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Tale of the Tape: A Study of Two-year College Student-Athletes

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Tale of the Tape: A Study of Two-year College Student-Athletes

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Abstract

Two-year athletic programs bring many unique elements to a college campus, many of which help to create a comprehensive student experience. Quantifying this experience is difficult as little data has been collected historically on two-year college athletes. The purpose of conducting this study was to create a profile of a rural two-year college student-athlete and to utilize the data to determine if participation in athletics had any effect on student success measures. This study will help college administrators build a better understanding of the two-year college student-athlete, aiding their decision-making regarding the prioritization of college athletics on their campuses. These data will then hopefully enable those administrators to develop proactive strategies to serve this population more effectively.

Data was collected from one rural two-year Midwestern college which offers college athletics. The study encompassed three years of student data that was presented in a descriptive statistic format using frequencies and percentages. Data were also analyzed using the Pearson Chi-Square Test of Independence to determine if a significant difference existed between variables. The data indicated the student-athlete at the case study institution was different from the general study body. Data also showed some differences in the student-athlete's retention compared to the non-athlete at the case study institution. Differences were also indicated when comparing student-athletes based upon demographic characteristics.

Findings for this study demonstrated that students attracted to participation in two-year athletic programs at rural colleges are different from their same institution non-athlete peers. The study also indicated participation in athletics could positively affect student-athlete success while at the institution. Administrators should replicate a similar study on their campuses with hopes of improving data for decision making.

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Dedication

I dedicate this to my wife and children as they made all of this work worthwhile. Watching Dad further his education will leave a lasting impression for both Isaiah and Gia. I also dedicate this study to all of my former players and my coaching peers. Hopefully, this type of research helps to support the very honorable existence of junior college athletics.

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Chapter I. Introduction

A. Context of Problem

In a small gym at a rural two-year college, the athletic director watches the women's basketball team play a game. Surrounded by only a few hundred fans, the administrator thinks of the many positive, and challenging aspects athletics brings to a two-year campus. The coach in the game may be using statistics to make decisions on how to utilize an athlete best and to give the athlete the greatest opportunity to succeed. Administrators are much like a coach in that they should be using data as part of a success strategy (Phelan, 2014). College administrators are tasked with utilizing relevant data to support institutional decision-making regarding college athletics (Williams et al., 2008). Over 40% of college enrollment in the United States occurs at the two-year level, representing approximately 9 million students (NCES, 2019b). More than 80,000 student-athletes are included in that number (US Department of Education, 2019). Two-year colleges are often focused on offering opportunities, so the option for students to participate in competitive athletic programs is very much part of that mission. For administrators, creating these opportunities may come at a high cost; therefore, producing a quality outcome should be a fundamental goal. Two-year colleges face low retention and low completion rates, declining enrollment, rising costs, and lower state appropriations (Bailey, 2015; Fluharty & Scaggs, 2007); consequently, college leadership is tasked with determining how athletic programs remain relevant in this challenging environment.

The open admission model at the two-year college level tends to hamper degree completion rates as many students arrive on campus with underdeveloped academic skills (Fluharty & Scaggs, 2007; Karp et al., 2010). Many two-year college students have factors that can complicate their successful completion of collegiate work. Compared to four-year college

students, two-year students are more likely to be first-generation, be eligible for financial aid, have a full-time job, and have children (Clotfelter et al., 2013; Townsend & Twombly, 2007). Goldrick-Rab (2010) reported more than half of two-year college students held a job while attending school. Even though two-year colleges appear to be positioned to adapt to the needs of students quickly, adjusting to the ever-complicated needs of a very diverse student profile has proven challenging (Martin et al., 2014). A most recent three-year graduation rate of 22% was reported by the National Center for Education Statistics for the 2016 cohort of two-year first-time, full-time freshmen (2019a). In comparison, first-time freshmen who enter four-year institutions graduate within six years at over a 60% rate. Understanding how to serve the specific two-year college clientele is essential to raising completion rates (Altstadt, 2012).

The battle to improve graduation rates coincides with a significant drop in state appropriations nationwide. State governments have prioritized other budget items over higher education, leading to a decrease in funding (Klein, 2015). This reduction can translate into lower or fewer quality services. This lowering of state aid exhibits that the value of higher education is currently being questioned by many within the political arena, and much of this criticism has been sparked over the high cost of today's college experience (Gutmann, 2014; Kimball, 2014). The education costs to the student will continue to be at the forefront; therefore, the operation of colleges may become much more businesslike (Archibald & Feldman, 2008). Colleges may find themselves expecting to produce a college graduate for less, forcing administrators to find better strategies to keep students continuously enrolled and shortening the time to degree. Keeping students in consistent full-time enrollment is key to increasing the likelihood of completing a degree (Pike & Graunke, 2015). Understanding factors that support student persistence should be a prime focus of two-year college administrators.

Another challenge for the two-year college has been a decline in enrollment since 2012 (Juszkiewicz, 2020; NCES, 2019a; Shapiro et al., 2016), and this decline coupled with the reduction in state funding (Jaquette & Curs, 2015; Klein, 2015) makes balancing budgets a significant problem for administrators. Grawe sounded the alarm bell of a troubling demographic shift that leads to a substantial college enrollment decline ending in 2026 (2018). This problem of declining enrollment and state funding may push colleges into viewing students more as a customer base, and finding strategies to find and keep those customers is vital.

Two-year colleges have offered intercollegiate athletic programs for over 80 years, as the National Junior College Athletic Association (NJCAA) reports (2020), giving evidence that these colleges see high value in offering athletics as an option on their campuses. Even with this long history of an athletic commitment, some administrators are unsure of the exact rationale for providing these programs (Williams et al., 2008). Many of these colleges use athletic programs to enhance their campuses in diversity, access, community relations, and student recruitment (Ashburn, 2007; Bush et al., 2009; Morris et al., 2010; Miller & Tuttle, 2006; Pflum et al., 2017). With a potentially tricky road ahead for many two-year college campuses, administrators will need to be very thoughtful and intentional about strategic decisions made regarding creating or sustaining athletic programs (Savage, 2006; Williams et al., 2008). Institutions offering athletic programs may need to evaluate if these programs could provide an answer to some of the unique challenges faced at the two-year college level. Creating a defined profile of the two-year college athlete and establishing comparisons between athletes and the general student population could provide essential data showing not only the value of two-year college athletics but institution-wide student success strategies.

B. Statement of Purpose

The purpose of conducting the study was to create a profile of a rural two-year college student-athlete, comparing demographic characteristics against the general study body. Student-athlete data were also analyzed to determine if participation in athletics significantly increased the fall-to-fall retention rate. Student-athlete gender, race/ethnicity, and type of financial aid received were analyzed to determine if these had a significant effect on the fall-to-fall retention rate of the student-athlete.

C. Research Questions

1. What was the profile of students who participated in athletics at a rural two-year as compared to the general student population?
2. Was there a significant difference in the fall-to-fall retention rate for students who participated in athletics at a rural two-year college as compared to the general student population?
3. Were there significant differences in the fall-to-fall retention rate for student-athletes at a rural two-year college based on gender and race?
4. Was there a correlation between the type of financial aid awarded to student-athletes at a rural two-year college and persistence?

D. Definitions of Terms

Athletically-related student aid: Athletically-related student aid is defined as financial aid that the institution provided due to the student's participation in athletics.

Cohort: A group of individuals who have a characteristic or characteristics in common.

Federal Financial Aid: Federal financial aid is defined as financial aid provided by the United States Federal Government to the student who applies by completing the Free Application for Federal Financial Aid.

Financial Aid: Financial aid is defined as any funds utilized by the student to cover costs higher education costs.

First-time, full-time freshman: A student who enters college enrollment as a full-time student and has not previously attended a college under full-time enrollment status.

Persistence: Persistence is the student process in remaining continuously enrolled from one academic term to the next academic term. For this study, student persistence is applied to a student enrolled in 12 or more hours.

Retention: For this study, retention is defined as the institution's process of keeping a student continuously enrolled in 12 or more credit hours from the fall academic term to the following fall academic term.

Rural Two Year College: A rural two-year college is defined as an institution serving students outside of a major metropolitan area that offers programs of at least two years but not greater than four years. The use of the terms two-year college, community college, and junior college will be used interchangeably.

Student Involvement: The physical and psychological energy that students invest in the college experience (Astin, 1984).

Student Success: For this study, student success is defined as accomplishing an academic goal that may be graduation, completing an academic program, or transferring to a four-year institution.

E. Assumptions

The following will be assumptions accepted by the study:

1. The data retrieved from Banner, the student data management system, were reliable and accurate.
2. The student provided accurate demographic data when entering the data into the college application.
3. The data collected from the years 2016-2020 is similar to previous years at the same institution.
4. A rural two-year college is representative of other rural colleges in the Midwestern United States.

F. Limitations

Limitations of the study will include:

1. Demographic data for the students were collected through the application process, which relies on data self-reported by the student.
2. Limited research existed on two-year college athletes.
3. Reliable data prior to 2016 were unavailable due to the Banner data system at the institution being implemented in the fall academic term of 2016.
4. Retention rates were based on first-time, full-time freshmen students to stay consistent with the typical measurements by the US Department of Education.
5. Longitudinal data were not collected on student-athletes to determine retention when a student transfers.

G. Delimitations

Delimitations will include:

1. The sample of athletes only included those receiving a scholarship.
2. The study only included data from athletes representing one college.
3. The study will only focus on the two-year college level.
4. Profile data was limited to age, race/ethnicity, gender, state residency, and financial aid type.

H. Significance of the Study

Today's rural two-year colleges have a unique position within higher education, as many institutions are fighting for enrollment (Grawe, 2018) and funding (Jaquette & Curs, 2015; Klein, 2015). Some of these colleges may be offering intercollegiate athletic programs, and the decisions regarding supporting the student-athlete experience may be of great importance to the health of the student and the institution. The rationale of offering two-year college athletics may not be abundantly clear for some administrators (Williams et al., 2008); therefore, searching for concrete reasons for the existence of junior college sports at these institutions should be a central focus. These athletic programs do come with associated costs; subsequently, junior college administrators may find themselves in the position of justifying athletic programs during lean financial times. Having a robust set of data, helping to clarify the value these programs bring to campus, is essential.

Even with the challenges presented with supporting athletic programs, the student-athletes who arrive on campus may bring with them solutions to some of the difficulties faced by these rural colleges. The current study attempted to define some common characteristics of the two-year college student-athlete and build a student profile. The data collected was focused on

student-athlete demographics and persistence rates. These data may hold the key in assisting small college administrators in determining strategies to aid student success, hopefully improving the opportunity to keep students continuously enrolled and pursuing a degree. The study sought to assist in justifying expensive athletic programs that may come under attack as an inappropriate outlay. With the lack of research in two-year college athletics (Kissinger et al., 2011; Mendoza et al., 2012), administrators currently have little data to rely on when making important strategic planning decisions (Williams et al., 2008).

On a national level, the NJCAA is consistently looking for measurements validating the importance of the association's mission which focuses on supporting the two-year college student (NJCAA, 2020). The NJCAA does not have a quality dataset associated with student-athlete demographics, retention, or graduation. The study sought to provide valuable information for administrators as more schools evaluate starting junior college athletics and becoming a member of the NJCAA.

I. Theoretical Framework of the Study

With such a diverse student clientele, determining why a student persists becomes difficult for administrators at the two-year college level (Mertes & Hoover, 2014). Finding the one magic potion to solve the student success issue at the community college level has been elusive. The student-athlete group presents an opportunity to be used as a cohort of heterogeneous two-year students. Athletic participation can then be used as a variable associated with student involvement which presents an interesting study. This involvement and engagement in an athletic culture may bring some inherent advantages that might be useful for researchers and college administrators to analyze. Students who enter college with high motivation levels and display an advanced propensity to be engaged in academic activities tend to see better

student success (Gayles & Hu, 2009; Simons et al., 1999). The study will be tied together by utilizing Astin's (1984) Student Involvement Theory which considers the student's learning experience holistically and beyond just the classroom. Astin described student involvement as inserting energy into the academic experience, which leads to a better opportunity for success.

