Reconnecting to Dyersburg State Community College: A Renewed Hope for Adult Learners in Tennessee

Ryan Quarles & Mara Woody

May 2018

Contents

Executive Summary

Regarding adult learners Kasworm (2008) aptly stated, "learning is an act of hope" (p. 27). Adult learners' (those classified as students over the age of 24) motivation for pursuing higher education is a story of hope in futures and dreams. Adults choose to study postsecondary education for many reasons: improve employment progression, create more opportunities, navigate rapidly changing workplace demands, address technological innovations, and extend productivity over their lifespans (Anderson, 2011; Brown, 2002; Bulgar & Watson, 2006; Chickering, 1981; Ross-Gordon, 2011; Wlodkowski, Mauldin & Gahn, 2001;).

As a subpopulation of nontraditional learners, adult student populations possess a unique set of needs that traditional higher education institutions often struggle to fill. With approximately three-fourths of all higher education students identifying as nontraditional (Radford, Cominole & Skomsvold, 2015), it is time colleges understand and more effectively serve these students.

MacKinnon-Slaney (1994) asserted that "promoting the development of adult students in higher education is both an art and a science" (p. 268). This implies that quantitative data and statistical analysis alone will not fully complete the picture of adult learner needs. Through studying adult student populations both in aggregate numbers and as individuals with a diverse set of life circumstances, researchers may attain a greater understanding of their motivations for, expectations of, and needs from higher education (Anderson, 2011).

In recent literature, Fairchild (2003) emphasized that many adult programs are add-ons to traditional programs and are not suitable in meeting diverse adult learner needs. This is further substantiated by MacKinnon-Slaney (1994) who argued that traditional student programming cannot meet the needs of adult learners. One confounding issue with adult learners is that they attend postsecondary study with a complex and heterogeneous set of beliefs, lives and pressures, making their needs different from and even more demanding than traditional students (Brown, 2002; Chickering, 1981; Hanniford, 1993; Turner, Breneman, Milam, Levin, Kohl, Gansneder & Pusser, 2007; Van Noy & Heidkamp, 2013). This diversity creates a complex puzzle for higher education institutions as they attempt to untangle the challenges and develop strategies for adult learner success.

Many states recognize the critical need to educate adult learners to meet statewide educational goals and enhance local, state, and United States' economic status in a global economy. As one of the leading states in recognizing the importance of adult learning, on June 1, 2017, the state of Tennessee passed Tennessee Reconnect legislation (HB 0531 and SB 1218), providing free community college tuition to any adult resident of Tennessee (https://www.tn.gov/nexttennessee). The law states that "[t]he grant created by this bill will be available to persons who have been out of school for extended periods of time and who may have never attended college" (http://wapp.capitol.tn.gov/apps/BillInfo/Default.aspx?BillNumber=HB0531), giving adults learners new financial opportunities to study. The Reconnect grant program stems from the Drive to 55 Initiative which established Tennessee's goal to have 55 percent of its population educated with a postsecondary program completion of some kind by the year 2025 (https://www.tn.gov/nexttennessee). Current census data highlight that only 25.4 percent of adults in Tennessee possess a bachelor's

degree or higher (https://www.census.gov/quickfacts/TN). In recognizing there are not enough traditional age students in Tennessee to reach this goal, Tennessee determined it is critical adults return to higher education study as well. With the need to educate adult learners to reach this goal and knowing the multiple shifting financial needs and obligations of adult learners, Tennessee has effectively made community college free to remove the financial barrier of postsecondary education for its adult population (www.tnreconnect.gov website). In recognition of the unique needs of adult learners and considering the new Tennessee Reconnect grant, Dyersburg State Community College (DSCC) in west Tennessee commissioned a Peabody College team of capstone doctoral students to evaluate its adult programming during the 2017-18 academic year with the purpose of discovering the story behind adult learner success at DSCC. Specifically, this project answered the following research questions:

1. What characteristics are significant predictors of adult students persisting to a second year at DSCC?
2. What academic programs do adult learners in the Dyersburg service-area report being interested in studying?
3. What are the academic and support services preferences of adult learners at DSCC, and how do the current offerings reflect those preferences?

We found that the adult learner population at DSCC is heterogeneous, and much like adult learner populations in general, it is difficult to determine any single factors that contribute to their persistence. Our research affirmed there are several practical approaches institutions may take to meet the scheduling and career demands of students, and there are inherent opportunities for adult study with online and hybrid courses. While we found college GPA shares a positive relationship with adult learner persistence, our research did not find any of the traditional factors that are oftentimes considered for 18-22-year-old student persistence had any statistical significance with adult learning persistence. This conclusion leads us to believe that research has not come to understand adult learners as their own unique entity, nor has the literature adequately separated the context of adult learning from traditional students to understand the adult learner population.

Taking these findings into consideration, this capstone project offers a multifaceted recommendation for how to best serve this population. We make the following practical recommendations:

- Extend course offering times to evenings to meet scheduling needs of adult learners.
- Communicate hybrid education benefits to students and assess hybrid course outcomes as distinct from in-seat and online courses to determine success of outcome achievement.
- Expand program offerings in local career fields (specifically in the DSCC service-area, in health professions, STEM fields, and education) and expand program-type offerings into "stackable" credential programs.
- Expand office hours Monday-Thursday to ensure that adult learners in the service-area can reach campus after their work day ends (we recommend offices at DSCC remain open until 6:30 p.m.).
- Expand digital academic support services for adult learners, to include such programs as online tutoring, instant chat, communication through social media, to minimize the amount

of time adult learners need to be on campus outside classroom hours.

- Reconnect with former DSCC adult learners: it is critical that once DSCC builds a campus culture that supports adult learners, it is then communicated throughout the service-area to reattract those learners to higher education study.

Further, we make the following research recommendations for future consideration and investigation:

- Research online students each year to understand the population and the specific needs of online students.

- Re-evaluate the context in which adult learners are understood as a unique population, and not through the lens of traditional students.

Through both practical and theoretical attempts to further understand adult learners and their persistence, higher education may be able to make grounds in not only allowing more adults to pursue higher education study, but also to allow these students to be successful – by their own definitions of success.

Higher Education: Adult Learner Success

The number of adult learners in higher education has increased significantly since the 1980s (Chartrand, 1992; Hardin, 2008; Wyatt, 2011); adult learners are now estimated to comprise approximately 40 percent of students in higher education (Gast, 2013; NCES, 2015). As highlighted by the Council for Adult and Experiential Learning Adult Learning in Focus Report, it is both necessary and difficult to define adult learners as they are a heterogeneous group and oftentimes the single commonality is that they are older than the traditional higher education student (between 18-24 years old) -- and as such, challenge institutions to find various means to satisfy their diverse needs (Anderson, 2011; Chickering, 1981; Wyatt, 2011). Due to the "traditional" label for 18-22-year-old students, adult learners are oftentimes designated "nontraditional, commuter, or reentry" (Sissel, Hansman & Kasworm, 2001, p. 19), meaning many programs to serve adults are adaptations of well-established traditional-student programs (Kimmel, Gaylor, Grubbs & Hayes, 2012).

Sissel, Hansman and Kasworm (2001) further asserted that adult learners are considered alternative students and are not the priority of institutional initiatives, funding, programming, or reporting. In fact, Turner, et al (2007) contended that oftentimes "institutional actions and strategies are neither generally systemic nor empirically based" when working with adult learners (p. 7). As such, adult learner needs are often overlooked or unknown by many higher education institutions.

As a roadmap for action to serve adult learners, Cross (1981) believed institutions must effect adult-friendly changes and revisions through self-evaluation to determine if adults are deterred by institutional characteristics or requirements. Because they meet many nontraditional characteristics, adult learners comprise a large subpopulation of nontraditional learners.

Choy (2002) defined nontraditional students as those having at least one of the following characteristics: delayed enrollment in higher education by a year or more, full-time employment, part-time college attendance, financial independence, has dependents, is a single parent, or completed high school through alternative certification (example: GED). Some researchers interchange adult and nontraditional learners as one and the same, stating age as the defining characteristic between traditional and nontraditional students (Wyatt, 2011). Other authors concluded that there is no absolute and clear definition of nontraditional students (MacAri, Maples & D'Andrea, 2005).

Figure 1:

Nontraditional Student Characteristics
Delayed enrollment
Full-time employment
Part-time college attendance
Financially independent
Caretaker for dependents
Single parent
Completed alternative high school certification

Adult learners may have as few as one of the above-mentioned characteristics, or possess all. It is important to note here, as Chao (2007) made clear, higher education defines adult learners by their risk factors to learning - indicating an incongruence between adult learners and how higher education perceives its mission to serve adults. Institutional culture must adapt and accept the place of adult learners in higher education and develop programs and practices that are aligned with adult learner needs. With such a diverse population

making up the "adult learner" context, research and understanding into this population is limited. In 2011, the American Association of Community Colleges Commissions released a report regarding a national completion agenda for the United States. This report calls for community colleges to be more engaged and accountable in promoting adult learner completion in higher education (McPhail, 2011). The number of adult learners in American higher education is difficult to pinpoint since institutions are not required to report this data to IPEDS (Ma & Baum, 2016), but it is known that there are over 1 million adult learners in American Association of State Colleges and Universities (AASCU) member institutions alone (Pelletier, 2010). Considering the significant number of students this affects and a national call to promote adult education and Tennessee's proactive strategy to create new opportunities for adult learning, community colleges in Tennessee need to be ready to answer this call. In preparation for the expected influx of Reconnect adult learners in the fall of 2018, Dyersburg State Community College (DSCC) commissioned a project to evaluate its adult programs to determine readiness levels of this population of students.

