommendation to create a peer-to-peer mentoring program to improve student GPAs will be developed. This position paper is appropriate because it is a standard vehicle to communicate study findings and recommended improvements or proposed new

initiatives to college administrators. The creation of this position paper will be outlined in Section 3.

Section 3: The Project

Introduction

The focus of this research study was to determine if the high school ProStart program had an impact on the academic achievement and completion of college culinary arts or baking and pastry students. This section describes the scope of the recommended project, the rational for selection, and a literature review to support the recommendation. A description of the project implementation plan, potential barriers, timetable, roles and responsibilities and evaluation method is also included.

Description and Goals

In this section, I describe a peer-mentorship program designed to leverage the academic achievement of students who previously participated in the high school ProStart program to those students who did not previously participate. A peer-to-peer mentorship program was selected due to the study findings and due to the positive benefits to both mentors and mentees. These benefits include improved academic achievement, enhanced confidence, learning to take risks to achieve goals, recognition and encouragement, access to a support system when needed, improved interpersonal skills, psychosocial growth, and gaining insight and strategies to increase academic responsibilities, among many others (Esplin, Pinnegar, & Seabold, 2012).

As identified in the findings of RQ1, the students who participated in the ProStart program in high school had a statistically significantly higher AGPA in the college culinary arts or baking and pastry program than those students who did not participate in the high school ProStart program. While RQ2 showed there was not a significant

difference in time to completion between the two groups, leveraging the higher level of academic success of the former ProStart students through a peer mentorship program will raise the overall academic success of the entire population (Sammalisto Steiner & Sundstrom, 2013). This outcome is good for students as well as for the reputation of the college.

The recommendation of implementing a peer-mentoring program will be presented through a positon paper. This position paper will contain the problem, the research questions and findings, an outline of the resources needed to implement the program, as well as the reasons the peer-mentoring program could have a positive impact on culinary student academic success and completion. This paper was written to positively persuade the college administration to implement this mentoring program.

Rationale

The project genre is a position paper recommending the creation of a peer-to-peer mentoring program. I chose this project because it addressed the problem of the students who did not participate in the high school ProStart program having lower academic achievement compared to those that did participate in the high school program. I chose it due to the benefits it brings to former ProStart students in terms of knowledge sharing, enhancement of leadership, coaching, leadership, and management, skills, as well as, providing the mentors with developing their potential and realizing internal satisfaction (Sammalisto Steiner & Sundstrom, 2013). I chose to present this recommendation through a position paper which I intend to present to the college administration and to the board of directors of the NAREF.

Although I did not find a statistically significant difference in the rate to completion between the two groups, which was research question two, the benefits of mentoring could also have a positive impact on student retention and completion as confirmed by (Collings, Swanson, & Watkins, 2014), Collings et al. concluded that peer mentored individuals sustained higher rates of integration into their new environment. The nonpeer mentored learners were four times more likely to seriously consider dropping out of the university compared to mentored students. Although a statistical difference was not determined, the mentoring program designed to address the academic achievement of all culinary and baking and pastry students, could have a positive impact on the overall retention and time to completion of the population.

Review of the Literature

A review of the literature relative to peer-mentoring, college mentoring, college mentoring in higher education, and mentoring and improved academics was completed. The following literature review outlines a sampling of the current research on select topics related to this specific project. The topic of mentoring tied to improved college retention, benefits to the mentor and benefits to the mentee were all researched. The literature review confirmed other colleges investing in or piloting peer-mentoring programs, and that peer-mentoring programs are shown to have a position impact on student academic achievement.

The databases used for this literature review were, ERIC, Education Research Complete, Thoreau, Hospitality and Tourism Complete, and SAGE Primer. The Walden University library was used extensively for this literature review. The search terms used

in varying combinations were *peer-mentoring, college mentoring, mentoring and college completion, mentoring and academic improvement, benefits to mentors, and benefits to mentees.* Additionally, *mentoring improvement in academic achievement, and peer-mentoring improving college retention* were explored. The information is outlined in the following sections: Peer-to-peer mentoring, benefits to mentee, benefits to the mentor, and summary.

The review of the literature outlines the evidence to support the development of a peer-to-peer mentoring program. The mentoring program has been developed to provide additional support to the non ProStart students, and to raise the overall academic level of the culinary arts and baking and pastry students at the research site. The selection of a peer-to-peer mentoring program is appropriate based on the findings of the research questions, the current literature review, and to address the problem at the small college in the Midwest. Peer-to-peer mentoring is recognized as a strategy to improve students' academic outcomes (Snowden & Hardy, 2012). Peer-to-peer mentoring has benefits for the mentor as well as the mentee and gives both the opportunity to learn new skills and to enhance their learning.

There are many benefits to both the mentor and mentee participating in a defined program. A critical component to their success is the structure and design of the program (Esplin, Pinnegar & Seabold, 2012). Finch and Fernández (2014) researched a five-step model for mentoring new graduate students who desire to create a course from start to finish. This model, *From Conception to Co-instructor to Completion* (FCCIC), had been in place for several years with little evidence to the impact it had on the overall

experience of the student. Finch and Fernández (2014) used group interviews to determine that through this five-step framework, the mentees felt they were learning in a structured environment and that they were supported to grow and to develop.

Other research done to determine the importance of having a structured mentoring program was completed by Santora, Mason and Sheahan (2013). They proposed a framework for establishing mentoring programs with the goal that the mentee and mentor would see the process as inclusive and that both would benefit from clear communication and partnership. They concluded that creating a model up front would ensure all participants felt satisfied with the experience and felt they were a part of an inclusive and supportive program.

When considering the implementation of a peer-mentoring program, the school leadership must be aware of any associated cost and ensure they have the financial resources to successfully implement and carry forward the proposed plan (Goldstein, 2012). Bettinger, Boatman and Long (2013) researched developmental programs and confirmed that many programs designed to support student persistence and academic achievement were underfunded. Bettinger et al. noted the importance of establishing a budget, and then working through the process to ensure the proper funding is secure, prior to implementation of the program.

Although there are many benefits to peer-to-peer mentoring, utilizing a solid framework and ensuring that financial resources are available are both important components to a successful implementation. Understanding the goals of the program and setting benchmarks will help to ensure the program stays on track and that the objectives

are met. The following provides the benefits of peer-to-peer mentoring, along with specific advantages to both the mentee and mentor.

Peer-to-Peer Mentoring

Peer-to-peer mentoring programs have been around for several years, however, have gained in popularity over the last 10 years (Snowden & Hardy, 2012). One of the first instructors to develop a peer teaching or mentoring program in a college or university was Marcel Goldschmid at McGill University in Montreal, Canada (Whitman, 1988). Goldschmid was looking for an alternative instructional strategy to support student learning and achievement. At the time he first built this model, he was teaching in classrooms of 200-300 students and needed a way to provide academic and social support to students outside the traditional classroom environment. His creation and implementation led others to follow and today many colleges and universities have implemented some form of peer mentoring (Hoffert, Brickner-McDonald, Bjellquist, & Lang, 2015).