Astin's Student Involvement Theory evaluates the level of involvement a student engages in while enrolled in college. Astin reported the higher level of student involvement demonstrates motivation that would then carry over to a likelihood of student success. Astin (1984) further described student involvement as "the quantity and quality of the physical and psychological energy that students invest in the college experience" (p. 528). Motivation manifests itself in the student's campus involvement; therefore, the involved student is already demonstrating the willingness to have experiences that may lead to learning. The student-athlete cohort was chosen due to each student's likelihood of experiencing a high involvement level participating in athletic activities. One of Astin's work criticisms is that the focus was solely on full-time students attending four-year institutions (Pascarella & Terenzini, 2005). However, Astin's work is still considered some of the most significant contributions to retention research today (McCormick et al., 2013). Astin's central focus on four-year college students highlights the importance of this current study on two-year college athletes as this should add to a lacking area of research.

Astin (1984) broke down student involvement into three essential elements: input, environment, and outcome. The input addresses the student's demographics and background, which is really what the student brings to the college equation. The environment is the how and where the student experiences college, and the outcome comprises a list of attributes student leaves college with, including beliefs, skills, attitude, character, and values. Astin's Student Involvement Theory also has several assumptions, which included: Student involvement will

refer to the student's energy input, student involvement occurs at different times and different levels over a continuum, student involvement can be measured both quantitatively and qualitatively, student learning and growth are directly related to the quantity and quality of student involvement invested and lastly educational policy's effectiveness can be measured concerning the amount of student involvement required.

When a two-year college student-athlete arrives on campus, the student is inserted into a role that requires high engagement and is identifiable as part of an athletic team. This athletic participation usually comes with a scripted schedule, a team setting, and a dedicated set of mentors. The structure can lead to a defined role within a group creating a sense of belonging, which, as reported by Tinto (2012), is an essential factor in persistence. Astin (1977) already identified the positive effect that athletic participation had on student success. The nature of athletic participation leads to Astin's involvement theory as a framework due to the high level of commitment expected.

Chapter II. Review of Literature

A. Introduction

The two-year level of higher education in the United States represents a unique subset of institutions with a very diverse student population, a purposeful mission, and a significant set of issues (Cohen et al., 2014; Goldrick-Rab, 2010). Using previous research related to the two-year sector will help build awareness and hopefully lead to creating strategies directed towards these current challenges. Numerous two-year institutions continue to offer college athletics as part of their extra-curricular model. Discovering a more in-depth understanding of the athletic programs and the student-athletes involved could be significant. The following review of literature constructed a discussion centered on the two-year college level. These specific areas were covered: The two-year college student, current challenges for rural two-year colleges, two-year college athletics, college student persistence and retention, two-year college athletics, gender and race in athletics, student financial aid, and the student involvement theory.

The purpose of conducting the study was to create a profile of a rural two-year college student-athlete, comparing demographic characteristics against the general study body. Student-athlete data were also analyzed to determine if participation in athletics significantly increased the fall-to-fall retention rate. Student-athlete gender, race/ethnicity, and type of financial aid received were analyzed to determine if these had a significant effect on the fall-to-fall retention rate of the student-athlete.

Literature for the review was obtained from the University of Arkansas Libraries database system, which included using the EBSCOhost, ERIC, ProQuest, JSTOR, and Google Scholar. The majority of the research used full-text, peer-reviewed articles. Several books were accessed through the University of Arkansas interlibrary loan (ILLiad) system.

B. The Two-year College Student

Two-year colleges in the United States serve millions of students annually. In fact, of the 26 million students enrolled at post-secondary institutions in 2018, over 8 million students were enrolled at two-year colleges (NCES, 2019b). These institutions serve a diverse population of students, and capturing a common profile of these students is difficult due to the wide variety of institutions and the communities where these colleges reside (Burns, 2010).

Demographics

Some common student demographics at two-year institutions include higher numbers of minority students, students who work, adult students, and a higher percentage of part-time students (Burns, 2010; Cohen et al., 2014). The American Association of Community Colleges (AACC) reported that the average age of a community college student in the United States is 28 years of age, but 54% of the student population is under 22 (2020). The AACC also reported that 64% of the students attending a two-year college are part-time students and over 33% receive a Pell grant. The working-class student tends to gravitate to the community college level (Handel & Williams, 2012). This fact may tie in with socioeconomic reasons or possibly the lack of educational family experience. Hardy and Katsinas (2007) reported that even though 59% of two-year colleges would be considered in rural areas, 66% of the enrollment at two-year colleges occurs at metropolitan campuses. The metro campus student has different characteristics and unique barriers not present in the rural population (Mykerezi et al., 2009); however, financial assistance is one common characteristic between rural and urban students (Hardy & Katsinas, 2008). Mykerezi et al. described the student population in rural areas as “Youth in rural areas reside in counties with lower shares of college graduates, higher unemployment rates, and lower median per capita incomes” (2009). A limited amount of research exists on the college

attendance and post-secondary attainment of rural youth (Byun et al., 2017). Rural community colleges are so diverse across the United States, defining a specific demographic can be difficult (Scott et al., 2016). Byun et al. (2017) conducted a study that found that over half of rural students are enrolled at community colleges at some point during their college careers. Over a fourth of the students began college at the two-year level. Mykerezi et al. (2009) studied the impact of distance on two-year college attendance. They discovered that the further rural students lived from the two-year regional institution, the less likely they are to attend and the more likely they will attend a four-year school. Mykerezi et al. also found rural youth were more likely than urban youth to choose a two-year in close proximity over a four-year school. The facts seem to indicate that rural students desire an institution that is close in proximity and will choose that institution over the four-year competitor if the school is convenient; however, a small study by Scott et al. (2016) did not find that distance to a rural college had a significant effect on attendance.

Many students enter community colleges as first-generation students. Community colleges enroll over half of the first-generation students within higher education (Demetriou & Mann, 2012). Morest (2013) stated that providing college access to first-generation students may be one of the most significant roles of the two-year college. Barbatis (2010) observed the first-generation student as uncertain and voiced the importance of having the encouragement, experience, and wisdom of a mentor. Tinto (1993) emphasized the significance precollegiate characteristics have on persistence, and for many first-generation students, those characteristics are lacking.

Conversely, in a small study by Shumaker and Wood (2016), the evidence discovered first-generation students used college services at a similar rate as non-first-generation students

even though past studies have shown the opposite. With a lack of social capital and support from experienced college completers, first-generation college students may become frustrated when attempting to find support for the common barriers college may present (Atherton, 2014; Morest, 2013). With the challenge of preparing students who have little to no experience with higher education, community colleges have a monumental task in two areas. The first is preparing students for college, and the second is helping them navigate and complete the curriculum (Morest, 2013).

Success Barriers

The open-access nature of community colleges attracts students who otherwise may not be able to enter higher education, and one by-product of this is the higher number of students who do not possess the academic skill set needed for college work (Mykerezi et al., 2009; Townsend & Twombly, 2007; Townsend & Wilson, 2006). Supporting unprepared students has become a glaring issue at the two-year college level, which sees a higher percentage of students needing remedial coursework. Recent studies have this number as high as 70% (Bailey & Cho, 2010; Chen, 2016).

Compounding the lack of academic skills is the likelihood that the community college student will have added responsibilities outside of school such as employment and taking care of the family (Burns, 2010; Cohen et al., 2014; Deil-Amen, 2011; Goldrick-Rab, 2010; Townsend & Twombly, 2007). Social, educational, and governmental barriers have led to students choosing the two-year college level (Goldrick-Rab, 2010). Goldrick-Rab elaborated as many of these students are entering colleges without a support system in place, into an educational system unprepared to deliver the needed resources, and without enough financial backing to be successful. Waters-Bailey et al. (2019) identified a long list of non-academic barriers that rural

two-year college students face, including food insecurity, housing insecurity, childcare issues, mental and health issues, and transportation complications. Any one of these could upend a student's chance of college success.

Reason to Attend

Two-year students enter college with many reasons for enrolling, including updating skills, job training, personal enrichment, and transfer to 4-year institutions (Martin et al., 2014). Community colleges have a rich history of career, occupational, and technical education where students leave after one or two years and find employment (Morest, 2013; Townsend, & Wilson, 2006). This ready-to-work component continues to be a significant part of the two-year mission. It brings some unique offerings to higher education and the communities these colleges serve (Morest, 2013). A lack of research exists determining a trend in the student's area of study within the two-year college sector as many students enter without a clear understanding of what field they want to pursue (Pascarella et al., 2003). Bailey (2015) described the community college experience of choosing courses and areas of study as closer to a cafeteria-style selection process than a targeted experience, which has probably led to a deficiency of clarity and reliable data in which majors students are choosing. Wang (2016) found that science, technology, engineering, and math (STEM) are primarily void of students at the community college level, especially with female and minority representation.

Transfer continues to be a big reason why students decide to attend at the community college level as Horn and Skomsvold (2011) reported that 81% intended to transfer to a four-year school to complete a bachelor degree eventually. Even with data indicating many students plan to transfer, the rate of 33% transfer rate is typically accepted (Townsend & Wilson, 2006). These data related to tracking transfer students have been challenging to track consistently. The

community college level seems to be s stepping-on point for many minorities and underrepresented students. The sector welcomes 44% of African-Americans, over 50% of Latinxs, and most non-traditional students in the US (Ma & Baum, 2016). For these groups of students, some are entering school hoping that transfer to a four-year college is possible. In a study by Pascarella et al. (2003), findings indicated students who entered community colleges with plans to achieve a degree at a four-year school eventually saw more consistency in maintaining their goal versus students entering without firm plans.

Further studies reinforced this fact by reporting that the longer students remain at a community college, the more likely their aspirations of a degree hold steady (Nielsen, 2015; Wang, 2013). Handel and Williams (2012) reported that even though community college students voice the desire to transfer, few matriculate, and data shows no improvement in that number. Strategies for improving transfer rates included making the process less complex, improving the corporation between the two and four-year levels, improving the transfer of credits, and enhancing financial aid for those transfer students (Handel & Williams, 2012).

Diversity

Within higher education, the two-year college level is much more diverse than the four-year sector, which translates into the majority of students attending community colleges are minority students (NCES, 2019a). With the high number of minority students, many two-year institutions have more first-generation college students (Malcom, 2013). Morest (2013) recommended embracing the diversity of the community college classroom since this element is an asset to learning. This type of educational environment allows students to be exposed to a multitude of issues and perspectives. Diversity is also demonstrated by the socioeconomic status of the student population. The community college level has a wide range of income levels within

the student population as many come to school at a very low socioeconomic status. At the same time, other students attend with no economic issues (Shannon & Smith, 2006). The low cost of a community college education may attract many from the low-income group. Still, as reported earlier, only 33% of students receive a Pell Grant making the student economic, demographic picture somewhat puzzling. Shannon and Smith (2006) wrote the real challenge is for community colleges to serve all of these students effectively.

And finally, the age of the two-year college student is significantly different from the student at the four-year level. Over 40% of the community college students are over the age of 20 compared to 14% at the four-year level (Handel & Williams, 2012). Even with these numbers, Handel and Williams reported that 72% of first-time college students at the community college are between the ages of 18-23. So a community college campus attracts both young and old, presenting a much different experience from the four-year college level.

C. Current Challenges for Rural Two-Year Colleges

The rural two-year college can be defined as a college serving students outside of a metropolitan area. Mykerezi et al. stated, "Rural areas are generally characterized by relatively low-density settlements, lower incomes, and arguably generally low incentives to pursue college" (2009, p. 412).