Overview of Study

Taking into consideration the research foundation on adult learner success and based on DSCC's current needs and the project scope, the following research questions have been developed:

1. What characteristics are significant predictors of adult students persisting to a second year at DSCC?
2. What academic programs do adult learners in the Dyersburg service-area report being interested in studying?
3. What are the academic and support services preferences of adult learners at DSCC, and how do the current offerings reflect those preferences?

Through the scope of these three research questions we investigated the extant literature on adult learners and persistence. Further, this capstone project utilized this research base to study DSCC's adult learner population, programs, and offerings.

It is important to note this is the second year DSCC has partnered with Peabody College in a capstone project. During the 2016-17 academic year, a Peabody capstone team evaluated DSCC's admissions, communication and marketing strategies, and made recommendations for improvement to processes and communication students receive through the admissions process.

Conceptual Framework: Adult Learners in Higher Education

It is the responsibility of institutions serving adult learners to understand these populations and create persistence and success programs that assist adults (Bulger & Watson, 2006; Spellman, 2007; Wyatt, 2011). Further, each higher education institution serves a unique population of students, meaning each institution is responsible for discerning its student population and determine factors, programs and initiatives that foster its students' success (Chao, 2007; Kemp, 2001).

Many community colleges are leading the charge to educate nontraditional students (Valadez, 1993). As such, it is important for these institutions to understand the backgrounds of their student populations. Many nontraditional students do not understand how higher education works, nor do they have support systems in place that aid in understanding higher education - placing nontraditional students at a disadvantage when attempting to navigate the educational system (Valadez, 1993). This advance knowledge of higher education is an example of social capital, defined by Putnam (1995) as the "network, norms, and social trust that facilitate coordination and cooperation" (p. 67).

Just as important as social capital in understanding higher education adult learner persistence is cultural capital; Lareau (1987) best explained cultural capital as related to socioeconomic status, where higher socioeconomic status learners possess cultural capital that is aligned with higher education institutional values; lower socioeconomic learners have cultural nuances that are in many ways at odds with the values higher education emphasizes. This notion was confirmed by Valadez (1993), who stated that adult learners do not have the cultural capital to understand the higher education setting and thus struggle to adapt to college.

While community colleges are most likely to serve nontraditional and adult learners, thus serving those students most likely to have lower social and cultural capital, persistence rates are also found to be lower among community college students than those attending other types of institutions (Wells, 2008). Similarly, Wells (2008) found the higher social and cultural capital a student possesses, the more likely that student is to persist from the first year of college to the second. Researchers have noted that it is possible institutions have not proactively attempted to adapt their institutions to alternative cultural and social value systems, possibly making institutions "complicit in supporting these disparate outcomes" (Wells, 2008, p. 30). Valadez (1993) found that students' ability to achieve social mobility was either aided or harmed by their interactions with higher education systems. Therefore, it is imperative that higher education institutions, especially community colleges and other institutions that serve nontraditional students, find means to incorporate adult learners into the institutional way of life.

It is generally accepted that many adults pursue higher education to increase employment opportunities, expand career options, or receive basic education services (Bulger & Watson, 2006; Chickering, 1981). Less understood are the specific needs of adult learners, as this facet of adult learning has not been highlighted extensively in the literature (Hanniford, 1993). Despite the existing body of scant research, a basic framework may be developed, utilized and expanded upon by current researchers, and by combining this framework with campus-specific research, it becomes possible for

institutions to develop strategies for adult learner success (Anderson, 2011). It is imperative that these strategies are iterative and improve as our understanding increases.

Summarizing previous research finds three underlying challenges for adult learners in higher education - their own "iron triangle" to successful study: barriers, role dissonance, and risk factors (Bulgar & Watson, 2006; Cross, 1981; Graham & Donaldson, 1999; Hanniford, 1993; Hardin, 2008; Keith, 2007; Ritt, 2008; Spellman, 2007; Van Noy & Heidkamp, 2013). Individual institutions must discern these challenges within the context of their campus through utilizing a research-based approach combined with institutional and local context to inform policy and practice.

Figure 2: Adult Learner Challenges: The Iron Triangle

Barriers

One prevalent understanding of adult learners in higher education is through various barriers models (Cross, 1981; Hanniford, 1993; Hardin, 2008; Keith, 2007; Kimmel, Gaylor, Grubbs & Hayes, 2012; Ritt, 2008). Variations of these models, compiled in Figure 3, undergird the distinct barriers adult learners face in higher education. These commonly understood barriers, as labeled by Cross (1981), are either dispositional, situational and institutional. Situational barriers are those barriers t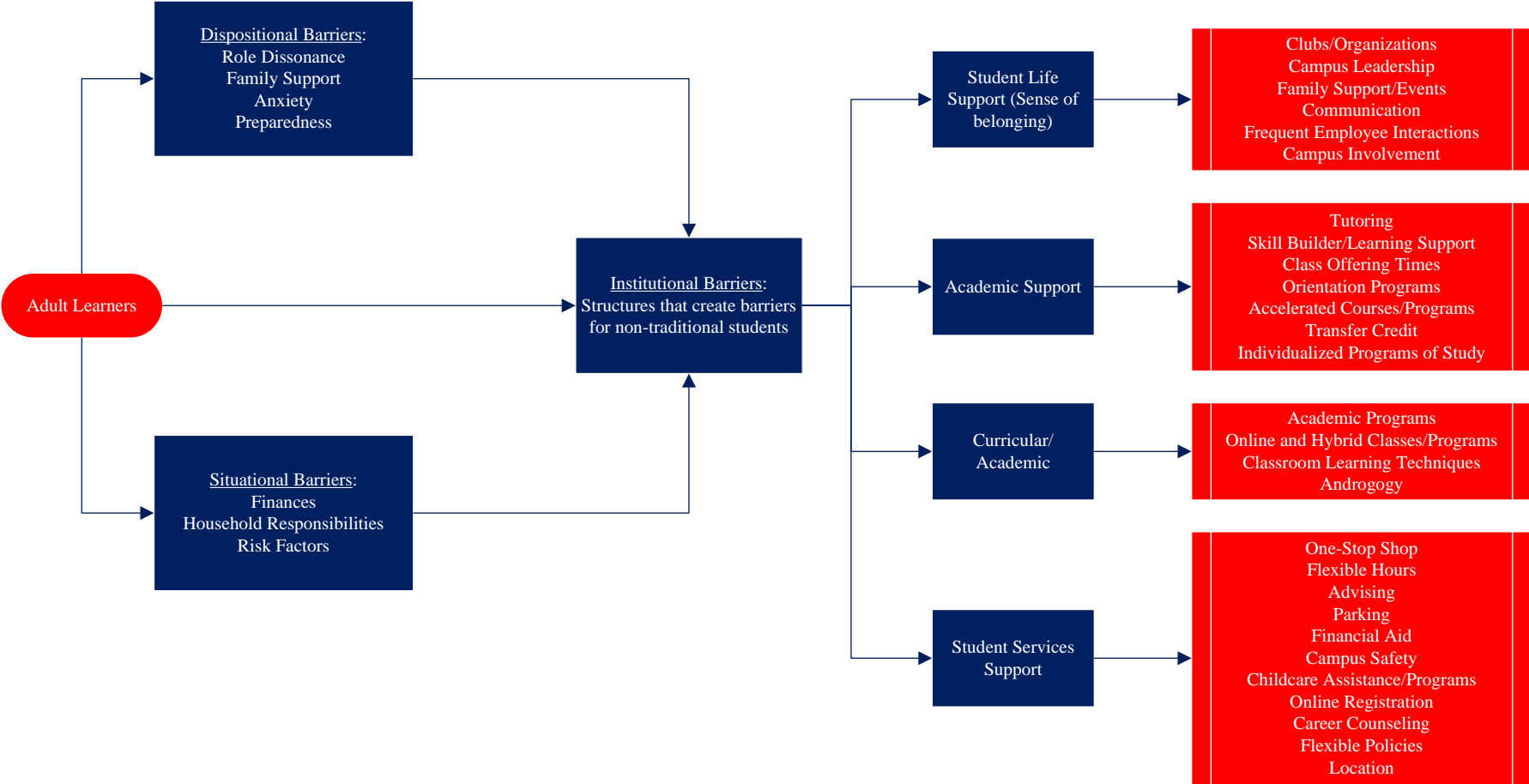hat exist in a student's life at a given point in time, such as multiple conflicting roles and responsibilities (role dissonance), financial status, and family supports (Cross, 1981). Dispositional barriers are risk factors defined as self-perceptions or beliefs one has about his/her ability to learn, such as low academic confidence or anxiety about learning (Cross, 1981). Both situational and dispositional barriers are external to higher education institutions and are thus mostly outside institutional control. But, institutions may still implement programs that complement these barriers as advantages as opposed to further exacerbating them.