The goal of most peer-to-peer mentoring programs is to leverage the strength, skill, or experience of one student to benefit another (Snowden & Hardy, 2012). Programs can vary in size and level of implementation; however, most have several common characteristics (Zevallos & Washburn, M. (2014). This includes defined program goals, criteria for potential mentors, a clear definition of the responsibilities of the mentor and mentee, a method for measurement of success, a schedule for implementation, and an overall framework for implementation and management of the program (Snowden & Hardy, 2012).

All mentoring programs have prescribed benefits to both the mentor and mentee. One study that relates directly to the proposed project of this doctoral study was completed by Hryciw, Tangalakis, Supple, and Best (2013). These researchers evaluated the effectiveness of a peer mentoring program for a cohort of bachelor degree paramedic students. Second year students were paired up with first year students, most of mature age and with limited prior academic experience. They attended formal mentoring sessions and participated in coaching sessions over one academic year. Hryciw et al. discovered a significant difference in the academic performance and attrition between the two groups. Academic achievement improved and attrition decreased for the group of mentees, as compared to the group that did not benefit from having an assigned mentor. They determined there was a statistically significant positive difference between the results of those that participated in the peer mentoring program compared to those that did not. This study has direct implications to the proposed project of this doctoral study in order to improve the academic performance and completion of college level culinary arts and baking and pastry students.

Another study highlighting the role of peer-to-peer mentoring was completed Lin (2014). Lin utilized a phenomenology design and completed in-depth interviews with 16 first year Master's students enrolled at a Taiwan University. The study was focused on determining if the 16 students benefited from the support of a defined peer-mentoring program. Lin determined that the student participants benefited from the peer-mentoring program, specifically in the areas of reduced academic anxiety, improved overall satisfaction with the university, and a positive feeling of having additional support.

Udiutoma and Srinovita (2015) believed that by establishing mentoring and financial assistance programs for students in Indonesia, the country's overall social and economic standing would improve. To confirm this thinking, Udiutoma and Srinovita used descriptive analytics to measure the impact of formal mentoring and scholarship programs in place at 5 universities across Indonesia. The results showed that a mentoring program could improve overall knowledge and skills of the participants, thus making them stronger and more prepared. This could have a positive impact on retention and student completion of college level programs. (Udiutoma et al., 2015).

David, Root and Shojai (2014) completed an empirical study measuring the impact of various forms on intervention in college academic programs. Specifically, using a *t* test, they measured the effectiveness of developmental programs that contained a key component of student mentoring at a university located in the United States. David, Root and Shojai determined that students who fully engage with intervention programs, that contain required mentoring, sustain a higher level of academic performance. Additionally, the researchers determined that these early gains were not sustainable in the following two years if the participation in the program was stopped.

Benefits to the Mentee

In any mentoring program, there are a number of benefits to the mentee. First, it provides the mentee with an opportunity for access to an objective and supportive perspective (Collings & Watkins, 2014). This perspective is often not available from professors, academic advisors, or parents. Mentees also receive support and nurturing during times of challenge and transition (Castleman & Page, 2013). Andrews and

Akerson (2012) concluded that this support can be invaluable to a student transitioning into a college environment.

An important benefit to the mentee, and linked to the results of this research study, is the positive impact mentoring can make on a students' academic achievement. Leidenfrost, Strassnig, Schütz, Carbon, and Schabmann (2014) examined the effects of various mentoring styles on the academic achievement of students after their first and second year of college. The data set consisted of 417 students at the University of Vienna. Of the data set, they were broken into various forms of mentoring including peer mentoring and also included 48 students who did not participate in any form of mentoring. Those students who participated in one of the mentoring programs performed better academically than those 48 students who did not. This has important relevance to the recommendation that in order to improve the academic achievement of the baking and pastry students, that a formal peer mentoring program be established.

In mentoring programs, mentees also develop confidence in dealing with issues, especially those where they have no prior experience. Kendricks, Nedunuri, and Arment (2013) analyzed the Benjamin Banneker Scholars Program (BBSP) that is a part of several HBCU's. This program was designed to improve the academic performance and completion of minority students enrolled into science, technology, engineering, and mathematics (STEM) courses. At the end of each year, a survey was conducted to gain insight into student's feedback about the program. Mentoring was consistently ranked as having the most significant impact on the student's perceived success in the program.

Specifically noted was the roles mentors played in helping students navigate new challenges and issues they had not experienced before.

The positive benefits to mentees have also been shown in academic settings outside of higher education. Biggs, Harvey, and Musewe (2014) analyzed the impact that adult mentors could have on Black, underprivileged, elementary school students. Through a quantitative study, comparing the academic scores of two groups of students, they determined that those students who were mentored had higher grade point averages in math, science and reading than those students who were not mentored by an adult.

Peer-to-peer mentoring opportunities can also occur at the start of a students' academic career. This could provide them with exposure to the process and benefits of mentoring programs. Bowden (2104) used her role as a kindergarten teacher to investigate peer-to-peer mentoring with her young learners. She determined that mentoring provides improved character building, accountability, and allows students to practice new skills and to share areas where they may be doing well. Bowden (2014) also determined that the confidence level of the mentee improved through sharing knowledge and learning in a supportive environment.

Chana et al. (2013) investigated the Big Brothers Big Sisters (Big Brothers Big Sisters, 2016) mentoring program to better understand the relationship between formal school based mentoring and student improvement. They specifically researched the impact of mentoring on participant's academic and behavioral outcomes. The participants in the study ($N = 526$), were randomly selected and were assessed at the beginning and end of the school year. Through equation modeling, the researchers determined that the

quality of the mentoring relationship the students participated in had a direct and positive impact on their relationship with parents and teachers (Chana et al., 2013). It is important to note, that the research team took it one step further and determined that stronger relationships between students and their parents and teachers were significantly associated with higher self-esteem and attitudes about their academic experience (Chana et al., 2013) These are important findings as they indicate the mentoring has a direct and important positive impact on student outcomes.

Mentoring can also benefit teachers. Kissau and King (2015) were interested in the effectiveness of teacher-to-teacher mentoring in foreign language instruction. Using a mixed-methods design of (N = 54) participants, Kissau and King investigated the possible benefits of mentoring within the framework of second language teaching. They determined that when both the mentor and mentee share best practices, enter the program with good faith, and share self-developed content, the partnership benefits both participants. They also determined that when pairing mentors and mentees, age and previous teaching experience had positive impacts on the mentors thoughts and feelings about the experience (Kissau and King, 2015).

Another study on the benefits of teacher-to-teacher mentoring was conducted by Sherman and Camillin (2014). They wanted to measure the impact of an online mentoring program established for pre-service teachers at a small liberal art college. They investigated the benefits felt by the student teacher (N = 108) when mentored by (N = 6) experienced teachers. They determined that such formal mentoring programs can have a positive impact on the pre-service teachers, including improving program retention

(Sherman & Camillin, 2014). These findings are similar on the benefit of retention are similar to those found in peer-to-peer mentoring studies (Best, Hryciw, Supple, & Tanjalakis, 2013; Snowden & Hardy, 2012; Whitman, 1988).

An additional important benefit to the mentee is that the mentor helps them to set goals and coaches them to persist towards achievement. Ragavan (2014) completed a qualitative study to determine the impact of a defined peer mentoring program at a UK law school in Newcastle. The program consisted of creating a specific environment or group for these students, facilitating workshops and sessions for students to gain a better understanding of expectations and to set goals and action plans. The outcome was an increase in the number of students who passed the first year law exam and a reduction in the attrition of new students.