Funding

Rural community colleges across the United States offer access to educational opportunities for millions of students and serve as catalysts for community and economic development (Fluharty & Scaggs, 2007). But these colleges have seen substantial declines in government funding, which risks the quality of services (Joch, 2011; Phelan, 2014). This decline significantly affects institutions as the government has historically played a significant part in the

funding formula for two-year colleges. Much of the funding comes through state appropriations and federal dollars funneled through student financial aid (Tollefson, 2009). Two-year colleges face expectations to deliver better outcomes in student access, retention, and completion rates on a much lower funding stream (Phelan, 2014). At the same time of upholding these higher-level hopes, colleges must provide these outcomes with less faculty and staff (Joch, 2011). Joch also reported that many community colleges are not refilling positions and taking a close look at replacing retirees with less experienced, less costly employees. State appropriations have declined significantly, leading to a higher reliance on student tuition to make a budget (Joch, 2011; Kelderman, 2011), which stresses the vulnerable community college student population. Government funding has declined, shifting more responsibility upon the student to cover costs, while federal financial aid has not kept up with the need (Phelan, 2014). Kolbe and Baker (2019) pointed to the increased reliance on tuition, which harms the services two-year colleges can offer to many in-need populations. Some states have turned to other funding models, such as performance-based funding, which have not proven a high level of success (McKinney & Hagedorn, 2017; Thornton & Friedel, 2016; Tandberg et al., 2014). Research has indicated some merit to using formulas as a basis for funding (Dougherty et al., 2012; Mullin & Honeyman, 2007) which places pressure onto the institution to have good student success outcomes. Finding solutions to the lack of critical funding has become one of the most significant concerns facing two-year college administrators (Phelan, 2014). With such a large percentage of community colleges in rural areas (Hardy & Katsinas, 2007), these remote institutions are crucial in the higher education chain.

Fundraising

With the recent substantial decline in funding at the two-year college level, finding external funding sources is vital to continue to offer essential services to students. Grover (2009) concurred with this claim giving the perspective that clearly defined the need and articulated the steps needed to achieve a fundraising campaign. Many two-year colleges are developing strategies to request funds from private foundations (Errett, 2004). Errett studied the giving practices to schools in Texas and found that fundraising was moving away from alumni because of the lack of interest in giving to the community college level. Private foundations were found to be more likely to support the access-centered mission of the two-year college level. Pastorella (2003) claimed the community college level could leverage alumni for financial gifts. This population may have a closer tie to the institution due to proximately and allegiance to an institution that may have provided a significant life impact. Pastorellea continued by claiming alumni can bring much power as a resource to community college fundraising, but this must be a college-wide effort and not solely dependent upon the actions of the alumni foundation professionals. Carter (2011) pointed to this same institution-wide strategy, which stresses that fundraising is not a singular input-based model. Carter elaborated on developing a multipronged approach to finding funding at the community college level.

Halligan (2008) stated how critical it is to develop a more sophisticated fundraising practice at the community college level. With limited staff and resources, finding supportive software and utilizing a database approach to refine communication and tracking efforts were cited as imperative to improve the annual donor list. The competition for fundraised dollars is ever increasing as many institutions ask for funding from external sources (Jackson & Glass Jr., 2000).

In a meta-analysis study, Martinez et al. (2010) discovered a small but significant influence of college athletics on fundraising. The study focused on the NCAA Division I level and found the most significant effect occurred with alumni donors and in the sport of football. The recommendation was made to use this finding to target alumni when creating athletic fundraising campaigns. Athletics at the two-year college level may offer the opportunity to use the same tactic in leveraging alumni to raise money. Lawrence et al. (2009) examined many fundraising methods made possible through using community college athletics as a conduit to raised money. They found local support was the greatest contributor, with some alumni sponsoring as well. In another study, Noonan-Terry & Sanchez (2009) agreed citing athletics, even at the community college level, as a reason for donors to give. The study identified donations from alumni and private sector businesses as the foremost source. The unpredictable nature of the community college level seems to require the expanded need to raise money.

Enrollment

Declining enrollment is challenging all sectors of higher education, and the two-year college category is not an exception (Grawe, 2018). The two-year college enrollment trend has seen a continual decline since 2010 (Juszkiewicz, 2020), which dramatically impacts colleges' revenues. While state funding is declining, the less tuition revenue from declining enrollment delivers an even more severe blow to the effectiveness of services provided by community colleges (Burns, 2010). The future does not look bright for enrollment growth, as the latest statistics reveal a continued decline through 2026 (Grawe, 2018). Enrollment has many layers as the new student enrollment has a recruiting element while the continuing student falls under the student retention umbrella. As Grawe pointed out, with lower numbers of high school graduates entering college over the foreseeable future, retention will be of even more importance.

Competition

As the declining enrollment trend continues, the competition for students will become fierce, and this finite student resource increases in value each year. Community colleges may suffer from an image problem, with some parents feeling pressure to send their kids off to a four-year school. Lendy confirmed this in a 2009 study where many parents voiced uncertainty about the two-year college level. A negative image is not suitable for business in the two-year college market, as Blumenstyk et al. (2008) reported the importance of dealing with growing competition from the for-profit institutions. With the ability to adapt programs and set up online offerings, these for-profit schools can cut deep into the student pool for many community colleges.

Services

Providing the needed academic and personal services to the two-year student population is becoming more difficult as the number of full-time employees at institutions has been impacted by reduced budgets (Kelchen, 2019). The employment issue has been especially prevalent at rural two-year colleges where finding qualified faculty has become a real challenge (Eddy, 2007; Pennington et al., 2006; Phelan, 2014). Other factors compound the problem as rural faculty jobs may pay less and are sometimes less attractive due to the distance from urban centers (Murray, 2007). Rural and urban community colleges in California have seen a reduction in faculty due to budget pressures (Chen, 2014). Maintaining qualified staff is critical as student success is directly linked to institutional support and the quality of instruction (Slanger et al., 2015); therefore, the effect of the funding decline could have a drastic impact on the two-year student population.

Underprepared Students

Another impactful challenge for the two-year college is effectively serving students who enter with extremely low academic preparedness due to the open admissions nature of the institution (Burns, 2010). Many two-year students enter college with below college-level academic skills (Bahr, 2012; Karp et al., 2010; Yu, 2017). These students may have to progress through developmental education, which research has shown to be a significant barrier to student persistence (Bahr, 2012). Students beginning college within the developmental education curriculum are unlikely to complete the cycle and ever reach a degree (Bailey, 2009). Students who reported taking developmental education courses were frustrated due to the lack of college credit accrued, and the experience was similar to what the student had in high school (Barbatis, 2010). This issue is pervasive as more than half of community college students may be placed into developmental education (Bailey et al., 2010; Bailey, 2009).

The two-year college level tends to attract many first-generation college students (Ma & Baum, 2016). According to Contreras (2012), a higher percentage of first-generation college students are required to take remedial coursework instead of their peers with college-educated parents. Contreras continued by stating that minority students tend to fall into the same situation, requiring more non-college credit courses. Creating strategies to eliminate some developmental barriers is a common approach. One approach is to bypass developmental courses through innovative placement strategies; however, some states have seen mixed results with changing policies on placement (Woods et al., 2019; Waschull, 2018). Many academic issues continue as many researchers and practitioners have found that dropout rates remain higher with the two-year student (Mitchell & Hughes, 2014).

D. College Student Persistence and Retention

The issue of college retention has been a focus of many studies due to the significant impact departing students have on student success outcomes and the enterprise of higher education (Bailey et al., 2005; Fike & Fike, 2008). Retention can be defined as the persistence of students progressing toward a college degree. The National Center for Education Statistics (NCES) defines retention rates as a measure of the percentage of first-time undergraduate students who return to the same institution the following fall (2019a). The standard measure for comparison purposes is to use the student's continuous enrollment from fall term to fall term as the established criteria for measuring first-time freshman retention.

The four-year college retention rate from the 2018 cohort was 81% compared to 61% at the two-year level (NCES, 2019a). If someone views this from a business perspective, the college loses almost 40% of newly acquired customers in one year. In fact, from the years 2004 to 2009, state, local, and federal governments spent over $4 billion on first-time, full-time students at the community college level who dropped out after one year (Schneider & Yin, 2011). From a strictly financial standpoint, the investment into the two-year colleges does not seem to be paying off at a high level.

Measuring Student Success

Retention rates do not tell the entire story of student success. Students may have various goals when entering an institution, so measuring retention based only on a specific group, such as first-time freshmen, could be short-sighted (Goldrick-Rab, 2010). Community colleges have extreme difficulty determining what defines student success due to the heterogeneous student population (Clotfelter, 2013; Hawley & Harris, 2005). Each college may have its quirks and student populations; therefore, these institutional characteristics should be evaluated as retention

strategies are begin developed and implemented (Bailey, Calcagno et al., 2005). Retention should be measured based on a local level and not associated with national data (Burns, 2010). Burns continued by stating that having more customized criteria for retention rates may give administrators more clarity in developing a solid baseline of student success. More emphasis has recently been placed on determining different measuring outcomes beyond using the traditional freshmen cohorts (Wickersham, 2020).

The fairness of a common national standard is in question (Goldrick-Rab, 2010); however, even if a college begins to use different criteria for student success, retention of students should still be the institutional objective (Burns, 2010). Student persistence should be a combination of student and institutional responsibility to ensure positive success outcomes (Karp et al., 2010; Kuh et al., 2008).

Many of the retention studies have been based on predictor variables (Mertes & Hoover, 2014), hopefully giving retention program designers the ability to determine the at-risk population. Resulting retention strategies take many forms, such as orientation courses, remedial support, comprehensive tutoring support, mentoring programs, and learning communities (Barbatis, 2010; Talbert, 2012; Valentine et al., 2011). Evaluating the success of these strategies is complicated, and there seems to be a gap in the research concentrated on assessing the variety of methods (Valentine et al., 2011). Some researchers postulated the only plan to significantly increase retention at the two-year level is to shift the focus from the post-secondary environment and put more effort into college preparation within the high schools, but this may require intervention from the state legislators who help control public education initiatives (DeNicco, 2015). Administrators at the two-year college level have voiced the need for more funds. These funds are essential to implement innovative and higher costs programs positively impacting

retention (Talbert, 2012). Current funding levels have left many colleges with little room for additional expenditures (Kelderman, 2011).

Many students begin college at the two-year, but most never attain a degree (Goldrick-Rab, 2010). However, Wild and Ebbers (2002) encouraged evaluating students' goals when determining student success, stating that student persistence or completion may not equal success with such a diverse student population. Students who transfer, enter college for enrichment and drop in and out of college all may achieve their goal without being defined as a student who persists. Kurlaender et al. (2016) agreed as the authors highlighted the unique nature of the community college student and the need to redefine success for these students. Completion outcomes should not always be used as a definition for success, and even though student persistence may lead to those outcomes quicker, persistence should not become synonymous with success (Bailey et al., 2005). Attewell et al. (2011) reported on completion data, demonstrating 68% of college freshmen beginning at two-year colleges fail to complete a degree within six years. Freshmen who start at four-year institutions fail to complete a degree 39% of the time. This specific data illustrates that success at the two-year level could be measured very differently than success at the four-year level.

E. Two-year College Athletics

Very little research has been dedicated to two-year college athletics. Much more focus has been centered on the four-year level and, more specifically, the large NCAA Division I institutions (Pflum et al., 2017; Savage, 2006). The NJCAA reported approximately 500 member institutions, which does not include most schools in California, Idaho, Washington, and Oregon (2020). Two-year college athletics has a large footprint within higher education, but much can still be learned about this level and why these schools host sports. Two-year institutions may

have a variety of reasons for offering athletics, such as community engagement (Miller & Tuttle, 2006;2007), school branding (Morris et al., 2010), increasing diversity on campus (Pflum et al., 2017), and growing enrollment (Ashburn, 2007; Bush et al., 2009; Morris et al., 2010; Pflum et al., 2017; Horton, 2009). Some institutions may struggle in identifying precisely the rationale of offering these types of programs (Williams et al., 2008) as the original purpose may have changed or even disappeared over time. For institutions that currently don't offer athletics or could be intrigued with adding more sports, Bush et al. (2009) recommended proceeding with caution as the financial model must be appropriate. Adding programs may damage the academic enterprise. Community college athletic programs are rarely viewed as revenue-generating (Horton, 2009) even though the enrollment produced by these programs is a benefit to the school. With the uncertainty, much hesitation surrounds whether to initiate or continue sports programs at the two-year level (Savage, 2006).