Role Dissonance

The above-mentioned barriers oftentimes exist due to the multiple roles of adult learners: spouse, parent, employee, caretaker, and/or student. These multiple and generally conflicting roles result in role dissonance, defined by Brown (2002) as "the difficulties of inadequate role preparation and role overload" (p. 70). Chao (2007) concluded that because of these many roles and demands, adult learners "find it hard to free up time and dollars to attend school intensively" (p. 13). Hanniford (1993) reported that the effect of role dissonance is not clear on adult learners, but that it is a major cause of adult student early departure. Many adult learners, especially employees and parents, find school competes with their other priorities regarding time, energy, and finances, making it difficult for them to adjust to the additional demands of education (Choy, 2002; Fairchild, 2003; Hanniford, 1993). Although institutions cannot change the multiple roles with which adult learners contend, higher education may implement practices and policies that reduce role strain and the burden postsecondary education may unnecessarily place on adult learners.

Adult Learner Barriers to Education Framework

Dispositional Barriers: Role Dissonance, Family Support, Anxiety, Preparedness	

Adult Learners

Institutional Barriers: Structures that create barriers for non-traditional students

Situational Barriers: Finances, Household Responsibilities, Risk Factors

Student Life Support (Sense of belonging) → Clubs/Organizations, Campus Leadership, Family Support/Events, Communication, Frequent Employee Interactions, Campus Involvement

Academic Support → Tutoring, Skill Builder/Learning Support, Class Offering Times, Orientation Programs, Accelerated Courses/Programs, Transfer Credit, Individualized Programs of Study

Curricular/Academic → Academic Programs, Online and Hybrid Classes/Programs, Classroom Learning Techniques, Androgogy

Student Services Support → One-Stop Shop, Flexible Hours, Advising, Parking, Financial Aid, Campus Safety, Childcare Assistance/Programs, Online Registration, Career Counseling, Flexible Policies, Location

Notes: Authors adapted from the following sources: Cross, 1981; Ekstrom, 1972; Fairchild, 2003; Hardin, 2008; Keith, 2007; Mercer, 1993; Ritt, 2008.

Unfortunately, there is little research that explains how work and family impact adult student persistence levels (Hanniford, 1993). Previous researchers have attempted to apply Tinto's models to adult learner populations but have been unable to fully understand the adult learner through this means (Ashar & Skenes, 1993; Hanniford, 1993; Wyatt, 2011). Ashar and Skenes (1993) underscored the complications in applying Tinto's model to adult learners; adult learners' contact with a campus is limited due to multiple priorities and roles, and their educational needs and purposes for studying differ from traditional students. Due to these differences, the authors found that while Tinto's model may assist in bringing adult learners to campuses, it does not help retain these students. It is not fully understood what does help retain adult learners.

Other research has focused on adult learner external commitments, such as family and employment, since there appears to be a relationship between these commitments and persistence (Hanniford, 1993). Dismayingly, Hanniford (1993) admitted that there is "no national-level evidence" that highlights how much competing roles affect adult learner success and persistence (p. 14). Through this research, though, it has been found that many adult learners see themselves as employees first and students second as they work full-time and attend college part-time (Chao, 2007; Graham & Donaldson, 1999; Spellman, 2007; Van Noy & Heidkamp, 2013). In fact, one study found that two-thirds of adult learners consider themselves employees first and students second (Choy, 2002), meaning the education of adult learners must take place with their schedules and personal lives in mind. Complicating this dynamic are full-time employees who are both part-time students and responsible for family obligations -- they suffer even higher

barriers to completing their education (Berker, Horn & Carroll, 2003).

Historically, most institutions developed programming around full-time traditional students -- leaving an inability for part-time adult learners to balance the demanding post-secondary education role. Chao (2007) found that employees who pursue academic study are at considerably higher risk of not persisting through their first year of study. Mercer (1993) constructed the reasons adult students cited for dropping out in rank order: family responsibilities, lack of time, job responsibilities, and finances.

While critics of adult learner programs cite lack of educational motivation in adults as a reason to avoid offering adult-friendly programs, research has found that enhancement of employment potential may be a stronger motivator than traditional student self-development and growth (Ashar & Skenes, 1993). Further research has highlighted that oftentimes work and family obligations, not lack of desire or motivation, prevent adults from attending classes full-time (Spellman, 2007). Cross (1981) further insisted that by embracing adult learners in higher education, institutions "would be pushed to be responsive to a public demanding new development, better services, and improved products, much like many other industries that have responded to new demands from society, such as the food or sports and fitness industries" (p. 251).

Adult learners are more aligned with career culture than academic culture (Kerka, 1995). Ashar and Skenes (1993) further posited that creating a "strong career culture" may help retain adult learners (p. 92, 98). This idea was confirmed by Brown (2002), who concluded that a career culture creates a feeling of academic "fit" or integration for adult learners (p. 71). Wlodkowski, Mauldin and Gahn (2001) undergirded adapting academic programming, such as accelerated courses and programs, flexible course

scheduling, and online/hybrid course options as means to serve busy adult learners who are juggling multiple roles.

Research into distance education conducted by Choy (2002) found that adult learners are more likely than traditional students to participate in distance or online learning programs. Studies have found other strategies, such as offering evening and weekend courses (Bulgar & Watson, 2006), that serve as programmatic solutions to address adult learner time constraints. In support services, programs that create one-stop-shops, simple, or coordinated processes for adult learners show the most promise in benefitting adult learner persistence and success (CAEL Adult Learning in Focus report; Cross, 1981; Kasworm, 2003;).

Risk Factors

The definition of "at-risk" has been broadened as student populations have become more diverse in higher education; today, "at-risk" is defined by Bulger and Watson (2006) as any limitation on learning (p. 24). For adult learners, these limitations often fit into three categories: background characteristics, internal characteristics and environmental factors (Figure 4) (Bulgar & Watson, 2006) - factors that typically fit within situational or dispositional barriers. These categories include such factors as age, gender, marital status, low socioeconomic status, first generation college student, single parent family of origin, high-risk in high school, and returning for study after extended periods of absence (Anderson, 2011; Bulgar & Watson, 2002; Chartrand, 1992; Wlodkowski, Mauldin & Gahn, 2001). And while these factors are also unchangeable by higher education, it is important to understand them so institutions may implement policies and programs that address these risks.

Figure 4: Adult Learner Risk-Factors:

Background Characteristics	Internal Characteristics	Environmental Factors
Poor previous educational experiences	Values placed in education (interest, importance, utility)	Access to student support services
Technology proficiency	Unrealistic goals	Flexible course offerings
Socioeconomic status	Study anxiety	Travel time and costs
Marital status	Internal locus of control	Study environment
First-generation college	Low self-confidence	Institutional support
Length of study absences		Needed academic programs
Number of Dependents		
Lack of preparation		

*Adapted from Bulgar & Watson, 2006, p. 29; Wlodkowski, Mauldin & Gahn, 2001, p. 11; Cross, 1981, p. 133

Another risk factor that has more recently been identified with some adult learners is a lack of technological skill or ability (Bulger & Watson, 2006), which inhibit students' ability to engage with technology both inside and outside the classroom.

It is important to note that many of the same characteristics defined as at-risk are the same characteristics as being an adult learner, as defined by Choy (2002), meaning the very aspect of being an adult learner is related to lower persistence rates. This may be attributed to the fact that adult learners are still understood through the context of traditional students, and are identified through their differences from traditional student populations. This current limitation to most adult learner inquiry highlights the misconceptions higher education has regarding adult students.

As such, Spellman (2007) argued that adult learner populations are almost always classified as "at-risk" of failing or dropping out of college (p. 65, 69). Further, it has been found that nontraditional students are less likely to complete their educational goals than traditional students (Choy, 2002). Prior research has indicated that introducing adult students to higher education through low-threat situations may increase their self-confidence and lower anxiety about studying (Cross, 1981). Ross-Gordon (2003) affirmed that adult students are often anxious about returning to school, due to factors such as length of time since last study, lack of preparation, or previous negative educational experiences.

Possible low-threat situations that aid adult learners may include remedial education, career counseling, orientation programs and courses, among many others (Cross, 1981). Regarding the multiple time demands adult learners face, Bulger and Watson (2006) recommended flexible schedules and course offerings, while other research has focused on flexibility of support services (CAEL Adult Learning in Focus report; Cross, 1981; Kasworm, 2003). Previous studies have found that adult student risk factors are complex and multifaceted, making it difficult for institutions to address holistically (Turner, et al, 2007). But the research has clearly identified adult learners as less likely to persist than traditional learners, and more likely to drop out of school within their first year of study (Choy, 2002). More recent research into adult learner risk factors, both in aggregate and at the institutional level, is necessary for higher education to understand the "why" behind adult learner persistence and establish policies and programs that remove "at-risk" barriers.

Institutional Barriers

At variance with these external barriers are institutional barriers. These barriers are those institutional practices, policies or programs that hinder adult learners' ability to study, such as limited course scheduling, restrictive attendance requirements and lack of extended office hours (Chao, 2007; Cross, 1981). As such, these barriers are within the control of institutions to alter, update or revise as necessary.