Mentees can benefit from guidance on their career goals and direction. In the field of culinary arts, students are typically motivated by the hands on nature of the discipline. Receiving guidance and support from those that came before them can help to ease concerns and help mentees create their own pathway to completion and on into the industry. Snowden and Hardy (2012) examined the impact of a peer mentorship program on a health and social welfare program at a university in the United Kingdom. This ethnographic case study contained data from a small group of mentees and mentors over the period of one academic year. Snowden and Hardy concluded that peer mentoring improves assessment performance of both groups, reduces anxiety and stress, drive participation in extracurricular groups, and adds value to the overall student experience.

Benefits to the Mentor

Although most peer mentoring programs are established to bring value to the mentee, there are also important benefits to the mentor. Considering the leadership role a mentor takes in developing a mentee, a key benefit to them is the enhanced skills and satisfaction they receive by helping another student. Chester, Burton, Xenos, and Elgar (2013) examined the benefits of a mentoring program on 241 first year undergraduate psychology students enrolled at a metropolitan Australian university. In addition to outlining a number of benefits to the mentee, they also discovered grade improvement of the mentors and improvement in several psychological literacies.

A key benefit to mentors participating in defined peer mentorship program within a college setting is stability or improvement in academic performance. Daud and Shahrill (2014) examined the impact that high-performing students would have on low performing students. They specifically explored whether peer mentoring of electrical engineering students improved the acquisition of mathematics skills. Throughout their study, they used quantitative pre and posttest exam data, as well as held group interviews, class observations and survey data to create a complete picture of the impact of the mentorship program. One key finding related to the mentor is that they either maintained their current academic achievement rate, or improved that rate over the period of the mentorship program. The researchers noted the direct positive impact on the academic achievement of the already performing group on the skills learned through the mentorship program.

Another benefit to mentors who participate in peer-to-peer mentoring programs is enhanced confidence. Through structured interviews, Budgen, Main, Callcot, and Hamlet (2014) investigated the impact of a sports education program on first year students at a University is Australia. They concluded that while the mentees benefited from the experience, the mentors also gained confidence, and enhanced leadership skills interesting outcomes for both the first year students and mentors. Yim and Waters (2013) researched the role of confidence as well, however, they determined that the mentors rated themselves more highly in the area of support, than the mentees rated them. This study included 148 postgraduate students' highlights that while mentees often benefit from the support of a mentor, the mentor also gains new skills and may improve their own level of confidence in supporting a peer or colleague.

Mentors can gain additional excitement about their discipline of study (Beltman & Schaeben, 2012). This could include gaining additional information regarding their major through knowledge sharing and supporting a peer. Beltman and Schaeben (2012) conducted a 3-year study of ($N = 858$) mentors and fond that mentors realized positive outcomes when participating in the program, specifically in the areas of attachment to discipline of study, and feelings about overall investment in their studies. This insight could support college and university leaders investing in peer-to-peer mentoring programs due to the dual benefits they provide.

Literature Review Summary

The literature review provides an overview of a student peer-to-peer mentoring program, the benefits to the mentee and mentor, as well as a research based confirmation

that the recommended program would provide participates with improved academic achievement. This was demonstrated through providing past research studies and showcasing specific examples of peer mentoring on improved academic achievement. Although RQ2, focused on completion, did not prove to have a significant difference between the two groups, the literature review did uncover benefits of peer mentoring on student retention and completion.

Project Description

As outlined in Appendix A, the goal is to create a yearlong peer-to-peer mentoring program. This program will be under the responsibility of the Director of Student Life or Director of Student Services (Research Site Website, 2016). This decision would be made by the college president. The program would be designed by this individual and their responsibilities would include creating a statement of purpose or mission, budget, time line, shared goals, calendar of activities, and a process for measurement of achieving the stated goals. The plan should include the stated purpose, target audience, as well as the scope and sequence of the program. Once the critical goals and objectives are outlined, the initial training and program materials need to be created, activities planned, and an evaluation method created.

The program materials should include an introductory presentation positioned to introduce the program in the select mentors and mentees, a calendar and list of activities to be executed throughout the year, recruitment materials to explain the program to possible mentors and mentees, and flyers and advertising pieces to be used in the

promotion of the program. Finally, the content or curriculum will need to be developed and that is estimated to take the longest amount of time.

Implementation

Prior to program implementation, it is important to gain support from key stakeholders. This may include faculty, administration and support staff. Having them read through the position paper, and also to be briefed by the college president may help in their acceptance and support of the plan. It is recommended that this proposed mentorship plan will begin at the start of the fall term in 2016, and continue for three quarters, or one academic year at the research site. The program will first be presented at the start-of-quarter faculty meeting, and then be presented to culinary arts and baking and pastry students at new and returning student orientation in October, 2016. It is recommended that this begin as a pilot program, leveraging the 2nd year ProStart students to mentor the first year non ProStart culinary or baking and pastry students. Reviewing the sample size of the research study, it can be assumed that between 10-15 new culinary arts or baking and pastry students will participate in this program, alongside 10-15 2nd year culinary arts or baking and pastry students who previously participated in the high school ProStart program.

At the orientation sessions, the features and benefits of the peer mentoring program will be reviewed and pairing of mentors and mentees completed. The students will be introduced to the program leader and be given the expectations for participation as well as have an opportunity to answer questions and to share insights about their feelings about the program (Burton, Xenos, & Elgar, 2013) Once the baseline rollout has been

completed, the director will manage the program and be recommended to provide monthly updates.

Although I am no longer at a leadership positon at this research site, I will recommend, through the position paper, that the program Director work with the Office of Institutional Research to complete a year-end study of the success or failure of the program. This would include completing a quantitative analysis of the participants GPAs, as compared to those that did not participate, and also a qualitative analysis, through interviews, of the mentor and mentees experience in the program. These findings can be used, along with the program directors insights, to shape the program for the following year.

Potential Resources and Existing Supports

In order to create the scope of the program and launch presentation of the mentoring program, I used journal articles, websites, and books focused on mentorship. I read through the International Mentoring Association (2015) website and also attended a webinar hosted by the American Psychological Association (APA; 2016) on the creation of mentoring programs. I used resources that were specifically focused on peer mentoring in higher education but also read several articles on the role of mentoring in the K12 and corporate environment

The resources needed to complete this project include a project leader to create facilitate, and measure the success of the program (APA, 2016). This leader or facilitator will need to work collaboratively with key staff and faculty across the institution securing their buy-in and support. The facilitator would be responsible for overall program design

as well as the execution of the formal launch of the program to faculty, staff, and students. They will also be responsible for the overall success or failure of the mentoring program.

The leader of this program will need to create program materials, a calendar of activities, presentation materials for the launch of the program, a measure for program assessment, and a financial plan for funding. They will need a meeting room or classroom to launch the program, and will also need audio visual materials including a projector and whiteboard. The presentation will be made via PowerPoint and will be the primary vehicle to introduce the mentors and mentees to the program.