Athletics is offered in rural and urban settings at the two-year college level, which can create very distinctly different student-athlete experiences. Based on numbers reported through the 2018 Equity in Athletics Data Analysis (EADA) report by The US Department of Education, the most prevalent teams fielded by two-year colleges were men's and women's basketball, with over 80% of the colleges offering the sport. Baseball was offered by almost 80% of the institutions, while volleyball and softball are played on approximately 70% of the campuses. Those two-year institutions offering athletics seem to be making a significant financial commitment as the average expense committed is over $800,000 per institution. With state appropriations not directly funding athletic programs, institutions typically operate athletic departments through student fees, fundraising, and other auxiliary revenues (Lawrence et al., 2009). Not all athletic programs offer scholarships to students; however, the average

disbursement per student, as reported on the EADA, is $1700 (2018). Scholarship offerings may include tuition, fees, meals, and housing (Moeck et al., 2007).

The infrastructure of many two-year college athletic departments is not similar to the four-year college level as facilities, travel, equipment, and salaries are usually operated on a much smaller scale (Lawrence et al., 2009). Administration of this athletic organization can be somewhat difficult due to some inherent challenges. Very little research exists on the community college athletic director position. Still, many schools rely on a coach to fill this role (Baghurst et al., 2014) which can hinder the effectiveness provided by the position (Lawrence et al., 2009). Role assignments within the two-year athletic department personnel are a unique characteristic. Many coaches have dual appointments, with the coaching responsibly being paired with another staff or faculty role on campus (Diede, 2005; Lawrence et al., 2009). This fact was reinforced by data retrieved from the EADA report demonstrating many coaches have less than full-time pay for coaching duties (2020).

Value of Two-Year College Athletics

As two-year colleges grapple with higher costs to provide educational services, administrators must genuinely understand and defend the value of college athletics at their institutions (Williams et al., 2008). Establishing the return on investment of athletics is very difficult to determine at many community colleges (Horton, 2009). Many college administrators mention the inadequate funding because athletics should not be a part of a community college campus (Savage, 2006), but still, many programs persist. Forming campus athletic programs can serve as an enrollment growth mechanism by establishing side-by-side programs like cheerleading, dance, band, and athletic training (Noonan-Terry & Sanchez, 2009). If done with

the college's mission in mind, athletes can be executed without sacrificing the integrity of the overall budget (Ashburn, 2007).

In an environment where the number of high school graduates continues to decline (Grawe, 2018), rural two-year colleges are looking for competitive advantages to attract students. Campus leadership could look to athletic programs to build a campus atmosphere, giving a more four-year college experience (Ashburn, 2007; Byrd & Williams, 2007; Morris et al., 2010; Finkel, 2018). The addition of support programs can bring a valued cross-section of students to campus, developing the full college experience (Noonan-Terry & Sanchez, 2009).

Why Student-Athletes Attend a Two-Year College

Providing access and opportunity is a central mission for most two-year colleges (Horton, 2015) which compliments the goals of athletes who don't have the opportunity to compete in athletics at the four-year level (Finkel, 2018). Some athletes may not have the financial capability to fund college, and with the help of an athletic scholarship, enrolling may become a reality (Castañeda et al. 2008). Athletic opportunities may be a catalyst to attracting African-American males into college (Beamon, 2010; Horton, 2015) who are more likely to attend college at the two-year level and the lowest possible racial group college overall (Wood & Williams, 2013). Wood and Williams reported the lack of research completed on the black athlete at the community college level. Currently, the NJCAA does not collect comprehensive demographic information, limiting the opportunity for analysis of the two-year student-athlete population. In general, athletic participation may provide the motivation required to motivate the student who otherwise would not attend college (Boulard, 2008).

Athletes may not qualify academically to get into NCAA Division I school (NCAA, 2020b); therefore, athletes use the junior college level as a stepping stone while honing their

athletic and academic skills (Kissinger & Miller, 2007; Pflum et al., 2017). Entering a community college may create negative feelings generated from not qualifying for a higher competitive level (Noonan-Terry & Sanchez, 2009). For these athletes, receiving the appropriate amount of support to realize their goal of playing NCAA Division I sport is extremely important. Some of these athletes may dream of playing professional sports after college; consequently, understanding these student goals can help colleges better serve this student population (Kissinger & Miller, 2007). Determining how to serve students, a school needs a detailed understanding of each subpopulation (Kuh et al., 2008).

Sponsoring athletic programs at the two-year level may also be a method to keep students within the college's service area, which is why some colleges offer sports relevant to the local area (Ashburn, 2007; Bush et al., 2009; Kissinger & Miller, 2007). Some students may carry the athletic identity from high school into college (Kissinger et al., 2011), even though their talent may not be of college caliber. The four-year athletic opportunity may not be realistic for this population, but attending college may have become a reality from the opportunity to participate in a two-year sport. Through a positive advising experience, school staff can use counseling sessions to ascertain more about the student's identity, especially related to their athletic motivation and goals (Kissinger & Miller, 2007; Martin & James, 2012).

F. Gender and Race in Athletics

Females in Athletics

The US Department of Education reported through the Equity in Athletics Data Analysis (EADA, 2020) 582,980 student-athletes participated in college athletics. Women represented approximately 40% of this number. At the two-year college level, the percentage was slightly less at 38%. As reported by IPEDS for the 2018 year, women made up 57% of the total post-

secondary enrollment (NCES, 2019b). One reason for the gender disparity in collegiate sports may be that males are more likely to identify as athletes in college.

In contrast, females identify more readily as a student (Sturm et al., 2011). The National Federation of High School Sports (2020) reported females to make up 42% of the total participation in high school sports during the 2018-19 school year. These data demonstrate that females are not as active in sport as males. Females do not seem to embrace playing sports as a cultural ideal compared to their male counterpoints. This differing philosophy is seemingly explained by lower female numbers participating (Royce et al., 2003; Videon, 2002). Culturally, for some females, athletics is not viewed as a desirable activity due to a perception that sport is too masculine (Senne, 2016). Increasing female participation in sport may require additional training for youth and secondary coaches (Sherman, 2002). As one of the lower levels of college athletics, two-year colleges would benefit if a larger share of females participated during the secondary years, simply enlarging the pool of potential athletes.

Title IX legislation was ushered into existence in 1972, forcing colleges to equalize the opportunities for females in sport (Senne, 2016). In a study by Terry and Ramirez (2005), data demonstrated that Title IX had harmed the profitability of college athletics, requiring schools to field more female sports where scholarships are necessary for participation. Since Title IX was implemented, the number of women's athletes has increased significantly, while the number of men's has not seen a dramatic change (Farmer & Pecorino, 2012). This fact demonstrated many male athletes are participating without scholarships.

The gender of students has demonstrated differences in some key categories beginning with some academic outcomes as women athletes have traditionally posted better grade point averages (GPA) during their first year in school (Johnson et al., 2010; Kane et al., 2008). What

seems to indicate a higher commitment to academics by female athletes seems to translate to a higher graduation rate. The NCAA reported a consistent 10% higher graduation rate for females over males (2020a). At the two-year level, graduation rates reported from the 2016 cohort are approximately 4-5% higher for female students overall (NCES, 2019a). Unfortunately, retention rates by gender are not available through National Center for Education Statistics. Research has indicated a higher intrinsic motivation from the female student, potentially leading to higher academic outcomes (D'Lima, 2014). Many studies have also demonstrated a higher success rate by females at the two-year level (Mertes & Hoover, 2014; Talbert, 2012).

Engagement levels outside the athletic realm for female athletes have been validated to be higher in academic endeavors (Gayles & Hu, 2009). Female athletes tend to come into college with higher academic engagement levels, which carries into their college experience (Simons et al., 1999).

Race in Athletics

Race within collegiate athletics has been a focus of many studies, with much of the research centered on the black male athlete (Harper, 2009). Other studies have moved in the direction of understanding the prioritization of diversity within the overall institution (Smith, 2015). Smith continued the point that most administrators at the NCAA level are white, which contributes to the opinion that diversity lacks the needed emphasis. This poses the question, how do athletics or academics truly support all races towards student success when the institutions do not have minority representation within administration? The NCAA reinforced Smith's minority deficiency claim by reporting that minorities fill only 15% of the positions within athletic department administration compared to minorities comprising over 32% of the student-athlete count (2020c). The NCAA has seen a 5-6% jump in minority student-athlete representation over

the past eight years. Another interesting piece of data from the NCAA report is the significant increase in student-athletes reporting as having two or more races. This category has seen over a 60% increase. As minority student-athlete numbers increase, supporting those students with the goal of student success is essential. In a study of the NCAA black male athlete, Harper et al. (2013) recommended increased transparency in data reporting, more accountability from administrators and coaches in success outcomes, expectations from media to improve the coverage of non-athletic success stories, and finally, an expectation that black student-athletes and their families raise their awareness of realistic life goals.

The NJCAA currently does not have the same ability as the NCAA to collect race data, which hinders research. Harper (2009) claimed more research is needed on the issue of race within community college athletics. Still, if using the NCAA as a model, racial diversity will continue to be a significant factor inside intercollegiate athletics at all levels. In a very recent study, Druckman et al. (2019) explored the importance of diversity in head coaching positions as social and political issues become front stage. The study found that minority head coaches expressed much more sensitivity to the problems of minority athletes, which drove the authors to postulate that greater diversity in coaching positions would lend to a better understanding of what motivates minority athletes.

G. Financial Aid for College Athletes

An athletic scholarship is desirable for many students heading into college. Some student-athletes may depend on these funds for college access (Athletic scholarships significantly impact black student graduation rates, 2004). This form for aid could be very important for student-athletes at the two-year college level. The EADA reported over 137 million dollars distributed to student-athletes at the community college level (2020). With 80,000 student-athletes reported as

participants, the average aid award a student-athlete stands at $1700. Ma and Baum (2016) reported the 2015-2016 average published cost of education across all community colleges in the United States to be almost $17000. With the increased educational costs and the lack of awarded financial aid, this would leave a significant gap between scholarship aid and the final price of college for many of these student-athletes.

One of the overachieving goals of the federal financial aid program is increasing access (Hicks et al., 2014). Federal financial aid is not just for the poor anymore as almost two-thirds of students receive some form of grant aid, and the remaining will get some form of tax subsidy (Dynarski & Scott-Clayton, 2013). Dynarski and Scott-Clayton continued by pointing to the increase over the last two decades in the reliance on federal aid by a college student. Students have transitioned to using many more student loans as the Pell grant program does not cover enough college costs (Baum & Payea, 2004, as cited in Kennamer et al., 2010; Ronstadt, 2009). The increased reliance upon loans has created a much more heterogeneous group of financial aid recipients. Two-year students are less likely than four-year students to take out a student loan (Juszkiewicz, 2014). With lower educational costs at the two-year level (Kipp et al., 2002; Mendoza et al., 2012), students may find the possibility of covering expenses with only a Pell grant. Even with the ability to cover costs using financial aid, unfortunately, research demonstrates the lower-income demographic lacks a solid knowledge and understanding of how federal financial aid works (Kim, 2004; Rosa, 2006), leading to a gap in access for some. Even with this gap, Jones-White et al. (2014) had difficulty tying this lack of financial aid background knowledge to lower success rates.