Higher education institutions oftentimes are unaware of the barriers created for non-traditional students; most academic programs have not been redeveloped substantially to meet adult learner needs (CAEL 2017; Chao, 2007; Chickering, 1981; MacKinnon-Slaney, 1994). Regardless, colleges are called to research and explore adult learner success and persistence needs and adapt programs and services to remove barriers and complement those needs (Anderson, 2011). It is important to note institutional barriers can be subdivided into four basic constructs: student life support, academic services support, curricular/academic programs, and student services support (Brown, 2002; Bulgar & Watson, 2006; Chaves, 2006; Sissel, Hansman & Kasworm, 2001).

Predominantly, as highlighted by Sissel, Hansman and Kasworm (2001), support programs for adult learners are often constructed through a myriad of disjointed programs, making it difficult for adult learners to navigate the system. Smith and Bailey (1993) corroborated this assertion and further stressed that student experiences must be tailored to fit individual student needs.

In sum, to fully create inclusive campuses, institutions must take a holistic view of their programming and how it applies to distinct bodies of adult learners, and must implement action plans to improve student experiences. As complex and loosely coupled

organizations, higher education institutions serve adults through several, oftentimes disconnected, means due to the specific needs of traditional learners. Reviewing these areas is necessary to understand their interconnectedness. As identified above in Figure 3, student life support is the next important factor to identify in supporting adult learners.
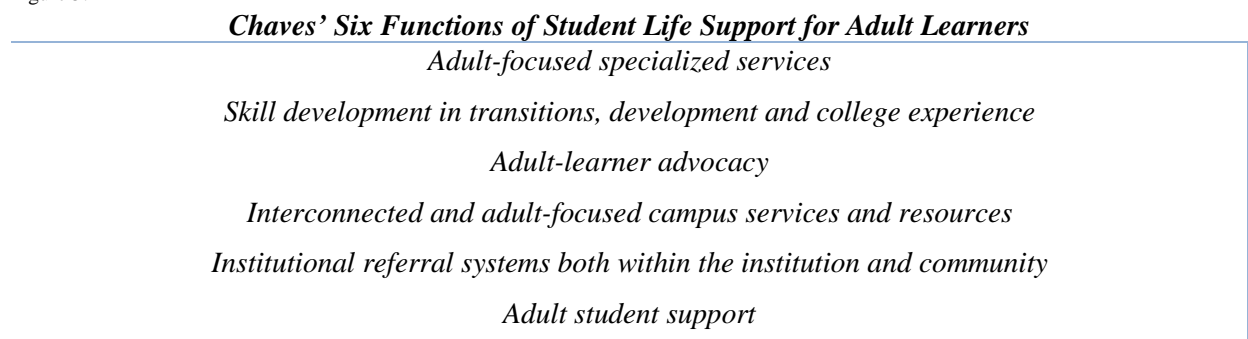
Student Life Support

Brown (2002) noted student life support includes programs that increase student sense of belonging such as proactive communication, clubs and organizations, family events, and opportunities for campus involvement. Research posits "the social aspects of education are the foundation for building identification with the role of university student" (Gilardi & Guglielmetti, 2011, p. 47). To counter this assumption, Ashar and Skenes (1993) contended that since adult learners spend little time on campus outside of classes and usually establish relationships off-campus, they are less likely to need traditional student life support mechanisms.

In contrast, Gast (2013) believed that adult students are likely to join an adult-student only student organization. This argument was also offered by Wyatt (2011) who added that adult learners felt that better communication on campus would aid them in being more engaged in adult-specific student organizations. Adult learners spend less time physically on campus due to competing resources for their time, such as family and work obligations (Graham & Donaldson, 1999; Wyatt, 2011). Wyatt (2011) discovered that adult students do not feel the need to engage in activities on campus, and most interactions occurred as part of a class. Taking this into account, institutions have recently begun to experiment with digital sources and social media, such as Facebook and Twitter, to enhance adult learner support and engagement (Gilardi & Guglielmetti, 2011).

Carney-Crompton and Tan (2002) found that in-person support networks within cohort models and with other students engender student sense of belonging, while Chaves (2006) observed six functions of student life support for adult students: adult-focused specialized services; skill development in transitions, development and college experience; adult-learner advocacy; interconnected and adult-focused campus services and resources; institutional referral systems both within the institution and community; and adult student support (Figure 5). Chaves (2006) defended these supports as necessary components to reduce adult learner "feelings of marginality and enhance their sense of mattering" (p. 3).

Figure 5:

Chaves' Six Functions of Student Life Support for Adult Learners

Adult-focused specialized services

Skill development in transitions, development and college experience

Adult-learner advocacy

Interconnected and adult-focused campus services and resources

Institutional referral systems both within the institution and community

Adult student support

Research is limited regarding the campus life supports necessary to promote adult learner success. Thus, what is known often conflicts and is difficult to interpret. It is worth noting this topic is mentioned enough in the extant literature to conclude that it deserves a place in any institutional evaluation of adult learner success (Chaves, 2006; Gilardi & Guglielmetti, 2011).

Academic Support

Academic support services for adult learners consist of tutoring, orientation programs, class offering times, and accelerated programs, among others. These support mechanisms create additional academic assistance and flexibility options. Tutoring and adult-focused orientation programs may alleviate adult learner academic deficiencies, familiarize adults with the higher education setting, and assuage student learner anxieties regarding academic study (Brown, 2002; Howell, 2001). Chaves (2006) added that assessment of adult learner academic ability may help place students in appropriate courses and study sequences. Gast (2013) cited an example of tutoring support geared specifically to adult learners through Indiana University-Bloomington's "online library of video tutorials… to better serve students who do not have time to meet with a tutor" (p. 23).

Previous research has found that adult learners have academic needs for support that may far outpace the needs of traditional learners (Conrad, 1993). Additionally, Ruffalo Noel-Levitz reported in its 2015-16 National Adult Learners Satisfaction-Priorities Report that adult learners place their highest priority in flexible programs and support that fit their lifestyle needs, balancing work, family, student and personal lives. This is echoed by research completed by the Lumina Foundation which found that adult learners generally look for convenient and flexible access to higher education (Turner, et al, 2007; Wyatt, 2011). Previous studies have found that because of conflicting priorities and demands on their time, adult learners prefer accelerated and shorter length programs (Chao, 2007). Conrad (1993) further asserted this with the recommendation, "a general principle might be to provide maximum services that are easily accessible" (p. 3). An example of such a program developed for adult learners is Tusculum College's cohort programs that are taught off campus, have small (12-15) student cohort groups, predetermined required courses and a set sequence, and courses that take place in the evening to facilitate adult working schedules. According to Tusculum, 86 percent of students in this program are retained through completion, and its success is touted by strong industry tuition reimbursement (The College Board, 1990).

Carney-Crompton and Tan (2002) confirmed that institutions must evaluate their delivery and structure of courses to determine if they meet adult learner needs. Due to the conflicting demands and priorities of adult learners, it is imperative that institutions develop flexible course and program offerings (Conrad, 1993; Van Noy & Heidkamp, 2013). One potential facet of adult programming is "multiple entry, exit, and reentry points, including more frequent start times throughout the year" (Chao, 2007, p. 14). Another feature proposed by Chao (2007) is the restructuring of traditional programs so they are comprised of short, credential granting modules (such as multi-course certificate programs) that roll into larger degree requirements so adult learners can start and stop and gain credentials as needed, but still be able to work toward larger degree goals. Through initiatives such as these, institutions may create programs that are "adult-friendly" and provide support needed for success.

Curricular/Academic Programs

Examples of academic program support include programmatic and in-class experiences such as online courses and programs, academic degrees and certificates, and adult learning strategies in the classroom -- defined as andragogy (Ross-Gordon, 2003). Andragogy is based on the premise that adults need to understand the "why" behind their learning, meaning the students need to be an active part of the curriculum development for their learning (Kenner & Weinerman, 2011; Knowles, Holton & Swanson, 2015). Knowles, Holton and Swanson (2015) further argued that adults in the United States maintain a certain level of autonomy, and maintaining this sense of autonomy is important to adult learning. As stated previously, life events usually bring adults to higher education; higher education institutions have struggled with ways in which to serve diverse levels of learner readiness (Kenner & Weinerman, 2011; Knowles, Holton & Swanson, 2015;).

Knowles, Holton and Swanson (2015) found that "adults generally prefer a problem-solving orientation to learning, rather than subject-centered learning," and "they learn best when new information is presented in a real-life context" (p. 181). Thus, to optimize adult learning institutions are obligated to find means to teach experiential curriculum. While helpful in applying learning to adults, andragogy suffers limitations in that it does not apply to all adult learners because external factors also contribute to adult learning (Cross, 1981; Knowles, Holton & Swanson, 2015). This leaves a clear need for capable instructors who may adapt their classrooms to the learning needs of students on a case-by-case basis through learning style inventories (Cross, 1981; Wyatt, 2011). Unfortunately, developing adaptive classroom techniques based on individual student needs makes it almost impossible to create generalizable programs beyond loose adaptive technique recommendations. Kenner and Weinerman (2011) further argue that by understanding the background and learning styles of diverse populations of adult learners, instructors may be able to "enhance the integration of the adult learner into the collegiate environment" (p. 2).