Potential Barriers

There are a number of barriers to the successful implementation of the proposed peer-to-peer mentoring program within the School of Culinary Arts and Baking and Pastry. First and most significant, is the possible lack of support by the administration or faculty (Ragavan, 2014). Having the support of the administration, faculty will be critical for the long term success of this program. The students who are a part of this mentoring program must also actively participate (Snowden & Hardy, 2012). Ensuring the mentors are engaged and supporting their mentees and that the mentees build trusting relationships with their mentors will add to the potential success of this program.

Another important barrier could be a lack of funding or inability to find financing for the program. This could include paying the director a stipend for leading, and funding the cost of mentor/mentee events organized throughout the year (Rawana, Sieukaran, Nguyen, & Pitawanakwat, 2015). Finally, a lack of oversight by the program leader and

inability to maintain the program throughout the academic year could inhibit the success of the initiative.

Proposal for Implementation and Timetable

The overall proposal for the establishment of the peer mentoring program should be reviewed by the research site college president, provost, and Dean of Culinary Arts in May of 2016. This will give these stakeholders time to review the plan, to ask for modifications, and to secure the needed resources to implement. These resources include securing either the Dean of Students or Director of Advising to lead the project, and also allocating the necessary financial resources. The goal would be to have the project approved by these stakeholders by July 1st, 2016. From the months of August-September, 2016, the appointed project leader will build the year plan, the PowerPoint presentation; establish the overall and monthly budget allocation, hold meetings with key staff to gain support, and plan the launch event to students for the fall orientation. Another critical activity during this period is to plan and execute the launch meeting with the faculty to be held at their fall faculty development day at the end of August, 2016.

Once the planning is complete, the program leader will launch the program at the new and returning student orientation schedule for October 2016. The program leader will then execute on their plan throughout the year and schedule time to gather qualitative information from participates on the successes and challenges of the new program. They will schedule time for reflection and ongoing program adjustment. Finally, during this period, the program leader will communicate the progress of the program to the administration and to the leadership of the NRAEF. The leader will also celebrate the

achievements of the program and share that information at quarterly faculty and staff meetings, and directly with program participants.

Roles and Responsibilities of Student and Others

My role in this project is to communicate the research findings that led to the creation of this project to the research site administrators and school of culinary arts and baking and pastry leadership team. My responsibility is to convince them of the benefits of the proposed peer mentoring program on improving the overall academic performance of new culinary arts and baking and pastry students. My role is also to inform the administration through the long term benefits of peer mentoring and to provide them with a guide on how to implement the proposed program.

The faculty also has a critical role in this project. First, they need to support and to encourage all culinary arts and baking and pastry faculty to support the program and to encourage the mentors and mentees. The research site has a high number of part time faculty and getting them to understand and support the program will add to the potential success of this initiative. The Dean of the School of Culinary Arts must also agree to work closely with the ProStart mentors and to provide them with guidance and expertise. According to DeFreitas and Bravo (2012), direct student involvement with faculty is a critical component of student academic success.

Project Evaluation

Although this proposed peer-mentoring project has not been implemented, it is important to create both a formative and summative evaluation plan to ensure the programs goals are achieved. Glazer (2104) recommended a combination of both

formative and summative in order to capture the benefits of both; mid-program evaluation that allows for change, and end of program evaluation. Glazer recommended the creation of an assessment clock model that outlines when to conduct the various assessments along with the specific point person. Establishing the calendar will ensure the right type of assessment is happening and at the most appropriate time.

Formative assessment is an ongoing evaluation technique that provides the program leader or instructor with evidence on how participants are or are not achieving the programs goals and outcomes (Purcell, 2014). Measuring progress as the program progresses provides the leader or instructor with the ability to make needed changes to the programs, prior to the programs completion. The leader of the peer mentoring program will create quarterly surveys of the students, measuring their perceptions about the benefits and challenges of the program, and bimonthly meetings will be conducted to capture qualitative information.

In addition to the ongoing formative assessment, a summative evaluation plan should be implemented. This summative assessment will include providing a comprehensive survey instrument to both mentors and mentees, as well as conducting a final group interview of all participants at the end of the program. Summative assessment will allow for further understanding of participants feelings about the program, along with relevant data on the achievement or lack of achievement of established goals (Richard, Walter, & Yoder, 2013). Having a combination of both formative and summative evaluation methods will allow the leader to provide ongoing updates to the college administration and culinary arts and baking and pastry faculty, and also allow the

program leader to ensure the peer mentoring project is on track and achieving the predetermined goals. Once the program is complete, a final summary should be produced and sent to the college president. This should include the opportunities and challenges moving forward, the meeting or exceeding of the program budget, and recommendations for the future (Richard et al., 2013).

Presentation of Recommended Peer Mentoring Program

I considered several ways to implement this recommended peer-to-peer mentoring program. First, I considered developing the curriculum to train the mentors and mentors on the program. Although this would be beneficial to the research site, I was aware that I have a limited background in curriculum development and that I may struggle with creating effective and sound curriculum. Second, I considered creating a PowerPoint summary outlining the scope of the peer-mentoring program to send to the college administration for consideration. The setback to this idea was the passive nature of the presentation and the lack of specific details on what needed to be considered for possible implementation. Finally, after discussion with my chair, I determined that writing a position paper would be the most effective means to communicate my findings and recommendation (Appendix A).

Implications Including Social Change

Local Community

The recommended project addressed the problem college culinary arts or baking and pastry students who did not participate in the high school ProStart program performing academically worse than those students who participated in the high school

program. The lack of academic achievement by the non ProStart students brings down the overall academic average of all students enrolled, and this could have a negative effect on the reputation of the college (Steiner, Sundstrom, & Sammalisto, 2013). Creating a mentoring program that leverages the academic achievement of 2nd year, former ProStart students, to first year culinary arts and baking and pastry students will improve the academic achievement of the group and provide a greater likelihood of program completion (Daud & Shahrill, 2014). Academic achievement and degree completion is good for the student, the institution and the community. Specifically, the national unemployment rate in 2014 for workers with only a high school credential was 6%, while a worker with an associate's degree was lower at 4.5% (Bureau of Labor Statistics, 2015). Helping more students achieve and complete provides a great chance of success in life for program participants.

Far-Reaching

This work is important in a broader context because it is one of the first studies to evaluate a possible connection between the NRAEF high school ProStart program and college culinary arts and baking and pastry academic success and completion. While this initial study has several limitations to generalize to a national audience, it does provide solid foundation that students who participated in the formal high school ProStart program did achieve a significant improvement in academic achievement than those students who did not participate in the program.

Looking at culinary arts and baking and pastry programs across the United States, improving the academic achievement of students could have a far reaching impact on

national program graduation rates and possibly on the number of students completing the associates degree program (Hertzman & Maasb, 2012). The implementation of the peer-mentoring program could improve the academic achievement of culinary arts and baking and pastry students in more programs outside of the research site and that would be good for those students, the administration, as well as the industry looking to employ more of these skilled college graduates (National Restaurant Association, 2015).

Conclusion

This project was designed to help improve the academic achievement of incoming college culinary arts and baking and pastry students. The project was designed in direct support of the findings of RQ1. RQ1 included analyzing the difference in mean accumulated grade point averages between college-level culinary arts students who participated in the high school ProStart program; verse those students who did not participate in the high school ProStart program. The project was selected due to its alignment to addressing the findings of RQ1, and to leverage the successful academic achievement of the former high school ProStart students. Although there was no statistical difference found in RQ2, which analyzed the difference in mean time to completion between the two groups, the tangential benefits on completion can also be addressed with a peer mentoring program.