Much research has shown financial aid as a predictor of college student retention (Fike & Fike, 2008). Students who have a greater financial need tend to persist at a lower rate (Wessel et al., 2006). With such a diverse use of financial aid, better models need to be developed to measure how

financial aid affects student retention (Fike & Fike, 2008). A large variety of financial aid packages exist; consequently, the impact financial aid has on student retention depends on the situation (Jones-White et al., 2014). Merit aid has been reported to positively influence a student persisting and completing (Doyle, 2010). For need-based aid to positively impact retention, more non-federal aid must be inserted into the disbursement to students (Alon, 2011). Otherwise, a gap exists between lower-income and middle-income students. Students from higher socioeconomic backgrounds typically use financial aid to improve their chances of getting into the college of their choice. The lower-income student may use this funding to fund total costs, more often than not at the two-year college level (Kim, 2004).

H. Student Involvement

College student research has multiple studies using student involvement and engagement as a theoretical basis (Mertes & Hoover, 2014; Valentine et al., 2011). In 1984, Astin tied student motivation to the amount of involvement that students demonstrated on campus. Astin emphasized the importance of campus interactions such as involvement in honors programs, student government, athletics, and housing organizations (1984). Engagement in academic activities and faculty interactions are also crucial for positive student outcomes to occur. Much of the research that has followed has stated similar, in that students who are highly engaged in campus interactions and activities are more likely to have better success outcomes (Astin, 1993; Kuh et al., 2008; Tinto, 1993). A study by Means and Pyne (2017) found that support strategies within the institution, such as residence halls, community building groups, faculty and academic support structures, and social identity organizations, all led to a better sense of belonging. Murrell et al. (1998) analyzed the residence halls at the two-year college level and found an underutilization of these facilities relating to connecting the use with academic services. The

authors felt many student service locations on two-year campuses, including where students live, could be rethought to help students achieve better in the classroom. Tinto (1993) identified many of these activities as valuable in student persistence. Kuh and Pike (2005) agreed as the authors reported on co-curricular activities having a positive influence on persistence. Astin's theory embraced activities and the environment being a significant variable within the student involvement model (Mertes & Hoover, 2014). The more a student inputs into the college experience, the more the student will leave college with (Pascarella, & Terenzini, 2005). Ultimately, as a student becomes more academically or socially involved, this involvement may become a precursor to the goal of being integrated into campus (Milem & Berger, 1997). This integration of the student into campus life leads to better success outcomes (Tinto, 1993).

Data and Measuring

Much of the research has utilized surveys to collect data regarding the amount of engagement a student reveals (Sharkness & DeAngelo, 2011), which is very different from relying solely on predictor data as students enter college. Combining predictor data and input or involvement data can be extremely telling. This process allows evaluating how the environment may affect student behavior (Fike & Fike, 2008). Astin reported the most effective method of discovering correlational and meaningful data is to use student demographic data combined with survey results, but this is difficult if using secondary research (Astin, 2005).

A challenging aspect of much of the research has been determining how to apply the student involvement methodology to student populations universally (Mertes & Hoover, 2014). Retention programs can be expensive (Valentine et al., 2011), and since one size seems not to fit all students, getting effective models into action may prove difficult. Since surveys are used much of the time to measure student involvement, a hurdle researchers must climb is finding a

practical methodology to ensure the data is measuring strategies accurately (Sharkness & DeAngelo, 2011). With the accurate measurement of student outcomes, most of the variance is attributed to the student characteristics and institutional programs or initiatives (Astin & Lee, 2003).

I. Chapter Summary

This literature review focused on the two-year college and the student population attending those colleges. Research was also collected on community college athletic programs and the students who participate. The literature revealed a two-year student population somewhat different from their four-year college student peers. This population is characterized by having more diverse students, having a lower socioeconomic status, and possessing a less advanced academic skill set. These students enter an education sector that has seen a significant decline in funding, making serving this at-risk population even more difficult.

The review also dissected the segment of two-year colleges that offer athletics. Research on community college athletics is less plentiful than literature related to the overall two-year college level. The study painted a picture of a culture offering programs for various rationale with some administrators uncertain about what direction to take these programs. The two-year college athlete seems to be a somewhat unknown variable with limited research dedicated to revealing much detail referencing this population of students. Race, gender, financial aid, and scholarship were topics researched to establish some context of the student-athlete at the two-year level. The research highlighted some significant differences between genders and race in student success outcomes. More research is needed in the area of two-year athletics to better determine some trends. Finally, research on student involvement equipped the reader to understand the previous studies completed, which has established that student involvement has a

positive effect on a student's persistence rate, but not without some uncertainty on how colleges should apply retention strategies using the involvement model.

Chapter III. Methodology

A. Purpose of the Study

The purpose of conducting the study was to create a profile of a rural two-year college student-athlete, comparing demographic characteristics against the general study body. Student-athlete data were also analyzed to determine if participation in athletics significantly increased the fall-to-fall retention rate. Student-athlete gender, race/ethnicity, and type of financial aid received were analyzed to determine if these had a significant effect on the fall-to-fall retention rate of the student-athlete.

A limited understanding of the junior college student-athlete exists (Kissinger et al., 2011). This study attempted to add to the limited body of literature on two-year college athletes and their level of student success. College administrators within the two-year sector require research data to assist in making significant decisions on the viability of the addition or continuation of athletic programs. Making student-athletes holistically more successful requires a deeper understanding of the student to implement effective support for the population (Kissinger et al., 2011). Therefore, determining student success outcomes can be critical in shaping institutional effectiveness decisions.

B. Research Design

The study was a quantitative, non-experimental, correlational design that used historical data. A student profile was created using ex post facto data. These data were utilized to establish the fall-to-fall retention rates of first-time, full-time freshmen student-athletes which were compared to the general study body to establish whether a correlational relationship existed between athletic participation and retention. The purpose of correlational research is to determine if one variable affects another variable (Mills & Gay, 2016). This research aimed to study the

relationship between variables, not necessarily determining a causal relationship. Prominent research authors continue to disagree about the difference between casual-comparative and correlational research designs (Johnson, 2001). Johnson cited that even without manipulating variables in a correlational study, the methodology is valuable in improving the understanding that a connection exists but still fails to answer why. For student-athlete data and the student body data, four different cohorts were used representing the years of 2016, 2017, and 2018 and one cohort combined all three years. Since other factors could help determine whether students were retained, no direct causal claim was made about athletic participation's impact on retention or the effect that the student-athlete's gender, race/ethnicity, or financial aid type had on persistence.

C. Sample and Population

The historical data was collected from a student records database system of a rural two-year college in the Midwestern United States which offers a comprehensive athletic program. This college will be referred to as Rural Midwestern College (RMC). RMC reported an unduplicated enrollment headcount between 2000 and 2500 students during the years listed for the study. The enrollment population included students from in-state, out of state, and international, which is made possible by offering on-campus residential housing. Over 45% of the student enrollment headcount was from outside of RMC's three-county service area. RMC was accredited through the Higher Learning Commission (HLC), which covers many Midwestern United States two-year schools, and the institution offered associate degree programs for transfer and terminal degrees. The RMC athletic department offered nine NJCAA sponsored sports comprised of five men and four women programs. The total student-athlete population was approximately 270 students.

A request was made to the administration of RMC to collect and use data for the purposes of this study. This documentation was included in the request to the University of Arkansas Institutional Review Board (IRB). Student data were collected from a three-year period beginning in the fall semester of 2016 and ending with the fall semester of 2019. A variety of cohorts was created from each fall semester of 2016, 2017, and 2018 at RMC. For Research Questions One and Two, a cohort represented the entire population of fall term, first-time, full-time, student-athletes, and the other cohort was the Fall term, first-time, full-time student body population at RMC. For Research Question Three, a statistical analysis was conducted of the fall term student-athlete cohort to determine if a correlation existed between gender and race/ethnicity and fall term to fall term retention. On Research Question Four, a statistical analysis of the student-athlete cohort of each fall term was conducted to determine if there was a correlation between the independent variable of the financial aid type and the dependent variable of fall to fall term retention.

D. Method of Data Collection

Following approval from RMC and the University of Arkansas IRB, data collection began by utilizing the IBM SAS software, which allowed access to student data stored within RMC's student record database (Banner). Banner stores data in various tables, which can be defined by analyzing the Index of data tables within Banner.

Demographical data was collected for this study; however, no use of personal identifiable data occurred as individual student data was analyzed in aggregate form. Not all student data to be accessed subjected to open public record, but the researcher was given access to manually collect data through the Banner system to access data not open to the public.

E. Data Analysis

1. What was the profile of students who participated in athletics at a rural two-year as compared to the general student population?

Demographic data was collected from RMC to answer this research question fully. Any data utilized was collected during the admission application and enrollment process at RMC and from the Federal Financial Aid application. These data collections included the following data: hometown, gender, race/ethnicity, date of birth, state of residency, area of study, and type of financial aid received. The student-athlete cohorts were created by identifying students who received financial aid through an athletic scholarship. The data collected was analyzed utilizing the Microsoft Excel and IBM SAS programs. Means and frequency procedures were used to provide descriptive statistics of the demographics and data of the participants, presenting data within a frequency table.

2. Was there a significant difference in the fall-to-fall retention rate for students who participated in athletics at a rural two-year college as compared to the general student population?

With this question, the cohorts of student-athletes and non-athletes were compared. The independent variable in this instance was the student, and the dependent variable was the retention of the student. These variables are categorical, which deems the chi-square test the appropriate statistical analysis (Gravetter & Wallnau, 2007). A chi-square test of independence was used to identify differences in student retention. The Pearson Chi-square is one of the most widely used methods to determine associations when comparing groups of categorical data (Yang, He & Ott, 2009).

3. Were there significant differences in the fall-to-fall retention rate for student-athletes at a rural two-year college based on gender and race/ethnicity?

Retention rates for first-time, full-time student-athletes were collected and categorized by gender and by race/ethnicity. A chi-square test of independence was also used to identify differences in student retention. The independent variables were gender for student-athletes and race/ethnicity for student-athletes, and the dependent variable was student retention. Two different chi-square analyses for gender and race/ethnicity were completed to create the dataset needed.

4. Was there a correlation between the type of financial aid awarded to student-athletes at a rural two-year college and persistence?

Persistence rates and financial aid awards for first-time, full-time student-athletes were collected. As with Questions 2 and 3, a chi-square test of independence was used to identify differences between types of financial aid and student retention. The types of financial aid that were evaluated were partial and full financial aid, including all or partially institutional aid, scholarship, Pell Grant, tribal funds, federal loans, and alternative grants.

F. Chapter Summary

This quantitative, non-experimental study examined historical data to determine the potential effect of participating in two-year college athletics has on student success, specifically in the area of retention and persistence. A demographic profile was also developed from the collection of data from the student population at RMC. Limited research existed on the two-year college student-athlete (Kissinger et al., 2011; Mendoza et al., 2012), making this study an important addition to student success research.

The study helped create a student-athlete profile at the two-year college level and give depth to research on the effect that participation in college athletics had on a student's ability to persist. The type of financial aid award was also analyzed to determine if a connection between

financial assistance and retention may exist. College administrators may use these data for decisions on the future of athletics at the two-year college level.

Chapter IV. Results of the Study

The study sought to create more defined data on the two-year college athlete, including a demographic profile and student success measurements. Two-year colleges face many challenges, and student success outcomes may rank at the top of the list. A closer look at two-year college athletes may help uncover significant data that may aid in the determination of the value athletic programs bring to the institution. Updated findings may also reveal strategies to help improve some of the student success issues within the two-year college sector.

Chapter IV begins with a summary of the study will a thorough overview, including the purpose of the study, the significance of the study, study design, and the data collection methods of the study. A description of the data collected will follow. Each research question will be restated, leading to a report, analysis of data collected, and answer to the question. Finally, the chapter will conclude with a summary.

A. Summary of the Study

The purpose of conducting the study was to create a profile of a rural two-year college student-athlete and determine if participation in athletics significantly increases the fall-to-fall retention rate. This study will better define the community college student-athlete while giving a deeper understanding of how involvement affects student success. Many two-year colleges offer athletic programs, and in a time when institutions are experiencing many significant challenges, the value of these sports programs may be in question. This study will create a usable dataset to aid administrators in establishing a future direction for the continuation or implementation of athletic programs. With the lack of research on two-year college athletics or the student-athlete in these programs, more research would be helpful to support decision making (Pflum, et al., 2017; Savage, 2006).