Many adult learners balance numerous priorities, so online courses and flexible class offering times - including hybrid courses - create opportunities for those students to balance their busy schedules (CAEL Adult Learning in Focus report; Spellman, 2007). Hybrid courses and programs were defined by Gast (2013) as courses and programs that entail both online and in-seat coursework, thereby granting greater class-time flexibility but not relying solely on online technology. Prior to the rapid growth of mainstream technology and internet access, early adaptations of flexible and distance education were remote or distance programs that had courses on-site at employing companies or other agreed upon sites; these programs had varying degrees of success (Kane & Rouse, 1999). Now that technology has caught up to the needs of digital and online learning, robust courses and programs may be developed using strictly an online platform. Still, Van Noy and Heidkamp (2013) determined that many institutions lack flexible programming for adult learners, thereby increasing the difficulty in establishing adult learner persistence. Reforms in online courses and technologically-enhanced course offerings have created convenient offerings that benefit adult students, while program alignment with local economic and labor-market needs benefit low-skilled adults and displaced workers through local workforce development (Van Noy & Heidkamp, 2013).

As previously stated, many adult learners engage in higher education study to advance - personally and professionally

(Choy, 2002). The 2015-16 Ruffalo Noel Levitz National Adult Learners Satisfaction-Priorities report identifies 89 percent of adult learners in community colleges enroll based on the availability of their desired program. To this end, academic programs geared toward adult learners should focus on subject areas relevant to adults. Research highlighted by Choy (2002) determined that 73 percent of adult learners attend school to increase knowledge for personal or professional advancement, while only 37 percent study to gain knowledge required for their current job. Similarly, data collected by Berker, Horn and Carroll (2003) established that 85 percent of adult students are studying for professional advancement and 36 percent are studying for a currently held position (Figure 6).

Figure 6: Adult Learner Motivations for Post-Secondary Study (in percentages)
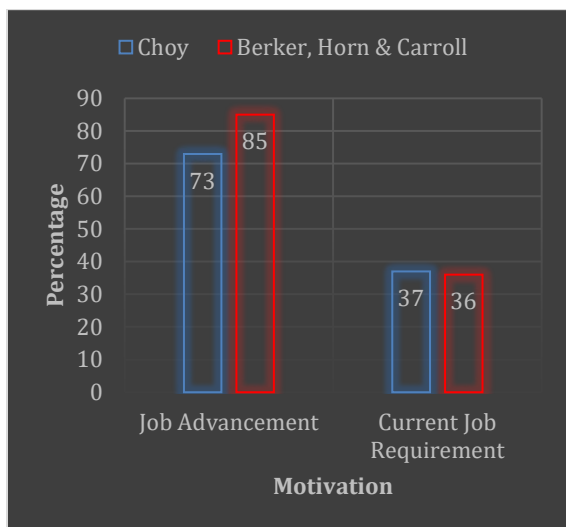
Currently, institutions that provide vocational and technical programs attract large numbers of adult learners due to the focus of these programs on adult academic needs (Chao, 2007). Institutions must consider adult learner educational needs when developing curriculum and programs. An example of an institution doing so successfully is Oakton Community College. Through its liaison with the business community the institution is involved in several relevant professional and technical societies and associations. Oakton Community College not only stays informed regarding industry needs, but responds quickly to those needs. Additionally, Oakton's Business Conference Center partners with local businesses, and members of the partner associations teach for Oakton Community College, creating a network that works together for adult learners (The College Board, 1990).

Online Education

Noting technological advances and the distinct role technology plays in educational access, it is important to analyze online education in any review of adult learners. Online education has become one of the many hallmarks of nontraditional and adult education and is widely believed to aid adult learner access and success. Considered flexible and convenient, online education has become particularly attractive to adult learners (Chao, 2007). As Park and Choi (2009) highlighted, though, online education is oftentimes a mixed bag, offering convenient and flexible course scheduling for adult learners who balance many roles. But is also suffers with high dropout rates and may be quite disastrous for ill-prepared students (Spellman, 2007). Gast (2013) detailed an Eduventures study that found only 38 percent of surveyed prospective adult learners preferred online study as opposed to in-seat. Research also highlights that not all adult learners benefit from online education due to issues such as technological shortcomings, lack of internet access and desire for in-seat interactions (Bulgar & Watson, 2006).

Rather than serving as a standalone solution to assist adult learners, online education is at best a portion of a larger institutional adult learner success program. A relatively new component of adult learner barrier models is that of technology.

According to Muse (2003), technology can prove either an opportunity or a hindrance to students, depending on their comfort and knowledge with technology utilization. Conclusions in online study and its applicability to adult learner success highlight that adult students who are ready to learn in this format and have supports in place are more likely to be successful in online study (Muse, 2003). Students who are not comfortable with the online setting or who do not possess the technological skills to succeed may benefit from digital literacy and technology tutoring before undertaking online education. Quite possibly, there may always be a distinct subset of adult learners who prefer in-seat courses. Institutions must understand their adult learner characteristics and needs when implementing online programs as part of a larger adult support program.

Student Services Support

Student services are campus life-related supports and include such accommodations as flexible office hours, academic advising, campus safety, flexible policies, child care assistance, and career counseling. A prior study conducted by Keith (2007) found that working adult learners were less likely to utilize campus support services, so colleges must find alternative practices to offer support to students who otherwise cannot come to campus regularly or during normal office hours (Gast, 2013). Drexel University offers one example of innovative support services to reach adult students in its DrexelOne Mobile which allows push notifications on any relevant campus activities such as grades, classroom changes, and schedules, to students on registered mobile devices (Oblinger, 2003).

Spelman (2007) offered face-to-face examples of how institutions can improve support services for adult students through flexible mentoring programs, faculty engagement with students, and pre-enrollment counseling. Many recent student support services focus around the time constraints adult learners experience in college study (CAEL Adult Learning in Focus report; Cross, 1981; Kasworm, 2003), and work to build support programs that are seamless and simple for adult learners.

By recognizing both the distinct services and overlapping facets of multiple support services, institutions may be able to define intended goals and outcomes, and be able to coordinate services to achieve those goals. It has been argued that while institutions cannot change the personal factors adult learners bring to their educational experience (such as family and employment), institutions may take a holistic view of those factors and create support programming that complements those factors (Anderson, 2011). Anderson (2011) further proposed an institutional model in which support services are combined into one office serving as a cohesive unit - or one stop shop - that focuses on adult learner success and persistence rather than separate, distinct units (such as financial aid, registration and academic advising). Previous research determined that adult students are more likely to attend institutions with programs geared specifically to adults and in which college employees consider the time constraints of adult students in their interactions and expectations (Wyatt, 2011).

There are multiple means to serve adult students well, and institutions must determine through both internal and external research and application efforts how to do so. To successfully develop beneficial programs, it is necessary to take a deeper look at adult students' "iron triangle" of challenges -- barriers, role dissonance, and risk factors -- so institutions understand adult learner perspectives and address these in program and policy decisions.

Community Colleges

To understand adult learning in higher education, it is important to review the role community colleges play in both higher education and adult learning. Community colleges hold crucial and distinct roles in higher education, often serving as the means to educate the historically underserved in postsecondary education and providing much demanded workforce development education (Coley, 2000; Van Noy & Heidkamp, 2013; Wells, 2008). Pingel, Parker and Sisneros (2016) assert that "there are simply not enough traditionally-aged high school and college students to create the educated workforce required for the 21st century economy" (p. 1).

Through research recognizing the demand for more college-skilled workers, community colleges have become higher education's primary source of professional and technical postsecondary credentials (Van Noy & Heidkamp, 2013). These institutions serve many adult learners in their postsecondary education pursuits. Van Noy and Heidkamp (2013) further pointed to the longstanding tradition and mission of community colleges to prepare adult students for the demands of the economy and workplace. In embracing their institutional missions, many community colleges have created innovative and creative programs that stress flexibility and workforce needs to specifically serve adult learners. Figure 7 highlights several community college initiatives that have been developed for this purpose.

Figure 7: Examples of Community College Programmatic Initiatives to Serve Adult Learners:

Name of Initiative & Supporting Organization	Audience & Goals
Shifting Gears Joyce Foundation, Center for Law & Social Policy	Adults with low skills: create "stackable" credential pathways that combine basic skills with professional/technical education
Wisconsin Shifting Gears: Regional Industry Skills Education	Adults with low skills: pathway credentials that are tied to local high-demand jobs
Courses to Employment (C2E) Aspen Institute	Adult with low skills: community partnerships between education and nonprofits that are tied to local high-demand jobs
Plus 50 & Plus 50 Completion American Association of Community Colleges	Adults over age 50: professional pathway credentials tied to healthcare, education, and social services
Encore College Initiative Civic Ventures	Older adults: professional pathway credentials that provide flexible scheduling options with community partnerships
Career Pathways and Career Counseling for the 50+ Workforce Council for Adult & Experiential Learning	Adults over age 50: community colleges identify workforce demands, develop job seeker resources, and train career counselors

*Source: Van Noy & Heidkamp, 2013, p. 10-11

Kane and Rouse (1999) attributed the appeal of community colleges to their low attendance costs: "the average tuition is less than one-half that at public four-year colleges" (p. 66). This fact was echoed by Van Noy and Heidkamp (2013), who

concluded that community colleges provide a "relatively cost-effective venue" for adult learners to achieve their postsecondary credential goals (p. 24).