The peer-mentoring program outlined included the overall goals and objectives, along with a thoughtful analysis of the framework and process needed for implementation. A recommended formative and summative assessment plan was included and an analysis for the possible local and far reaching implications on social

change was completed. This peer-mentoring program is outlined through a positon paper (Appendix A) and will be presented to the research site administration.

Section 4 is an overview of the projects strengths and weaknesses, limitations, resources needed, as well as a reflection of my experience completing this doctoral study. These personal experiences include self-reflection on my role of researcher, practitioner, and scholar. Also covered are project development and evaluation, the project's potential impact on social change, implications, applications, and directions for future research.

Section 4: Reflections and Conclusions

Introduction

As I began this doctoral study, I entered with anxiety and uncertainty. After many months of thoughtful analysis, I had determined that the best design to answer my research question would be a quantitative study; however, I had limited experience with SPSS or working with data. To ease my concern, I reviewed the materials from the researches courses I took early in the doctoral program, attended online tutorials focused on completing data analysis in SPSS, and spoke with my chair regarding my ability to successfully complete the study. Having worked for many months and about to complete this study, I am proud that I took a risk and tackled quantitative analysis, that I have a work product that will benefit the students, faculty and administration of the research site, and that I have a study someone else can now take to expand further and to gain additional insight about important topics of retention and college completion

In this section I will outline my reflections and analysis of the process I underwent to complete this doctoral study. I will present the project strengths, the recommendations and limitations of this study and the role of scholarship. I provide an overview of the project development and evaluation, leadership and change, self-analysis as a practitioner, scholar and project developer. Finally, I will highlight the potential impact the recommended project will have on social change.

Project Strengths

Evaluating the results of RQ1, it was important to find a project that would positively impact student academic achievement. I evaluated possible projects that also

supported RQ2 and the continued successful persistence to college completion. At first, I had several possible projects in mind; however, once I began the literature review focused on mentoring, it was clear this project best addressed the need to improve student academic achievement (Ragavan, 2014; Snowden & Hardy, 2012).

The major strengths of this project are the ease of implementation, the possible long term benefits to the mentor and mentee, and the ability for this program to improve the academic achievement and retention of first year culinary arts and baking and pastry students (Anderson et al., 2014). Looking at the limited resources needed to create and implement this program, the ease of formative and summative assessment, and past research on the direct connection between peer mentoring and improved academic achievement, made this the right project to create.

It is important to note that this project is just one piece of the overall framework needed to improve culinary arts and baking and pastry student academic achievement. The goal is that this project will not only help all stakeholders better understand the need, but to provide them with a program to rally around and to support in order to gain better results from the students, the program, the college, and industry. A final strength of this project is the ability to replicate it across other programs of study. Once the first year is completed and evaluated, this project could be used in other disciplines where there is the need to improve the academic achievement of students.

Recommendations for Remediation of Limitations

The peer mentoring project was limited to the school of culinary arts and baking and pastry at one small research site. Although there are many benefits to peer mentoring,

the project was selected to address only the academic achievement of first year culinary arts or baking and pastry students. The project addressed the needs of this specific research site. To remedy this limitation and to allow for generalization and implementation to other college culinary arts and baking and pastry programs, a follow-up study could be conducted that included student interviews. The addition of this qualitative data could reveal other areas impacting student academic achievement which may lead to another proposed project. The qualitative data received from student interviews could include a determination of the desire for students to participate in this type of formal mentoring program.

Scholarship

Prior to completing this doctoral program, I often referred to scholarship as the research faculty complete in a specific topic area. I have spent most of my career in higher education and always looked at scholarship as a soft or less valuable role the faculty member plays. Through this process, I have gained not only insight into scholarship, but also a tremendous respect and understanding for the importance and value of scholarship. Scholarship is essentially the intersection between research and innovation (Checkoway, 2013). In order to drive social change, to solve challenges found around the world, and to innovate, one must have scholarship and be willing to invest time into research.

As a researcher, I learned that doctoral-level writing is not only important, it is difficult to learn. I write daily in my professional role; I found that I was using phrases and making claims that were often not supported by research. Completing this study has

improved my writing and has me more aware of the importance of being direct in my sentence structure, of not making undocumented claims, and to take the time to write and reflect on my work.

This process also taught me many other skills. This includes the patience to accept constructive feedback, to synthesize research and data, to plan and to organize my thoughts, to construct arguments with peer reviewed research, time management, and most important, discipline. As a busy professional and mother, I had to learn to prioritize my writing and scholarship and to remain steadfast in answering my two research questions. When I completed the data analysis portion of my study, I felt a great sense of pride in answering the two research questions – knowing that my hard work was going to make a positive impact on the lives of the students, faculty, and staff of the research site.

Although this doctoral study is complete, I am looking forward to continuing to develop my research skills. Entering this process, I never expected to enjoy scholarship. Now, I cannot wait to solve other problems impacting higher education and to use the research, writing, data analysis, synthesizing, and presentation skills to drive social change.

Project Development and Evaluation

In developing this project, I learned that it is important to first ensure the project aligned to addressing the results of the research question. Next, I had to ensure the recommended project had solid research and a demonstrated track record for addressing the findings of the research study. I had to ensure that goals and objectives were established, a timeline created, budget drafted, and the people, process, and evaluation

were determined. I realized that one must consider several possible paths to address the problem and to carefully consider each feature and benefit before concluding on the best project to meet the needs.

As I developed the project, I had to remain open to allowing the research to shape my plan, and to be flexible to the design and planned execution. I also had to accept that as good as the plan might be my ability to convince the college leadership of the benefits of the project will ultimately determine if the project is approved to implement. Finally, I had to ensure that the program success or failure could be measured and outline a formative and summative evaluation methodology.

Leadership and Change

The most important lesson I learned through this process about leadership and change was the need to learn from those with more experience and to be open to the experience and recommendations of others. I learned that my chair and committee member are here to support me, that they have greater knowledge about the process and potential implications of my project recommendation. I also learned that I needed to act confidentially, to complete the research to support my recommendations, and to trust that I had developed stronger research skills through the entire length of my program.

I learned that even from my role as an administrator in higher education, I can drive change. I have the opportunity to identify a problem, to research the problem, to analyze the findings, and to propose a project to improve. I can now provide thought leadership, driving innovation and system improvements (Reid, 2015) in the areas of college culinary arts academic achievement and completion. I am confident to present

these finding and to request that follow-up studies be performed by the research site and/or the NRAEF. Prior to completing this project, I would often identify problems and immediately move to implementation. Creating this project has helped me understand the need for planning, to ensure the solution addresses the identified problem, the need for a change management plan, and to secure support and financial resources prior to implementation. I gained patience and persistence through this process, and that will make be a stronger and more effective leader in higher education.

Analysis of Self as Scholar

As a scholar, I learned that I had to complete an exhaustive literature review on the topic in order to ensure I had a complete and comprehensive understanding of the topic. I read through more than 200 journal articles and previous studies and found myself thirsty for more information on college retention, completion, and mentoring. Once I completed the data analysis portion of the study and determined that creating a student mentoring program was the best project, I became passionate about researching and learning everything I could about mentoring.