College athletic programs create naturally occurring peer groups existing within a routine-oriented structure. Student involvement is then nurtured by this structure as the very nature of existence within these athletic programs lends towards an athlete embracing student involvement. Astin (1984) identified athletics as one method of displaying student involvement. Determining the effectiveness of student involvement models within higher education can form student success approaches across many educational levels. The solution to keeping students enrolled full-time in college from one year to the next has been elusive (Fike & Fike, 2008); therefore, a research study of the two-year athletic model may prove fruitful in establishing further data in the area of Astin's Student Involvement theory.

Two-year colleges sit in a vulnerable position (Phelan, 2014) while serving an at-risk population (Burns, 2010), making administrative decisions very high-stakes. A valuable product of this study was a developed demographic profile of the students attending the two-year college level. The data produced may have a beneficial impact on future student retention research. Having an enhanced understanding of different student populations can enable improved campus retention strategies.

The study utilized four research questions to establish the data to be collected. Data originated from one institution and were collected from the Banner student data management system. Approval for data access and data collection was given by Rural Midwestern College (RMC). Profile data were displayed using descriptive statistics and frequency tables, while the Pearson Chi-square Test of Independence was used to analyze the data for research questions 2, 3, and 4.

B. Data Analysis

Research Question 1: What is the profile of students who participate in athletics at a rural two-year as compared to the general student population?

A profile of the two-year college student-athlete was developed from the collection of demographic data from RMC, most of which was collected through the application process at RMC. Data was collected from the student database at RMC through the IBM SAS Enterprise Guide program. Research Question 1 is answered with the data displayed within Tables 1-6. Each cohort year was separated into two separate tables for ease of reference. The first table displayed gender, race/ethnicity, and age. The second table displays area of study, state residency, and financial aid award. These six tables are the collection of descriptive statistics for both the student-athlete and the general student at RMC. The demographic profile was collected from the fall term cohort years of 2016, 2017, and 2018. These data include a breakdown of gender, race/ethnicity, area of study, state residency, age, and if the student is receiving federal financial aid.

The purpose of Research Question 1 was to create a demographic profile of the rural two-year college student-athlete. The data demonstrated some differences when compared to the general student population. The gender of the general student at RMC in all three cohorts was approximately 55% female. The percentage of females participating in athletics in all three cohorts fell below 30%. The student-athlete population in all three samples also reported a much larger minority population, with White students making approximately 30%. White students comprised a range between 47-50% of the general student body population. General Studies was reported as the most frequent area of study for the student-athlete at almost 38%. RMC commonly reported General Studies as a regular major among the general study body, but not as

frequent as the percentage hovered at approximately 15%. The athletic program attracts a higher rate of out-of-state students than the standard student attending the institution. Student-athletes were reported much younger at RMC than the general student body, with an average age of around 18 compared to the mean age of 21. And finally, student-athletes did not receive federal financial aid as commonly as the general student body. These descriptive statistics determine a two-year college student-athlete at RMC is more than likely a male, minority, out-of-state student focused on a General Studies degree plan and is utilizing federal financial aid to help pay for his education. The percentage in all three cohorts for student-athletes ranges between 64% and 70%, while the rates for the non-athlete ranged between 70%-78%. These data seemly demonstrate that students who participate in athletics at RMC have different demographic characteristics than their same institution student peers.

Table 1
Fall 2016 Student Cohort Demographics - Gender, Race/Ethnicity, Age

	Student-Athlete		General Student	
Demographic Variable	*N*	%	*N*	%
Total Students	219		2082	
Gender	*n*		*n*	
Male	155	70.7	1162	43.9
Female	64	29.3	915	55.8
Not Reported	0		5	.002
Race/Ethnicity				
American Indian or Alaska Native	13	5.9	366	17.6
Black or African American	68	31	171	8.2
Hispanic	10	4.5	116	5.5
Multiracial	19	8.6	258	12.4
Other	35	16	158	7.5
White	74	33.8	1013	48.6
Age - Average	18.5		21.7	
<=17	9	4.1	209	12.1
18	130	59.4	756	36.3
19	59	27	376	18
20	20	6.8	107	5.1
>=21	6	2.7	591	28.4

Table 2
Fall 2016 Student Cohort Demographics - Area of Study, Residency, Financial Aid

	Student-Athlete		General Student	
Demographic Variable	*N*	%	*N*	%
Total Students	219		2082	
Top Areas of Study	*n*		*n*	
General Studies	83	37.9	325	15.6
Physical Education	25	11.4	68	3.2
Business Management	19	8.7	134	6.4
Nursing	10	6.4	333	16.0
Physical Therapist	13	5.9	111	5.3
State Residency				
In-State Residency	124	56.6	1572	76.8
Out-of-State Residency	78	35.6	440	21.5
Unreported	17	7.8	35	1.7
Federal Financial Aid				
Receiving Aid	141	64.4	1474	70.8
Not Receiving Aid	78	35.6	608	29.2

Table 3
Fall 2017 Student Cohort Demographics - Gender, Race/Ethnicity, Age

	Student-Athlete		General Student	
Demographic Variable	N	%	N	%
Total Students	241		2047	
Gender	n		n	
Male	169	70.1	905	44.2
Female	72	29.9	1140	55.7
Not Reported	0		2	.0009
Race/Ethnicity				
American Indian or Alaska Native	15	6.2	362	17.7
Black or African American	84	34.9	176	8.6
Hispanic	16	6.6	111	5.4
Multiracial	21	8.7	279	13.6
Other	26	10.8	89	4.3
White	79	32.8	1030	50.3
Age - Average	18.4		21.5	
<=17	9	4.1	322	15.7
18	130	59.4	743	36.3
19	59	27	341	16.6
20	20	6.8	84	4.1
>=21	6	2.7	557	27.2

Table 4
Fall 2017 Student Cohort Demographics - Area of Study, Residency, Financial Aid

	Student-Athlete		General Student	
Demographic Variable	*N*	%	*N*	%
Total Students	241		2047	
Top Areas of Study	*n*		*n*	
General Studies	101	41.9	402	19.6
Business Management	23	9.5	162	7.9
Sports Management	21	8.7	48	2.3
Physical Education	16	6.6	44	2.1
Natural Science	13	5.3	54	2.6
State Residency				
In-State Residency	138	57.3	1628	78
Out-of-State Residency	89	37	413	20
Unreported	14	5.8	41	2
Federal Financial Aid				
Receiving Aid	168	69.7	1494	73
Not Receiving Aid	73	30.3	553	27

Table 5
Fall 2018 Student Cohort Demographics - Gender, Race/Ethnicity, Age

	Student-Athlete		General Student	
Demographic Variable	*N*	%	*N*	%
Total Students	228		1881	
Gender	*n*		*n*	
Male	167	73.2	838	44.5
Female	61	26.8	1043	55.5
Not Reported	0		0	
Race/Ethnicity				
American Indian or Alaska Native	14	6.1	326	17.3
Black or African American	74	32.5	155	8.2
Hispanic	22	9.6	132	7
Multiracial	29	12.7	288	15.3
Other	27	11.8	74	3.9
White	62	27.2	906	48.2
Age - Average	18.3		21.1	
<=17	17	7.4	347	18.4%
18	129	56.6	640	34
19	67	29.3	303	16.1
20	5.7%	6.8	104	5.5
>=21	2	.8	393	20.9

Table 6
Fall 2018 Student Cohort Demographics - Area of Study, Residency, Financial Aid

	Student-Athlete		General Student	
Demographic Variable	*N*	%	*N*	%
Total Students	228		1881	
Top Areas of Study	*n*		*n*	
General Studies	78	34.2	322	17.1
Business Management	38	16.7	139	7.3
Sports Management	25	11	55	2.9
Physical Education	15	6.5	28	1.4
Physical Therapist	11	4.8	81	4.3
State Residency				
In-State Residency	140	61.4	1497	79.6
Out-of-State Residency	72	31.5	384	20.4
Unreported	16	7.1	35	1.9
Federal Financial Aid				
Receiving Aid	228	71.5	1881	78.7
Not Receiving Aid	65	28.5	401	21.3

Research Question 2: Is there a significant difference in the fall-to-fall retention rate for students who participate in athletics at a rural two-year college as compared to the general student population?

Pearson's Chi-square Test of Independence was utilized to answer Research Question 2. The chi-square test was conducted to evaluate the relationship between student-athlete retention and general student body retention. Four different cohorts were used, with a cohort from each of 2016, 2017, and 2018 fall terms and a cohort representing the combination of all three years. The retention of these first-time freshmen students was measured from one fall term to the next fall term. Cohort One represented the student-athletes (n =104) and the non-athlete students (n = 599). The level of significance was evaluated using an alpha level of .05. Athlete and non-athlete retention were compared and the data indicated the retention was significantly different, X^2 (1, N = 703) = 5.42, p = .020. The retention rate for athletes was 59.6%, while the non-athlete retention was reported at 47.8%. Therefore, participation in athletics at RMC had a significant effect on retention for that student.

Cohort Two represented students from the fall 2017 term. Student-athletes (n = 113) and non-athletes (n = 481) were compared using Pearson's Chi-square Test of Independence. Findings indicated the retention rate of the student-athlete and the non-athlete student were significantly different, X^2 (1, N = 619) = 6.25, p = .012 based on the alpha level equaling less than the predetermined threshold of .05. The retention rate for athletes was 55.7%, while the non-athlete was retained at 42.8%.

Cohort Three represented students from the fall 2018 term. Student-athletes (n =103) and non-athletes (n = 516) were compared using Pearson's Chi-square Test of Independence. The two groups of students in Cohort Three were not significantly different when comparing

retention, X^2 (1, N = 584) = 1.197, p = .274. The finding for this group does not indicate that participation in athletics has a significant effect on retention. The retention rate for athletes was 51.4%, while the non-athlete was retained at 45.5%.

With the desire to further the analysis, all three cohorts were combined into Cohort Four. Student-athletes (n = 320) and non-athletes (n = 1596) were compared using Pearson's Chi-square Test of Independence. The two groups of students in Cohort Four were significantly different when comparing retention, X^2 (1, N = 1916) = 11.405, p < .001. The retention rate for Cohort Four for the student-athlete population was 55% compared to the 45% retention rate for the non-athlete population. Therefore, Research Question 2 is answered by stating a significant difference existed between the retention of a student who participates in college athletics versus the non-athlete at a two-year institution. The study helps the researcher conclude a relationship existed between participation in athletics and persistence from one fall term to the next fall term at the same institution. Table 4 detailed the data collected from each of the cohorts described above.

Table 7
Results of Pearson's Chi-square Test of Independence measuring the difference in retention

Variable	X^2	*df*	*P* value
Cohort One - Fall 2016	5.426	1	.020
Cohort Two – Fall 2017	6.251	1	.012
Cohort Three – Fall 2018	1.197	1	.274
Cohort Four – Combined Cohorts 1-3	11.405	1	.001

Research Question 3: Are there significant differences in the fall-to-fall retention rate for student-athletes at a rural two-year college based on gender and race?

As with Research Question 2, Research Question 3 was also answered using Pearson's Chi-square Test of Independence. With the concern of violating an assumption, the fall terms of 2016, 2017, and 2018 were combined into one dataset. The race/ethnicity variable data was split into six categories, creating a chance for a low frequency expected count that may have violated an assumption. Using the combined years of 2016, 2017, and 2018, these data did not violate any assumptions. The student population continued to be the first-time freshmen cohort using the US Department of Education standard of measuring retention.