Community College Averages: By the Numbers

Number of total college students	30%
Number of Total Postsecondary Education institutions	25%
Faculty that teach part-time	60%
Combined student body:	
White	49%
Black	14%
Hispanic	22%
Students at least 25 years old	16%
Students at least 30 years old	28%
Program Completers	33%
Certificate completers	8%
Associates completers	14%
Bachelors Completers	12%

*Source: Ma & Baum, 2016; Van Noy & Heidkamp, 2013

That said, many financial challenges remain for adult learners. Federal limits on student loan borrowing are relatively low, especially for adults with dependents and families to provide for, meaning student loans may not be sufficient to cover basic living expenses on top of tuition costs (Kane & Rouse, 1999). Pingel, Parker and Sisneros (2016) found that these financial limitations restrict student success, and in worst cases, prevent adult learners from enrolling in postsecondary education completely. To continue serving adults, it is crucial that community colleges have means to support their learning through financial incentives that balance adult learners' multiple financial demands and obligations.

In recognizing the needs of a more educated workforce and the financial complications for diverse students in postsecondary education, many states have created postsecondary funding policies for traditional learners. A few very proactive states have taken this premise further and implemented policies that fund adult learners who study in community colleges (Pingel, Parker & Sisneros, 2016). Adult community college funding policies are more the exception than the rule, however, and states must become more proactive in supporting this segment of the population if the United States is to meet its postsecondary completion goals.

Often part of a necessary economic framework in communities, Van Noy and Heidkamp (2013) highlighted the need for community colleges to be responsive to local workforce demands and adapt quickly to meet those demands. Due to these quick-changing demands, community colleges are likely to employ more adjunct and part-time faculty than permanent and full-time faculty (Kane & Rouse, 1999). This type of faculty staffing is often met with criticism throughout higher education, but in the case of community colleges it is necessary to meet the fast-paced changing economic and workforce demands of their service-areas. It is interesting to note, however, that even with the necessity for community colleges to provide workforce training and education, the effect of community college study on future earnings is difficult to track and relatively unknown (Kane & Rouse, 1999; Ma & Baum, 2016). There remains little research on adult learners who have studied in community colleges. Despite this lack of research and understanding, Kane and Rouse (1999) contend that community colleges have oftentimes "been the gateway for those on the verge of enrolling in college": adult learners, those who cannot afford full-time study or four-year institutions, and those who need basic or remedial education (p. 81). Due to the potential for upward mobility for scores

of adult learners who may not have access through traditional four-year colleges, community colleges must be able to serve adult learners in unique and much-needed ways that contribute to the overall workforce and economic needs of our society.

Summary

Outlining the research, it may be concluded that multiple and complex life aspects combine with numerous risk factors to create a dilemma for institutions attempting to serve adult students. Within a realm of institutional barriers that creates a complex puzzle of strategies, initiatives and programs that may help or hinder adult learner success, many adult learners are left unable to complete their postsecondary study. Adult learners struggle to navigate higher education systems due to their unique needs, previously unknown to institutions, and slow-to-change systems that have not adapted to these needs. According to Spellman (2007), "to fulfill their missions, colleges need to offer a range of student support services, create specialized programs, and form community collaborations to reduce student barriers" (p. 71). Higher education leaders must learn to engage nontraditional students as this subset of college students is predicted to continue growing (Wyatt, 2011).

If higher education institutions wish to ensure adult learner persistence and success, they must adapt their practices and policies to fit adults' flexibility and convenience needs (Chao, 2007; Wyatt, 2011). It is important that higher education, as Cross (1981) made clear, "develop gourmet learners and… be responsive to their interests by providing a wide range of high-quality educational options" (p. 251). This would require that higher education put adult students first and change "current institutional paradigms to reflect one that considers the needs of all college students" (Wyatt, 2011, p. 12).

An innovative way to achieve this is by creating "menu" options for adult learners to choose the flexibility model that works for their busy and demanding lives - whether online, distance, accelerated, evening and weekend, pathways, short-term completion programs that lead to degrees, or drop-in and out programs (Chao, 2007). These programs and initiatives reduce institutional roadblocks and consider a multifaceted approach consisting of student life, academic, and service supports as necessary to foster adult learning. It is commonly believed that "learning is addictive; the more education people have, the more they want, and the more they will get" (Cross, 1981, p. 55). Thus, as Cross (1981) further asserted, it is crucial for institutions to create lifelong learners who can learn and continue to strive for learning opportunities throughout their entire lives. In accomplishing this, research may inform practices to aid institutions in evaluating adult learner programs, but institutions must engage in evaluation at an institutional level to understand their adult student populations and initiatives that would foster success. Turner, Breneman, Milam, Levin, Kohl, Gansneder and Pusser (2007) definitively stated, "research must continue to articulate the needs of at-risk adult learners and their daily experiences in college" (p. 7).

As one of the primary institutions adult learners choose for postsecondary study, community colleges are especially critical for serving adult learners. Community colleges must be at the forefront of educational initiatives and policies that create opportunities for adult learners to achieve postsecondary credentials. Not only is this necessary for local communities, but also for the strength of the United States economy and workforce in a rapidly changing and ever more technological world.

Contextual Analysis: Dyersburg State Community College

Dyersburg State Community College was established in Dyersburg, Tennessee, in 1969 as part of a Tennessee initiative to build a college campus within 50 miles of every Tennessee citizen. This initiative sprang forth from the 1957 Pierce-Albright Report, which underscored Tennessee's need for educational access throughout its citizens' lifetimes. Two additional campuses were later added to the DSCC community through successful expansion projects. The DSCC Gibson County Center was opened in 1991 and the DSCC Jimmy Naifeh Center was opened in 1992. Now the institution boasts 43 academic programs across six separate fields: STEM, social/behavioral sciences, health science, education, business, and communications/fine arts/humanities.

DSCC is a community college located in west Tennessee with a current enrollment of approximately 2800 students, largely located in a rural area with below average levels of education and per capita income (DSCC Vision and Mission webpage). The vision of DSCC is to "elevate the region's educational attainment thereby enhancing the quality of life in West Tennessee" (http://www.dscc.edu/about-dscc/about-dyersburg-state/vision-and-mission).
DSCC's mission statement further identifies itself as an open access, learner-centered institution that is focused on meeting the needs of learners in its service-area. DSCC offers associates degrees, certificate programs, and continuing education programs. These programs consist of both college-credit bearing and non-credit bearing courses. DSCC is accredited by the Southern Association of Colleges and Schools Commission (SACS) and maintains programmatic accreditation for its early childhood education, health information technology, emergency medical services-paramedic, nursing, and business programs.

DSCC recognizes that a significant number of its students and its service-area are made up of adult learners and proactively works to ensure success for these learners through its programming. A service-area for a Tennessee community college is the distinct geographical boundaries of the population that institution serves. In this case, DSCC serves seven counties surrounding its three campuses: Dyer county, Tipton county, Obion county, Lake county, Gibson county, Crockett county, and Lauderdale county. Since adult student populations are so heterogeneous, it is necessary to describe the adult population at Dyersburg State Community College to gain a basic understanding of the diversity within this population. The demographics of adult students at DSCC relatively reflects the rural service-area of northwest Tennessee, with one notable exception (explained in further detail below).

Figure 8: DSCC adult survey respondent characteristics
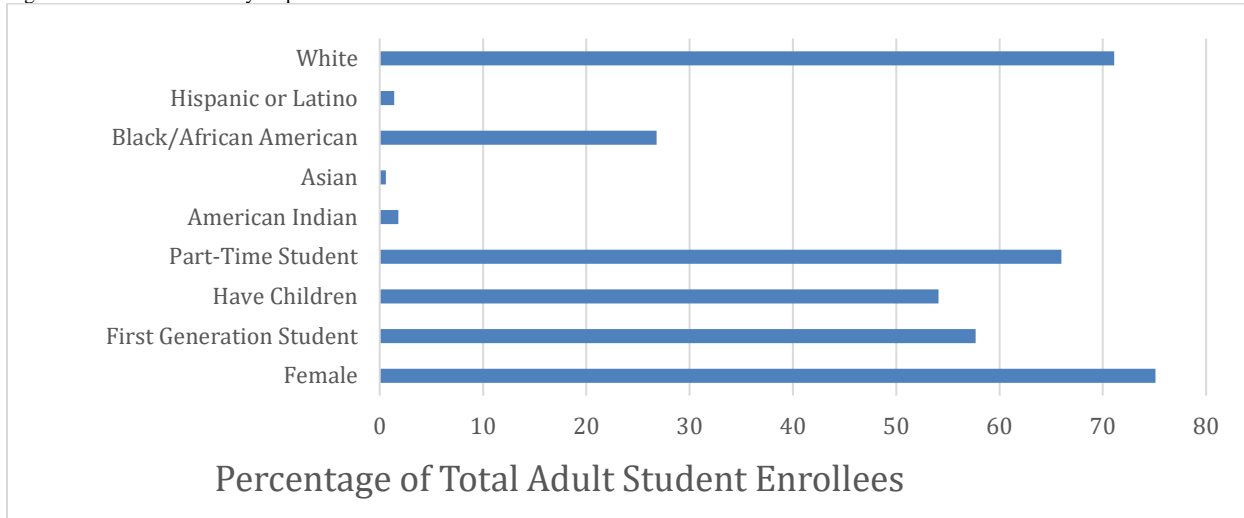
As Figure 8 shows, DSCC adult students who completed the Adult Learners Survey we developed and administered in fall 2017 are overwhelmingly female (75.1 percent), most are first generation students (57.7 percent), over half have children (54.1 percent) and two-thirds are part-time students. Further, DSCC students are dominated by two racial populations; 71.1 percent identify as White and 26.8 percent of adult learners identify as Black/African American, leaving only 2.1 of students identifying as Hispanic, Asian or other. In comparing the DSCC adult student population with that of the surrounding service-area, U.S. Census data from 2016 confirms that many of the DSCC adult learner ethnic demographics are similar to those of its service-area, with minor variations in ethnicity that can be explained by population variances in the seven-county service-area. One notable exception is the ratio of female adult learners to actual females in the population: while female students comprise 75.1 percent of adult learners, females only comprise 48.8 percent of the DSCC service-area population (Figure 9).