At the start of the process, I skimmed the surface of each topic. However, as I gained research skill, I found myself searching the Walden library and my local library, looking for everything I could about my topic. Most important, I now have a comprehensive understanding for some of the reasons college students do not complete, the possible reasons for their achievement or lack of academic achievement, and the role mentoring can play in supporting student academic success. I am a more knowledgeable

higher education leader and this process has enhanced my professional skills within my peer group.

Analysis of Self as Practitioner

As a practitioner, I feel it is important to participate in lifelong learning; to work each day in order to grow and to learn. Throughout this process, I learned to research online, to use SPSS, to develop a project proposal, to produce scholarly writing, and to accept and respond to constructive criticism. Prior to completing this study, I often felt disadvantaged at higher education meetings and with peers who had completed their doctorate. I was unfamiliar with the process and felt I did not have the same level of understanding or skill as they did in areas such as research. Through this process, I gained confidence as a practitioner and a knowledge source of several topics. I now see myself as a capable leader within the higher education community.

Analysis of Self as Project Developer

I take great pride in the mentoring project I created for the research site. I am confident that the administration and dean of the culinary school will not only read this study, but will also consider implementing the recommended project. The NRAEF can use the findings to cast a further study with a larger sample size.

Throughout my career in higher education, I have rolled out new programs, presented solutions to problems, created long range and strategic plans, and spent a lot of time creating PowerPoint presentations. Although I had a background in creating projects, I had not developed a mentoring program, nor thought through the positive and negative implications this type of project could have on multiple stakeholders. Taking the

time to think through the creation, execution, and measurement of the project helped me to take a comprehensive planning approach to the process. I have learned the meaning of thoughtful analysis, of planning, and of establishing a way to measure the success or failure of a new initiative. The last step of measurement is where I gained the greatest amount of new skill.

The Project's Potential Impact on Social Change

This project has the potential to impact social change at both the local and national level for educators and administrators looking to improve the retention and academic success of college culinary or baking and pastry students. Although focused on a single discipline, the role that peer-to-peer mentoring could have on student academic success could benefit students and help them to stay on track to college completion. Considering the role that degree completion plays in the future wealth and unemployment rate of an individual, helping more students achieve and complete their college degree is good for the student, society, and for the hospitality and culinary industry.

The mentoring program outlined in this study could be implemented into culinary arts and baking and pastry programs across the United States. Although the study was focused on a single program, it may be difficult to generalize to a wider population; the mentoring project focused on improving academic achievement could be replicated into other disciplines and programs outside of culinary arts. College leaders are always looking for ways to improve the academic achievement and college completion of their student population and this project could serve as a roadmap to the possible implementation of a program that would drive positive results. Keeping more students on

a path to college completion, helping mentees to gain valuable leadership skills, and supporting stronger academic success for all students will result in positive social change.

Implications, Applications, and Directions for Future Research

The purpose of this project was to create a program that would improve the academic achievement of first year culinary arts or baking and pastry students by leveraging the second year ProStart students as mentors. This recommendation led to several possible implications, including the creation of a peer mentoring program as a solution to address the academic achievement of students. Another implication is that the recommended project may also benefit the completion rate of students. Although the research showed no significant difference in the completion rate of the ProStart and non ProStart students, the mentoring project could have positive implications to completion rates of culinary and baking and pastry students (Snowden & Hardy, 2012). Finally, a possible implication of this project is on the applicability of the project to other disciplines within the research site. If the project is successfully implemented and meets the goal of improving academic achievement of the participants, the institution could look to apply the same model to other areas of the institution where there is a need to improve academic results.

The applications that this project could have on the field of higher education include the creation of a mentoring program to improve academic achievement of students, and the possible additional benefits of supporting persistence and completion rates. This solution could be replicated in other disciplines and in other colleges across the United States. As demonstrated in the literature review, there is evidence that this

mentoring program now only can support academic achievement, but also provide many positive psychological benefits to both the mentor and the mentee.

The project's benefits as well as limitations leads to the need for further research. This research could include expanding this specific study to additional research sites or to expanding the scope of the study to a mixed methods model that includes participant interviews. Combining the quantitative data with participant thoughts and feeling gained through interviews could bring greater clarity into the exact reasons the ProStart students performed better academically than the non ProStart students. Based on this deeper understanding an alternative project could be created (Creswell, 2012).

Conclusion

In Section 4, I outlined the projects strengths, recommendations and limitations. I also analyzed the scope of the project and its development and evaluation. I reflected on my role as a scholar, practitioner and project developer and analyzed how I developed as a leader and change agent. I shared my perspective on how this study and project could impact both local and far reaching social change and reviewed the possible applications, implications and director for future research.

The findings of this study indicate that those college level culinary arts or baking and pastry students who participate in the NAREF ProStart high school program perform academically better that those college culinary arts or baking and pastry students who did not participate in the high school program. These are important findings for the research site administration. The position paper found in Appendix A recommends the establishment of peer-to-peer mentoring program to leverage the former ProStart students

to mentor the first year non ProStart students. This program will raise the overall academic performance of the culinary arts and baking and pastry students, and will also have a position effect on student persistence and completion. This study is just the first step in understanding the possible connection between the high school program and college success and should be used to inspire future research at this site, or at other culinary arts and baking and pastry programs found in colleges around the United States.

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Appendix A: Executive Summary

Background

This executive summary has been prepared for the college president, her cabinet, and the culinary arts and baking and pastry dean. It is provided with the intent to encourage implementation of a peer-to-peer mentoring program to improve the current academic achievement of the college culinary arts and baking and pastry students. This need was identified through the findings of the study, *The Relationship Between High School Culinary Curriculum and Culinary Arts College Student Achievement and Completion* – a project study completed by Emily Williams Knight in pursuit of her doctoral degree in higher education leadership from Walden University between January 2013 and April 2016.

The purpose of this study was to determine if the high school ProStart program could have had an impact on the academic achievement and completion of college culinary arts and baking and pastry students. The local college's retention rates mirror those of the national reported data, with only 41% of first time, full time students who began the culinary arts associates' degree program in the fall 2011, completing the program within 3 years (IPEDS, 2014). Using the Department of Education metric (National Center for Education Statistics, 2013) for completion of first time, full time first year students, it means that 59% of students, who began did not finish the 2-year program within 3 years. Further, analyzing the year-to-year retention rate for the culinary arts associate degree program, from 2012-2013, of all students who started in October of 2012, only 73% of students remained enrolled at the end of their first year (College

Annual Report, 2014). Those data mean 27% of students did not make it through the first year of the program and exited, for various reasons, over the course of the first 12 months.

On the national level, with clear local impact, there is a heightened sense of urgency to improve completion rates due to continued criticism by key legislators regarding the cost and return on investment of college programs (Breed, McKinney, Mukherjee, Shefman, & Wade, 2015). Additionally, industry is concerned with the number of program completers. The Bureau of Labor Statistics (2014) projected 5% growth in the culinary industry; therefore, industry leaders will need trained labor to meet this growing demand.