Using Pearson's Chi-square Test of Independence, retention of male student-athletes (n = 228) and female student-athletes (n = 92) were compared. No significant difference was determined in the retention of students based on gender, X^2 (1, N = 320) = .417, p = .519. The p value does not fall less than the expected alpha level of .05. Therefore, the finding for this test does not indicate that the gender of the student-athlete affects retention. The specific retention rate for male student-athletes was 56%, and the female student-athlete retention rate was 52%. Research Question 3 is answered as there are no significant differences between the fall-to-fall retention of two-year student-athletes based on race.

Table 8
Results of Pearson's Chi-square Test of Independence measuring the difference in retention based on gender and race/ethnicity

Variable	X^2	*df*	*P* value
Gender	.417	1	.519

In answering the portion of Research Question 3 related to race, Pearson's Chi-square Test of Independence was once again used. Six different categories of race were analyzed,

American Indian or Alaska Native (n = 21), Black or African American (n = 101), Hispanic (n = 30), Multiracial (n = 33), White (n = 91), and Other (n = 44). The data indicate no significant difference between the race/ethnicity of a student-athlete and retention, X^2 (5, N = 320) = 5.359 p = .374. The categories of race/ethnicity, including the retention rate for each, are American Indian or Alaskan Native 52%, African American 59%, Hispanic 37%, Multiracial 57%, White 53%, and Other 59%. Research Question 3 can be answered by stating there are no significant differences between the fall-to-fall retention of two-year student-athletes based on race.

Table 9
Results of Pearson's Chi-square Test of Independence measuring the difference in retention based on gender and race/ethnicity

Variable	X^2	*df*	*P* value
Race	5.539	5	.374

Research Question 4: Is there a correlation between the type of financial aid awarded to student-athletes at a rural two-year college and persistence?

In answering Research Question 4, the researcher again decided to use Pearson's Chi-square Test of Independence. The student-athletes were divided into two categories: those receiving full financial aid covering the equivalent of the cost of education at RMC and the opposing group who received only partial financial aid. The partial aid group was expected to have out-of-pocket expenses to attend RMC. Financial aid could come in the form of institutional and outside scholarships, grants, work-study, and loans.

The three cohorts of student-athletes were used from the fall of 2016, 2017, and 2018. The first-time freshmen cohorts were used again as the basis for this data analysis. These three cohorts were combined to avoid violating an assumption. Those students receiving a full

scholarship (n =56) and those receiving a partial scholarship (n = 264) were compared using retention as the dependent variable. The analysis found the retention rate for the partial financial aid group was 57%. The full financial aid group, which was much smaller, reported a retention rate of 40%. The findings generated from the chi-square test reported, X^2 (1, N = 320) = 4.044, p = .044. With these findings, Research Question 4 is answered as there is a correlation between the type of financial aid and the retention of the student-athlete. Student-athletes receiving the equivalent of a full financial aid were retained at a significantly different rate than those receiving partial aid and exposed to out-of-pocket expenses.

Table 10
Results of Pearson's Chi-square Test of Independence measuring the difference in retention based on the type of financial aid

Variable	X^2	*df*	*P* value
Race	4.044	1	.044

C. Chapter Summary

The focus of this study was to develop a clear and defined demographic profile of the two-year college student-athlete and used these data to determine if participation in two-year college athletics demonstrates a significant difference in student success. One institution was studied using three years of student-athlete and general student body demographic data. This quantitative approach could be easily replicated for future research.

The study was developed using four research questions to determine the snapshot of a two-year college student-athlete and measure student success. The first question requested a profile drawn from the student-athlete by collecting the demographic characteristics of gender, race/ethnicity, age, state residency, area of study, and financial aid received. These data were

compared to the general study body. Research Question 2 used only first-time freshmen students, with the hope of isolating the cohorts for quality retention data. Research Question 3 used gender and race/ethnicity as a variable to compare against the student's retention with hopes of determining if these inputs had any effect on retention. Finally, the type of financial aid received was also analyzed to see if a correlation may exist between the financial aid and student-athlete retention.

The data collected demonstrated a difference in the general profile of a two-year college student-athlete versus the general student attending the institution. Also revealed was a significant difference between the retention of the student-athlete and the non-athlete was also demonstrated. Gender and race/ethnicity appeared not to influence student-athlete retention; however, a correlation between the type of financial aid received and the student-athlete retention did exist.

Chapter V. Conclusions and Recommendations

The industry of major college athletics relies heavily on statistics. For each competition, data is collected and viewed by anyone who might have an invested interest. There are websites like ESPN dedicated to the reporting of statistics to analyze and describe the student-athlete and their performance. Not so measured is the performance of the two-year college student-athlete. The national media and the casual fan seemingly fail to appreciate this lower level of college athletics.

Performance in the area of student success is of very high interest to many decision-makers at the community college level (Cohen et al., 2014). This study attempted to paint a picture of the rural, two-year college student-athlete with the purpose of creating a valuable dataset for use by interested college administrators. Chapter V includes a summary of the study, conclusions, recommendations, and discussion. Embedded within the summary are the research questions and the purpose, design, and results of the study.

A. Summary of the Study

Rural two-year college athletic programs are scattered throughout the United States and serve thousands of student-athletes as these athletes compete in their respective sports. The institutions supporting these athletic programs are finding troubling times as funding (Joch, 2011; Phelan, 2014) and enrollment (Juszkiewicz, 2020) have seen declines while also managing issues with lower academic preparedness of students and dropping student success measurements (Bahr, 2012; Burns, 2010; Karp et al., 2010; Yu, 2017).

The purpose of conducting the study was to create a profile of a rural two-year college student-athlete, comparing demographic characteristics against the general study body. Student-athlete data was also analyzed to determine if participation in athletics significantly increased the

fall-to-fall retention rate. Student-athlete gender, race/ethnicity, and type of financial aid received were also analyzed to determine if these had a significant effect on the fall-to-fall retention rate of the student-athlete. This study can influence two-year college administrators by arming them with data to help make valuable and valid decisions regarding athletic programs and general institutional retention strategies on their respective campuses. The athlete and non-athlete alike could be positively impacted by the knowledge gained from the data and the analysis from this research.

Data were collected from the student data management system at RMC, which consisted of student data from 2016, 2017, and 2018. Student-athlete and general non-athlete data were collected to complete the student datasets for all of the cohorts reported. The total student-athlete data and a smaller subset of first-time freshmen data were collected along with the general student data at RMC. The data collection process was straightforward as the software SAS Enterprise Guide enabled the collection directly from the student database and allowed many tables to be combined and queried without disrupting the integrity of each data record.

Four research questions shaped the research study. Each question is listed below with the description of the data and the answer to the research question.

Research Question 1

What was the profile of students who participated in athletics at a rural two-year as compared to the general student population?

A large variety of demographic categories could be included in a student profile. The demographic categories chosen for this study included age, gender, race/ethnicity, area of study, state residency, and type of financial aid. These data fields were collected for both the student-athlete and the general student body student at RMC, representing the cohort years of 2016,

2017, and 2018. The data were isolated for the fall term at the time of enrollment. Both datasets represent the entire population of student-athletes and general body students. The average age of the general student was 21.4, while the student-athlete average was 18.4. The gender statistic reported was 56% female and 44% male for the general body student opposed to 71% being male and 29% being female for student-athletes. The minority race garnered most of the population, with 69% represented for the student-athlete population while white and minorities were represented evenly, both at 50%, for the general body student. Most student-athletes majored in the General Studies and Business degree plans with 38% and 12%, respectively. For the general body students, the General Studies degree plan also topped the list at 17%, and Nursing majors were a close second place at 16%. For the state residency question, 42% of the student-athletes hailed from outside of the state borders. This statistic was much different for the general body student, where most, 78%, came from in-state. The last demographic statistic collected was if the student received financial aid. Very similar data reported for both student-athletes and general body students where students who received financial aid were 70% and 73%, respectively. The profile of the student-athlete shaped into the following: a male, predominantly minority student, who had a good chance of being from out-of-state, took courses in the General Studies major and qualified for financial aid. The question desired a comparison of the student-athlete to general body students. The general body student data returned a student who was likely to be a 21-year-old female who had an equal chance of being minority versus white. The student was most likely from inside the state, with many areas of study possible, and received financial aid. Most of the categories brought a noticeable difference between the two populations, excluding the financial aid question.

Research Question 2

Is there a significant difference in the fall-to-fall retention rate for students who participate in athletics at a rural two-year college as compared to the general student population?

The fall-to-fall retention rates for the student-athletes and the non-athletes were isolated to the first-time freshmen population, allowing standardization of populations and aligning with the US Department of Education measurements. When combining data from all three cohorts, which were from the fall terms of 2016, 2017, and 2018, the findings demonstrated a significant difference between the retention of the first-time freshmen student-athlete population at RMC and the first-time freshmen non-athlete population. For the student-athlete retention rate at RMC, the study found a 55% student retention rate over the three combined years. For the non-athlete retention rate at RMC, the study found a 45% rate over the three combined years.

Research Question 3

Are there significant differences in the fall-to-fall retention rate for student-athletes at a rural two-year college based on gender and race?

When analyzing the student-athlete's retention at RMC based on gender, the findings for this study did not reveal a significant difference. The male retention rate for the three combined cohort years was 56%, while the rate for females was 52%. The chi-square test results found no significant difference.

When analyzing the retention of the student-athlete at RMC based on race, the findings for this study also did not reveal a significant difference. Listed are the several categories of race/ethnicity and their retention rates, American Indian or Alaskan Native 52%, African

American 59%, Hispanic 37%, Multiracial 57%, White 53%, and Other 59%. These data were tested using the chi-square test and found no significant difference.

Research Question 4

Is there a correlation between the type of financial aid awarded to student-athletes at a rural two-year college and persistence?

The final research question compared the retention of the student-athlete to the type of financial aid awarded. The study categorized the type of aid as a student receiving partial financial aid or a student receiving full financial aid, which covered the total cost of education. The findings from the chi-square test discovered a significant difference. The student-athletes who were given full financial aid had a lower retention rate than those who received only partial aid. The partial aid students had a retention rate of 57%. The full aid population had a retention rate of 40%. The full aid population was much smaller, but this sample did not violate any assumptions.

B. Conclusions

1. A demographic profile of a two-year student-athlete at a rural institution differs from that of a general student at the same institution in the categories of gender, race/ethnicity, age, area of study, and state residency. The study created a valuable student-athlete profile at a rural two-year college, which indicated some interesting practices by the case study institution. RMC seems to offer more sports for the male gender, and more male gender students are willing to participate. Most of the students recruited are of traditional college age, around 18 years, demonstrating the recruiting targets of the sport were for the younger and directly from high school students.

2. The two-year rural student-athlete is more likely to travel a longer distance to attend the institution of choice differing from their two-year college non-athlete peers. Most likely, this could be attributed to the recruiting aspect of a college athletic program. A service area to a rural two-year college may not have many highly competitive athletes; therefore, searching outside of the service area is necessary. The higher percentage of student-athletes from out of state may also be attributed to the enrollment growth expectation of an athletic program. The purpose of an athletic program may be to attract students from outside of the local area, making this recruiting strategy part of the mission of an athletic department. The student-athlete profile at RMC reported a higher percentage of male students, potentially indicating males would then also seem willing to travel from a distance to participate in a two-year college athletic program.
3. Rural two-year institutions could increase student racial/ethnicity diversity through the offering of athletic programs. The NCAA has seen a growth in minority student participation over the last five years (2020c). Without quality demographic data for the NJCAA, determining where RMC stands in comparison is difficult, but the data collected for this study indicated a higher percentage of minority students.
4. The retention rate of a two-year student-athlete at a rural institution is significantly different from their non-athlete peers. The retention rate for the student-athlete at RMC was determined to be higher than the non-athlete. The retention rate for the student-athlete was 55%, while the non-athlete was 45%. Student-athletes who decide to attend a two-year institution may have several advantages over their non-athlete

peers, including a higher motivation, more mentoring and guidance, and the likelihood of increased involvement on campus.