Figure 9: Dyersburg State Community College Service Area Demographics (by county)

|	Dyer	Tipton	Obion	Lake	Gibson	Crockett	Lauderdale	Total
White	83.1%	78.1%	86.9%	69.3%	79.5%	82.8%	62%	77.4%
Hispanic/Latino	3.4%	2.6%	4.2%	2.2%	2.7%	10.4%	2.6%	4.0%
Black/African American	14.1%	18.5%	10.8%	28.1%	18.3%	14.1%	35.0%	19.8%
American Indian	.4%	.5%	.3%	.5%	.3%	.5%	.8%	.5%
Asian	.7%	.7%	.4%	.2%	.3%	.4%	.8%	.5%
Female	51.9%	50.7%	51.6%	35.9%	52.0%	52.0%	47.6%	48.8%

Source: https://www.census.gov/quickfacts/fact/table/lakecountytennessee,gibsoncountytennessee,crockettcountytennessee/PST045216

Research finds that 84 percent of community college students are employed while attending college (Kane & Rouse, 1999). According to the DSCC Adult Learners Survey we administered in fall 2017, 71.2 percent of adult student respondents at DSCC are employed, with 51.3 percent of those students working more than 30 hours per week (Figure 10). Employment numbers thus suggest the typical DSCC adult student is fully employed while enrolled as an adult student, a fact that

has been underscored as a possible contributor to early departure. As such, student employment hours must be examined carefully to determine whether institutional scheduling changes may affect adult learner persistence and success.

Figure 10: Hours Worked per Week by Adult Students

Hours Worked per Week
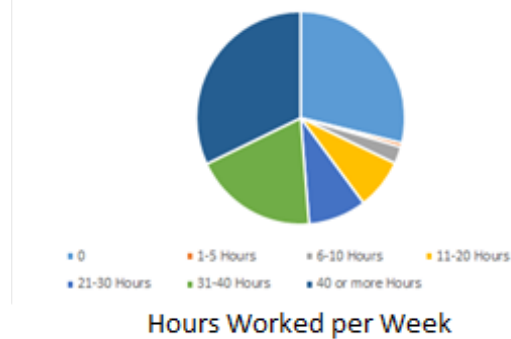
DSCC cites 2011 as its peak year of adult enrollments. Since 2011, the adult student population at DSCC has declined significantly. It is critical for DSCC's mission that common possible causes of this enrollment decline be eliminated. In analyzing the population trends in the DSCC service-area from 2010 to 2016, Figure 11 highlights these findings. Census data for 2010 were matched to 2011 DSCC enrollment numbers since census data do not exist for 2011. Even with the one-year discrepancy, this Figure clearly indicates DSCC enrollment declines are not consistent with population changes in its service-area, and adult learner enrollment declines were more severe than overall student enrollment declines. This trend would imply that DSCC's adult learners are a unique population from DSCC traditional students with their own distinct needs, and warrant further analysis at the institutional level to understand these students.

Figure 11: DSCC Comparison enrollment changes to estimated population change in 7-county service area from 2010 to 2016 (DSCC Fact Sheet & United States Census Bureau):

	DSCC Adult Students	DSCC Total Students	Dyer	Crockett	Gibson	Lake	Lauderdale	Obion	Tipton	Total 7-county service area
2010 Population/Enrollment	1421 (in 2011)	3749 (in 2011)	38,330	14,576	49,691	7,832	27,822	31,807	61,006	231,064
2016 Population/Enrollment	658	2816	37,708	14,411	49,401	7,560	26,773	30,578	61,303	227,734
Percent Change	-53.7%	-24.9%	-1.6%	-1.1%	-.6%	-3.5%	-3.8%	-3.9%	.5%	-1.4%

*https://www.census.gov/quickfacts/fact/table/crockettcountytennessee,gibsoncountytennessee,tiptoncountytennessee,obioncountytennessee,lauderdalecountytennessee,lakecountytennessee/PST045216
*https://www.youtube.com/watch?v=iqx32Pq4XGQ

As Figure 11 highlights, the decline in adult learner enrollment (and ultimately persistence) is larger than the overall enrollment declines of DSCC's traditional students over the same period. While adult student enrollments have declined 53.7 percent from 2010 to 2016, DSCC's total student population has only declined 24.9 percent over this same period. Again, this affirms the uniqueness of the adult learner population and undergirds the need to study this group independently of traditional students.

It is commonly believed that since adult learners oftentimes seek postsecondary education due to loss of employment or to increase employment opportunities in a declining economy, adult learner enrollments are to some extent dependent upon the economy (Keen, 2006; Kimmel, Gaylor,

Grubbs & Hayes, 2012; Pennington, McGinty & Williams, 2002). Figure 12 identifies the unemployment rate in the DSCC service-area from 2010-2016. If the commonly held wisdom is accurate, the drastically decreasing unemployment rate in the area since 2010 would be an important indicator for the declining adult student enrollments and persistence at DSCC.

Figure 12: Unemployment rate in 7-county DSCC service area from 2010-2016, by percentage:
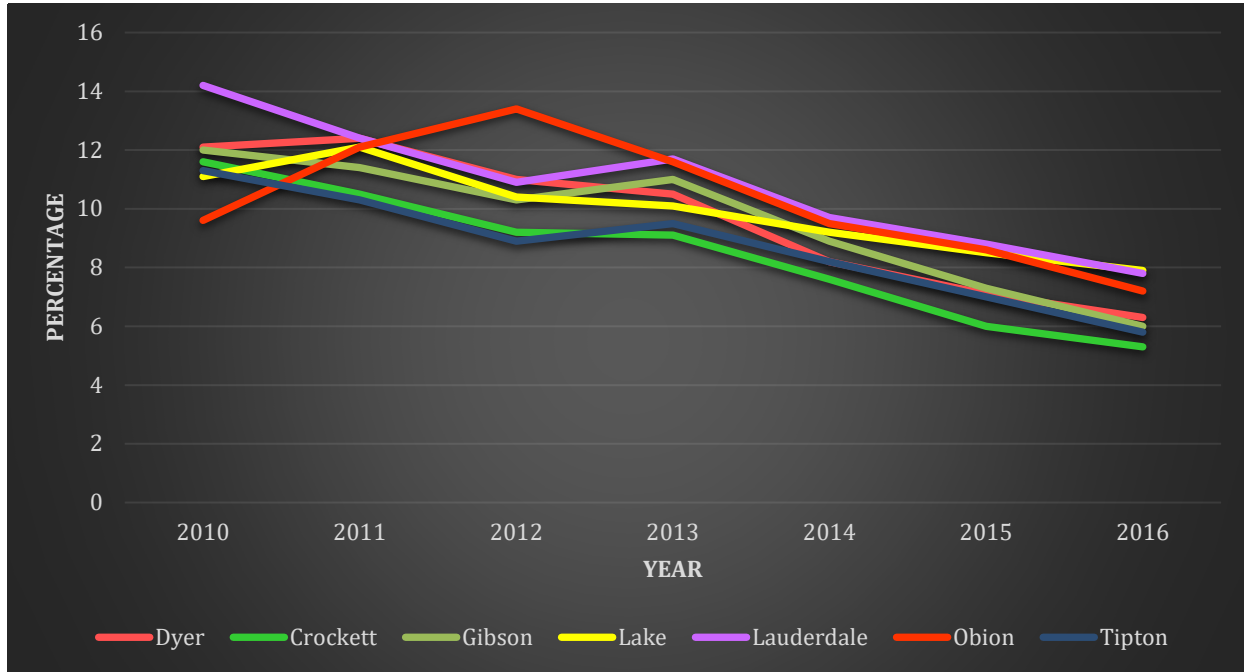
Nevertheless, adult learner persistence is not well-understood, and there may be other institutional factors that affect these students' attendance in postsecondary education. Due to the remaining unanswered questions and lack of overall knowledge regarding adult learner persistence, this study analyzed trends specific to adult learners at DSCC to determine possible contributing factors affecting their decision to enroll and to make recommendations to enhance adult learner persistence.