On a local level, the lack of completers and overall academic performance of the culinary arts and baking and students is a concern for the college leadership team (K. Shambrook, personal communication, January 11, 2015). This reality can have a long term negative impact on the overall financial health of the college. This lack of student completers, coupled with the cost of many of these programs (National Center for Education Statistics, 2013) has the college leadership looking for strategies to improve persistence and completion rates (Marckle, 2015).

With continued lower than average completion rates, the college will experience a loss of tuition revenue; this financial loss could have a material impact on the financial sustainability of the institution (Fowles, 2013). A college budgets each year and plans for new as well as retuning students. When either of these targets are less than projections, many colleges do not have alternative strategies to recover the loss of revenue (Harding,

2014). This loss of expected revenue puts financial strain on the institution and may mean key initiatives or other areas of investment need to be postponed (Fowles, 2013).

Another negative impact of higher attrition is with the school's accrediting agency and the state and federal legislative oversight that monitors such outcomes as completion (National Center for Education Statistics, 2013). Over the last 5 years, there has been growing oversight and focus by the federal government, specifically by the Department of Education who has been working on new legislation related to graduation rates and the ability for students to find a job (Hentschke & Parry, 2014). If the college has lower graduation rates, specifically against national averages established by the Department of Education, it can have a negative impact on the brand and image of the institution by students and their families (Hentschke & Parry, 2014). Lower graduation rates can impact long term enrollment for the college. It can also mean negative ramifications from the Department of Education in the form of reduced access to federal funding and tighter annual reporting requirements (Natow, 2015).

Along with the negative implications attrition has on an institution of higher education, attrition can also have a negative impact on perspective students and their families (Hentschke & Parry, 2014). As part of their evaluation process, many parents and perspective students look at the graduation rates of colleges (Steiner, Sundstrom, & Sammalisto, 2013). The current attrition results from this college could deter students from selecting this particular culinary arts or baking and pastry program. The role of reputation based on outcomes is expected to grow in importance in the years to come (Steiner, Sundstrom, & Sammalisto, 2013).

On the regional level, the mayor of a large city in the Midwest has publically stated that tourism and growth of the restaurant sector is a cornerstone of his economic agenda. The mayor has established a city goal for annual tourists of 55 million visitors a year (Anonymous, 2014). City economists estimated that if this goal is achieved by 2020, an additional 30,000 jobs will be created (Anonymous, 2014). There is current and growing demand for skilled culinary arts professionals. Prepared students who complete programs will be critical to achieving the mayor's economic growth agenda. This college produces a significant number of graduates into the local market and needs to continue to maintain the trust and positive working relationship it has today with the city in which it resides. Lack of completion, heightened legal and regulatory risk, an administration focused on persistence and academic success, and a local environment depending on trained culinary talent to serve the growing tourism industry are all key drivers for the reasons this study was conducted. Researching a possible reason for student academic success and completion will assist the college leadership in improving these metrics. These metrics are critical to the college leadership, regulators, governments, and industry.

Project Study Overview

A quantitative approach to the project study involved analyzing archived data from the research site. This included participant high school and college transcripts for two cohorts of students, entering the two-year culinary arts or baking and pastry program, in either October 2013 or January 2014. The data reviewed included the high school transcript for confirmation of participating in the ProStart program, and the college

transcript which include the students grade point average and time to completion, or program withdrawal.

The goals of this quantitative study were 1) to determine if there was a significant difference in the academic achievement, as measured by participant accumulated grade point average (AGPA) between college culinary arts or baking and pastry students who participated in the high school ProStart program, as compared to those who did not participate in the ProStart program; 2) to determine if there was a significant difference in the time to completion, as measured by the number of months, between college culinary arts or baking and pastry students who participated in the high school ProStart program, as compared to those who did not participate in the ProStart program. I examined student transcripts, collected from the Office of Institutional Research. I analyzed the grade point average, for courses attempted at the research site, as well as the number of months it took students to complete the degree program.

Summary of the Analysis and Findings

I selected a quantitative approach for several reasons. First, the quantitative design allowed me to take a theory, compare groups or variables using statistical analysis, and then summarize the findings into a presentation using numeric data (Creswell, 2012, p.13). Using a quantitative approach also provided me with an opportunity to determine if one variable could have affected the other, without requiring additional research skills needed in a comprehensive mixed methods study. I investigated whether or not the secondary ProStart curriculum could have affected postsecondary students' academic performance and completion as assessed by their grade point average and their time to

completion of the 2-year postsecondary culinary arts or baking and pastry programs. The quantitative design allowed me to compare the two groups, to collect and analyze numeric data from the groups, and to answer the two research questions.

I developed two research questions and used the *t* test to complete the analysis within the IBM software package, SPSS. These research questions align to the two goals presented earlier. Each question was examined separately and the findings also recorded individually.

Goal 1

Goal 1 of this study was to determine if there was a significant difference in the academic achievement, as measured by participant AGPAs, between college culinary arts or baking and pastry students who participated in the high school ProStart program, as compared to those who did not participate in the high school ProStart program. Understanding if participation in the high school program could have affected student academic success in the college program would provide the college leadership with a stronger understanding of why some students were performing academically better than others. Analyzing the data of $n = 139$ students, all students who enrolled in the culinary arts or baking and pastry program in October 2012 or January 2013, I determined that there was a significant difference between the academic performance of those college students who participated in the high school program, as compared to those students who did not participate; AGPA for ProStart ($M = 3.06$, $SD = .088$) and non ProStart ($M = 2.48$, $SD = .990$) conditions; $t(139) = 4.605$, $p = 0.006$.

These results suggest that the students who participated in the ProStart program performed academically better in the college program, as measured by AGPA. Specifically, the students who participated in the ProStart program in high school performed academically better in the college culinary arts or baking and pastry program than the students who did not participate in the high school program. These findings were used in the creation of the recommended peer-to-peer mentoring program, leveraging the academic strength of the college former ProStart students with those new culinary students who did not participate in the high school ProStart program

Goal 2

Goal 2 was to determine if there was a significant difference in the time to completion, as measured by the number of months, between college culinary arts or baking and pastry students who participated in the high school ProStart program, as compared to those who did not participate in the ProStart program. Understanding if participation in the high school program could have affected student time to college completion would provide the college leadership with an understanding to a possible reason some students are completing faster than others. Analyzing the data $n = 119$ students, all students who enrolled into the culinary arts or baking and pastry program in October 2012 or January 20113, I determined that there was no significant difference between the time to completion between those college students who participated in the high school program, as compared to those college students who did not participate in the high school program; ProStart ($M = 6.92$, $SD = 1.03$) and non ProStart ($M = 6.85$, $SD = 1.07$) conditions; $t(39) = .184$, $p = 0.653$. These results suggest that the students who

participated in the ProStart program in high school did not graduate at a significantly faster pace than the students who did not participate in the ProStart program in high school.

Recommendations

The key recommendation is to establish a peer-to-peer mentoring program, leveraging 2nd year college culinary arts or baking and pastry students and former high school ProStart students, to mentor 1st year new college culinary arts or baking and pastry students who did not participate in the high school ProStart program. Based on the findings of the project study, creating a peer-to-peer mentoring program will improve the overall academic performance of the incoming culinary and baking and pastry students (Esplin, Pinnegar & Seabold, 2012; Sammaliston, Steiner & Sundstrom, 2013; Snowden & Hardy, 2012).