5. Gender does not impact the retention rate of a two-year student-athlete at a rural institution. The retention rate comparison between male and female student-athletes at RMC was not statistically significant. The male retention rate was 56%, and the female rate was 52%. Retention rates by gender are not collected through IPEDS; therefore, establishing a comparison is difficult. However, with graduation rates of females at the two-year college level being typically higher (NCES, 2019a), this student success measure may likely indicate that retention rates would be higher for females as well. The findings of a higher retention rate for males were then somewhat surprising.
6. Race/Ethnicity does not impact the retention rate of a two-year student-athlete at a rural institution. The difference in the retention of student-athletes at RMC based on race/ethnicity was not statistically significant. Retention rates by race/ethnicity are not collected through IPEDS; therefore, establishing a comparison is difficult. Graduation rates are measured by IPEDS, which reported a difference in graduation rates based on race/ethnicity (NCES, 2019a). Once again, with the national student success data demonstrating a typical difference based on race, RMC would not seem to follow that trend.
7. The type of financial aid has an inverse impact on the persistence rate of a student-athlete at RMC. These data seem a little counterintuitive, but students who received full financial aid at RMC did not persist as well as students who did not get all of their education costs covered through financial aid. The common thought would be

that removing a barrier to success, such as the cost of education, should lead to higher persistence (Athletic scholarships significantly impact black student graduation rates, 2004). One consideration would be the type of student attending RMC, who qualifies for more aid, could be a higher risk student. The student with more financial aid may represent a lower-income student who may be more at risk (Wessel et al., 2006).

C. Recommendations

Recommendations for Research

1. The study should be replicated at multiple rural two-year institutions that host athletics, keeping a similar institutional and athletic program profile to determine similarities between the studies. More demographic characteristic data should also be collected to build a more robust two-year college student-athlete profile. Data for this research was not difficult to collect or analyze.
2. This study should become a longitudinal study at RMC with the intent to improve decision-making.
3. This study could be extended to include further data analysis on financial aid, including a comparison to the general student body.
4. The study could be replicated on two-year urban campuses, which may have different institutional and athletic department missions compared to rural institutions.
5. Administrators should create a similar study to include other extra-curricular and co-curricular activities on two-year campuses.

Recommendations for Practice

1. Two-year college administrators at institutions that offer athletics should utilize the data for decision-making regarding their athletic programs.

2. Two-year college administrators at institutions that offer athletics should create their data analysis practices to improve understanding of their local student-athlete population.
3. Region or conference leaders should create data-sharing programs that could help in the justification of athletic programs.
4. The National Junior College Athletic Association should collect demographic and student success data to share with member institutions.
5. Two-year college administrators should use the framework of athletic programs to recreate positive outcomes in other extra-curricular and co-curricular programs.

D. Discussion

Participation in college athletics seems to offer many positive results. Commonly reported outcomes to include the opportunity for the following: leadership, learning to work within a team, scholarships, fame, and preparing for professional sports. These reasons may not be enough to justify the expensive reality of offering these sports at the junior college level, where significant revenues are not generated from streams such as TV contracts, ticket sales, or alumni giving. Administrators at the two-year college level are faced with many challenges to ensure the institutional mission continues to be served. As in any leadership role, finding solutions to problems is at the top of any priority list. Two-year institution administrators must find answers to declining enrollment, lower funding, and low success outcomes. Athletic programs may represent an expensive, excessive albatross or could define a strategy that epitomizes the institution's vision as a method to enhance student success. Administrators need data to understand how athletic programs can be positive campus assets.

The first research question of the study sought to determine the profile of the rural two-year college athlete. The purpose of this question concerning the study was to discover who the college is serving and what incoming characteristics these student-athletes enter college. Is the student-athlete much different from the non-athlete? The study found the rural two-year student-athlete at RMC had some different demographic characteristics compared to the characteristics possessed by the general student body at the same institution. Much research has focused on the incoming characteristics of the college student to determine if these characteristics affect student persistence (Fike & Fike, 2008). Pike and Graunke (2015) pointed out the incorrect strategy of viewing retention rates of the institution to determine the quality of the college. Still, more focus should be placed on the student's characteristics to improve student success measures. Lotkowski, Robbins, and Noeth (2004) reported the need to determine student characteristics before launching a retention strategy. Therefore, having a good understanding of these incoming demographics is valuable. This study found most student-athletes entered college directly from high school since the average age was 18. Concerning student success, this is important; as Burns (2010) reported a delayed enrollment in college could negatively impact student success. Most student-athletes in this study were minority males, posing a potentially problematic issue as the literature review demonstrated typically lower outcomes for minority students. Clotfelter et al. (2013) found the input characteristics of the minority race and the male gender were negatively associated with college success. Contreras (2012) reported that minorities often take added credits due to low academic preparedness. Isolating characteristics which may signal at-risk students is valuable data any administrator should desire.

Another demographic variable collected was whether or not the student received financial aid. The collected data indicated most student-athletes at RMC received financial ad. Financial

aid has been found to be a predictor of student success (Fike & Fike, 2008). Students with higher financial needs typically have lower success rates (Wessel et al., 2006). Also collected was the evaluation of their in-state residency status. This data might help unveil some valuable insight into the rural student-athlete experience. Mykerezi et al. (2009) performed a study in which rural students who lived further away from a community college were less likely to attend that college and more likely to attend a four-year institution. This current study found that most student-athletes at RMC were coming from a further distance to attend the rural college. Tying into the student involvement theory, students who are willing to attend a school further from their home may enter school with a higher level of motivation, possibly resulting in a higher likelihood of student involvement when on campus. By Astin's theoretical framework, this student would see a better chance to succeed.

Colleges should prioritize a process by which the demographics of the incoming student-athletes are collected to help shape institutional services to support this diverse population. Data collection is critical. The issue of lower funding at the community college level has been reported as common, equating to less qualified staff to serve students (Slanger et al., 2015). Institutions must find strategic methods to identify the student populations in need of services to enhance student success. The findings from this study can help build the profile of a student-athlete population and allow administrators to then dedicate the appropriate services. Tinto (1993) has long emphasized the importance of understanding these incoming characteristics.

The study sought to determine if the retention of a student-athlete was significantly different from the non-athlete. The study was built around the conceptual framework of the Student Involvement Theory by Alexander Astin where he believed a student has a better opportunity for academic success if the student is involved in the campus environment from a

holistic standpoint (1984). Astin felt athletics represented a type of involvement that goes beyond the classroom. The findings from this study seemed to corroborate this theory as the combined three-year cohort's retention was significantly different from the non-athlete at RMC. The reported rate was higher for the athlete population. The student-athlete, even at the two-year level, has some inherent advantages. These advantages come in the form of a built-in support system and mentorship from coaches along with an active peer group. This researcher believes the positive outcomes from involvement may counteract any negative incoming characteristics such as low academic preparedness, lower-income, being a minority, or being male. Astin developed the thought that students who come into college and have the motivation to become involved beyond the classroom experience will have a better opportunity for student success (1984). As reported, Astin may have been lacking in only focusing his research on the four-year student (Pascarella & Terenzini, 2005). This study helped add to this type of research since this study fit the conceptual model Astin has described. Student-athletes are entering college with a high level of motivation, directed mainly towards athletics. Still, athletic participation may establish that the student has the capacity for high involvement. By utilizing this capacity, the student-athlete may further their success into the academic realm and see better college outcomes.

Gender and race/ethnicity were another layer to this study, evaluating the effect those demographic characteristics have on the student-athlete's retention. The study found that neither gender nor race/ethnicity has a significant impact on student-athlete retention. The male and minority populations have historically demonstrated lower success measurement in college (Clotfelter et al., 2013; NECS, 2019a), making the findings of this current study interesting. Connecting this past research with this current study, one could postulate that participation in

two-year college athletics had a leveling effect on student success. In other words, if the male student-athlete or the minority student-athlete was already at a disadvantage based on past student success data, then maybe participation in athletics had a counter effect to what has traditionally occurred. Maybe this athletic participation has allowed these students to "catch up". The NCAA does not collect retention rates; however, graduation rates are documented. The male and minority student-athlete do demonstrate a lower success rate compared to their female and white peers (NCAA, 2019a). Further research evaluating success rates by demographics would help further research.

The final research question dug into the type of financial received by a student-athlete and the impact the award may have on the retention of the student-athlete. The most exciting finding reported from the data analysis for the financial variable was the inverse relationship financial aid had on the persistence of that student. As reported in the data, there was a significant statistical difference between those students receiving a partial financial aid package and those having all of their educational costs covered. This data deserves to be described at a more detailed level. A student receiving full financial aid may or may not be a student receiving a full scholarship. Some students will utilize a combination of financial aid awards to cover costs. Many students at RMC use athletic scholarships, grants, and loans to ensure no out-of-pocket expenses are incurred. Other students may also have a gap between aid and the cost of education; however, those students may also come from a socioeconomic background where the family can absorb the cost. As reported in the literature review, there seems to be a significant gap between financial aid and the cost of education based on EADA data and national data on average two-year costs. Wessel et al. (2006) reported students with a greater financial need tend to persist at a lower rate which may explain the data from this study. Students who receive a higher

percentage of financial aid at RMC might be those lower socioeconomic students, and these incoming characteristics may signal a great probability of lower success outcomes. A solid baseline statistic of student-athlete financial aid award type and amounts is needed; therefore, further research is required to identify the exact type of aid received by student-athletes at the two-year level and the amount. A comparison against the general student population would also be helpful.

Overall, the current study worked well within the established design as the approach and methodology were very straightforward. Most data were quickly collected and analyzed. The financial aid data was somewhat problematic due to each student being awarded many specific types of aid. The financial aid category included several different types of scholarships for many students. With such a complex dataset, isolating an effect became more difficult. The recommendation was then made to further study in the area related to student-athletes receiving aid. This discussion has demonstrated how the findings from this study support the concepts pulled from Astin's Student Involvement Theory. These findings support that the two-year college students have an improved chance to persist by participation in athletics. This athletic participation may also improve the opportunity for some at-risk students to achieve at a higher rate. Collecting demographic data from student-athletes will also allow college administrators to prepare meaningful retention strategies for this specific population. The model can then be duplicated for other campus activity programs.

E. Chapter Summary

This chapter aims to reintroduce the purpose and the significance of the study while restating each research question. The chapter is bound together with the findings, analysis, and discussion. Each research question was stated with results included and some discussion related to these findings. The researcher's conclusions were listed in detail, with a discussion on each

topic. Recommendations for further research and further practice were made by the researcher, giving the next steps for the reader. Finally, the Discussion section gave an overall analysis derived from the findings, connecting the results to the conceptual framework and the reviewed literature.

The study found a significant difference between the student retention of the rural two-year college athlete and the non-athlete. This finding was explained using the theoretical framework of Astin's Student Involvement Theory. Past research has emphasized the importance of the pre-collegiate characteristics of incoming students, which led to the study's first research question, which expected the creation of a student-athlete profile. The purpose of creating this profile is to determine the incoming characteristics of this population. Athletic participation may help the male and the minority student achieve student success at higher levels. A better analysis surrounding student-athlete financial aid awards may be warranted to create a clearer picture of scholarship awards as administrators make strategic decisions. Arming two-year college decision-makers with valuable data is the most important result of this study.

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Appendix

Institutional Review Board Approval

To:	Dustin James Grover
From:	Douglas J Adams, Chair IRB Expedite d Review
Date:	05/26/2021
Action:	**Exemption Granted**
Action Date:	05/26/2021
Protocol #:	1903182051
Study Title:	Tale of the Tape: A Study of Two-year College

Student-Athletes The above-referenced protocol has been determined to be

exempt.

If you wish to make any modifications in the approved protocol that may affect the level of risk to your participants, you
must seek approval prior to implementing those changes. All modifications must provide sufficient detail to assess the impact of the change.

If you have any questions or need any assistance from the IRB, please contact the IRB Coordinator at 109 MLKG Building, 5-2208, or irb@uark.edu.

cc: Michael T Miller, Investigator