As outlined earlier, there are a number of benefits to creating a peer-to-peer mentoring program. These include benefits to the mentee as well as mentor. The mentee will gain access to an objective and supportive alternative perspective (Andrews and Akerson, 2012; & Collings and Watkins, 2014). This perspective is often not available from parents or professors. The mentee will benefit from increased academic achievement (Carbon, Leidenfrost, Schabmann, Schutz, & Strassnig, 2014). Finally, the mentee will develop confidence needed during challenging times. This confidence will help them navigate new and unfamiliar situations and will also assist when they struggle with new academic concepts or material (Armet, Kendricks, & Nedunuri, 2013).

In addition to benefits to the mentee, there are multiple benefits to the mentors participating in a peer-to-peer mentoring program. The mentor will gain leadership skills from supporting another student (Burton, Chester, Elgar,& Xeosm 2013). Like the mentees, the mentors will also benefit from improved academic performance (Daud & Shahrill, 2014). Finally, the mentors will gain self-satisfaction from helping a fellow classmate. This self-satisfaction will assist in developing the whole student and benefit the mentor when they enter the industry post college completion (Burton et. al, 2013).

Once the decision to create and implement a peer-to-peer mentoring program is made, a program leader needs to be appointed. The current Director of Student Life or the Director of Student Services would be excellent candidates to hold this important leadership position (Anonymous, 2016). This person will be responsible for creating a statement of purpose or mission, budget, timeline, shared goals, calendar of activities, and a process for measurement. This person should also be responsible for creating all program materials, which include the presentations to faculty, staff and to students participating in the program.

The program leader will need support from the senior college administration, as well as from the Dean of the School of Culinary Arts. This needed support comes in many forms including; appropriate allocation of resources, both people and financial. It should also include allocating classroom space for meetings, technology to support the presentation of the program and ongoing activities, cost of print materials, and overall budget to host activities and events throughout the year. The Director should propose a full year plan and budget and the college leadership ensure the program can be funded for

the first year. Having this approval and allocation of resources prior to launch will ensure the program is set-up to be successful. It is important to note that in order to support this newly recommended peer-to-peer mentoring program, it may require reallocation of funds from other areas within the college.

Once a leader is selected, the program designed, and financially supported, the Director will need support and an endorsement from the college leadership during the initial launch and kick off of the program to faculty, staff and students. The college president should directly message the importance of the peer-to-peer mentoring program during her speech at the annual back to school faculty meeting, and through a written communication to all college team members. Finally, the president should attend the new student orientation in October 2016, to communicate the value of the program and to symbolically show their excitement for new 1st year students participating in the mentoring opportunity (Burton, Elgar & Xenos, 2013).

Finally, the president and chief academic officer should direct the Office of Institutional Research to establish benchmarking and to complete both formative and summative studies. This will allow for a formal research component to be established prior to the launch of the program and also allow the Director to measure the success or failure of the stated program goals. The Director of Institutional Research should work closely with the program director to ensure the established goals are being measured and should report any areas of risk or opportunity throughout the first year of the programs implementation.

The study completed at this research concluded that the college culinary arts students who participated in the ProStart program in high school, performed significantly better in their academic coursework than those students who did not participate in the high school program. The research outlined within this position paper supports the opportunity to create a peer-to-peer mentoring program to improve the overall grade point average of the incoming culinary arts and baking and pastry students. Additionally, the literature review outlines additional benefits of peer-to-peer mentoring related to improved retention. Improving the academic achievement and retention of the culinary arts and baking and pastry students meets the goals of the college leadership and therefore the implementation of the recommended peer-to-peer mentoring program is strongly recommended for consideration.

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Appendix B: GPA Data Collection Chart

Student #	*ProStart* or Non ProStart	GPA
1	2	2
2	2	0.69
3	2	1.82
4	2	2.73
5	2	1.75
6	2	1.94
7	2	1.6
8	2	2.62
9	2	2.49
10	2	0
11	2	3.06
12	2	3.14
13	2	3.05
14	2	3.35
15	1	3.01
16	2	2.3
17	2	3.04
18	2	1.78
19	2	2.35
20	2	0
21	2	1.05
22	2	2.33
23	2	2.44
24	2	2.48
25	2	3.62
26	2	3.29
27	2	3.34
28	2	3.35
29	1	3.05
30	1	2.8
31	1	2.53
32	2	2.5
33	2	2.74
34	2	2.71

35	2	2.87
36	2	2.5
37	2	3.32
38	2	0
39	2	2.83
40	2	0
41	2	0.57
42	2	3.8
43	2	0.86
44	2	3.54
45	2	3.33
46	2	2.66
47	2	3.32
48	2	2.82
49	1	3.5
50	1	3.29
51	1	2.82
52	2	2.82
53	2	2.65
54	2	2.32
55	2	3.06
56	2	2
57	2	3.24
58	2	2.78
59	2	2.45
60	1	3.36
61	1	3.09
62	2	2.78
63	2	3.4
64	2	3.38
65	2	3.32
66	2	3.26
67	2	2.51
68	2	2.2
69	2	2.86
70	2	3.08
71	2	3.07
72	2	3.93
73	2	3.59

74	2	1.93
75	1	2.58
76	2	2.94
77	2	3.55
78	2	3.35
79	2	0
80	2	2.53
81	2	2.03
82	2	2.28
83	2	1.74
84	2	3.07
85	2	2.9
86	2	3.8
87	2	2.57
88	1	3.56
87	2	2.57
88	1	3.56
89	2	2.69
90	1	2.28
91	2	2.96
92	2	2.79
93	2	2.72
94	2	2.22
95	2	1.82
96	2	0
97	2	1.04
98	2	2.54
99	2	2.09
100	2	2.67
101	2	1.91
102	2	1.57
103	2	1.26
104	1	2.65
105	1	3.44
106	1	3.14
107	2	2.78
108	1	2.53
109	2	2.16
110	2	2.27

111	2	2.74
112	2	3.34
113	2	1.52
114	2	4
115	2	3
116	2	3.69
117	2	2.62
118	2	3.36
119	2	2.61
120	2	0
121	2	2.29
122	2	2.59
123	2	2.9
124	2	2.2
125	2	3.58
126	2	3.07
127	2	0
128	2	3.18
129	2	1.06
130	2	3.24
131	2	2.76
132	2	0
133	2	3.44
134	2	3.28
135	2	3.69
136	2	3.59
137	2	3.3
138	2	3.48
139	1	3.25

Appendix C: Time to Completion Data Collection Chart

Student #	ProStart or Non ProStart	Number of Quarters to Complete
1	2	6
2	1	6
3	1	7
4	1	7
5	1	5
6	2	6
7	2	8
8	2	7
9	2	8
10	2	6
11	2	5
12	2	6
13	2	7
14	2	7
15	1	6
16	1	7
17	1	9
18	2	6
19	2	6
20	2	7
21	2	7
22	2	8
23	1	7
24	1	8
25	2	7
26	1	7
27	2	9
28	2	7
29	2	8
30	2	8
31	2	7

32	1	7
33	2	7
34	2	6
35	2	7
36	2	5
37	2	9
38	2	5
39	1	8
40	1	6
41	2	7