Considering the extant literature, we narrowed our scope of this project to five intertwined areas of study and relevance to DSCC regarding adult learner programming. These areas have been highlighted by prior research as crucial areas of consideration for adult learner success: class offering times, accelerated courses/programming, academic programs, online and hybrid classes/programs and flexible office hours (see DSCC Project Scope Framework).

In choosing these five areas we focused on the "iron triangle" of challenges adult learners contend with: barriers, role dissonance and risk factors. DSCC recognizes that its adult population may share the same barriers as many other higher education institutions. As such, research conducted with DSCC adult learners may be applicable to adult learners in other community college settings. Although research on adult learners has been inadequate to understanding this population since the advent of mainstream adult education programming in the late 1900s, a basic conceptual analysis may inform current

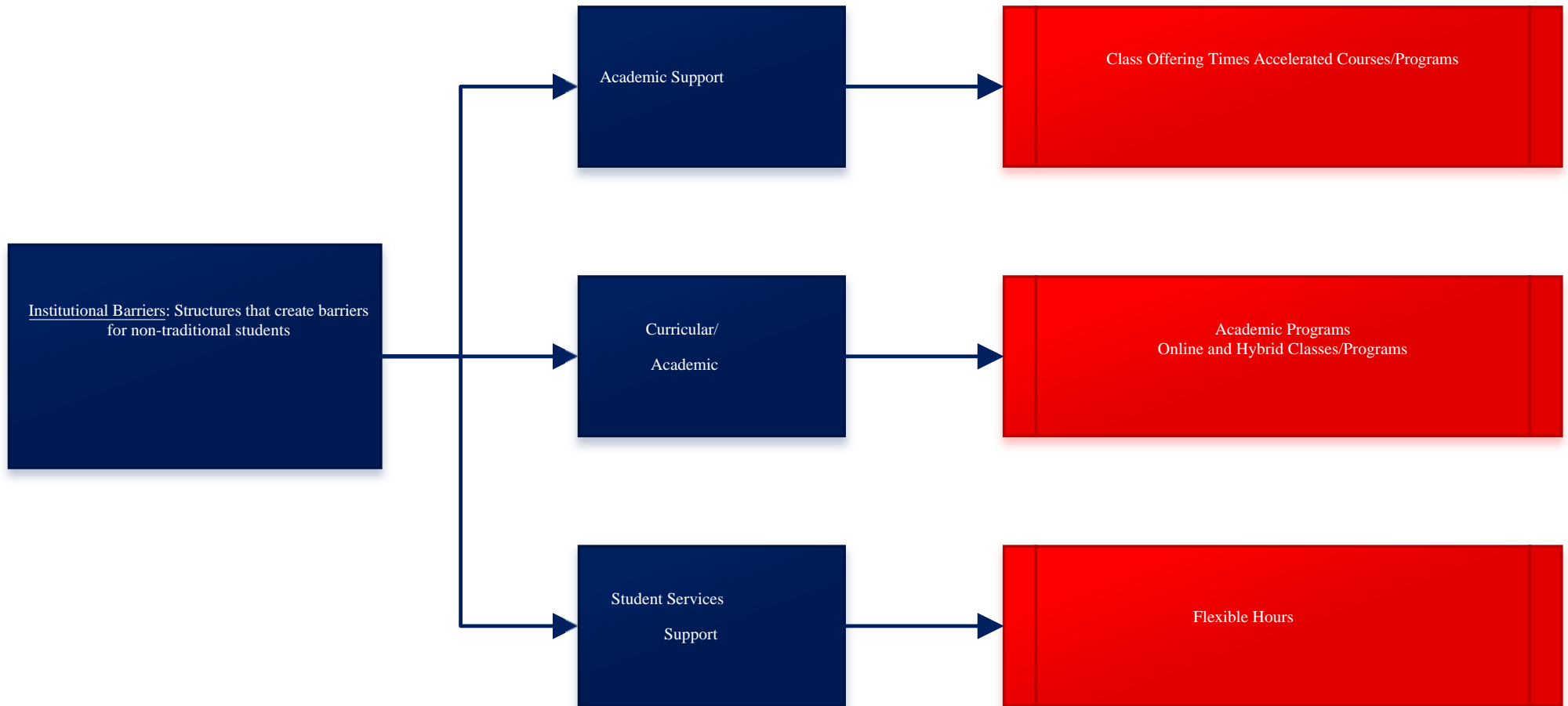and future research, application and understanding into this population.

Being a well-established theory in traditional student persistence, some authors have attempted to adapt Tinto's Student Departure Model to nontraditional students (Ashar & Skenes, 1993; Wyatt, 2011). The application of this approach to adult learners is still in initial stages with varying levels of success. Consequently, this research project chose to focus on more recent and developed models of barriers adult learners face (Cross, 1981; Hanniford, 1993; Hardin, 2008; Keith, 2007; Ritt, 2008). The five barriers covered within the scope of this project fit into relevant issues DSCC's adult learners currently face and are applicable to the adult learner population.

Moving from the theoretical context and analyzing the situational context, it is important to note the unique characteristics and events currently surrounding the DSCC service-area. Taking into consideration current population and unemployment trends in the DSCC service learning area, some important factors may be noted. While the decline in adult learner enrollments do not appear to be tied to any population declines in the area, DSCC enrollment numbers fell while unemployment fell in its service-area over the same time frame. While the local economy may be an exacerbating factor in the adult student decline in enrollments, with the advent of the Tennessee Reconnect grant in fall 2018 it is very possible adult learner student enrollments will increase again. Considering the complex nature and limited understanding of adult learner persistence, we believe DSCC may implement new strategies to increase adult learner persistence for the incoming Tennessee Reconnect students.

While it is important to understand adult learner success and persistence from all views, it is also critical to holistically examine all factors surrounding adult learning and connect disparate facts. Despite the positive economic conditions and their perceived effect on adult learner enrollments in postsecondary education, further theory and research into the specific DSCC adult learner population may point to other factors that are within DSCC's control to further enhance adult learner persistence and success.

Dyersburg State Community College Project Scope Framework

Institutional Barriers: Structures that create barriers for non-traditional students

Academic Support → Class Offering Times Accelerated Courses/Programs

Curricular/ Academic → Academic Programs Online and Hybrid Classes/Programs

Student Services Support → Flexible Hours

Research Questions

We address the following research questions:

1. What characteristics are significant predictors of adult students persisting to a second year at DSCC?
2. What academic programs do adult learners in the Dyersburg service-area report being interested in studying?
3. What are the academic and support services preferences of adult learners at DSCC, and how do the current offerings reflect those preferences?

Answers to these questions allow for better understanding of the adult learner population at DSCC and the programmatic factors that contribute to adult learner persistence.

Definitions

Adult learners at DSCC are defined as students 25 years of age or older. Data gathered from DSCC and collected through surveys was only from students within this age classification.

Active students are defined as students actively enrolled at DSCC for a given semester/term.

Persistence, as defined by DSCC, is the completion of an academic program. In the DSCC Adult Learner Survey, persistence is reflected through a student having accumulated 13 or more credit hours throughout the course of the student's study at DSCC.

Retention, as defined by DSCC, is the continuation of enrollment from one defined term to another (examples: fall semester to spring semester or fall semester to next fall semester).

Note: consistent with extant literature, this study will define persistence as equivalent to DSCC's retention definition.

Academic success at DSCC is defined as a student passing all attempted credit hours (no minimum hour requirement) with a grade of C or higher.

Good standing at DSCC is defined as maintaining at least a 2.0 cumulative GPA.

Methods

Study Design

Collecting and analyzing the stories of adult learners at DSCC paints a picture describing how to improve services to adult learners. As such, we conducted both qualitative and quantitative surveys in the fall of 2017 and analyzed a DSCC administered multi-year data set consisting of active adult learner characteristics over the span of several years. Our research project utilized three sources of data, each described in detail below:

1. FAFSA Frenzy Survey: a short 5-question survey that was distributed during DSCC FAFSA Frenzy events in October 2017 (these surveys were aptly names the FAFSA Frenzy Surveys).
2. DSCC Adult Learner Needs Survey: a 40-question online survey that was distributed during the Fall 2017 semester from November through December to all active DSCC adult students.

3. DSCC Administrative Data: consisted of the following adult learner characteristics: hours completed at Dyersburg, major, FAFSA completed, marital status, children, first generation, race, part-time or full-time student status, transfer hours completed and GPA, and included data on all adult learners who attended DSCC for at least one semester between 2009-2017.

This study utilized a mixed-methods design to answer the research questions and gain an overarching picture of adult learner success at DSCC. By using this strategy, we incorporated both quantitative data analysis and quantitative and qualitative survey design to research adult learner characteristics and perceptions/preferences. A mixed methods approach is often necessary to conduct a study that is "relevant, meaningful, understandable, and able to produce useful results that are valid, reliable, and believable" (Patton, 2002, p. 68). Patton (2002) further affirms that when appropriate to conduct a mixed methods study, the additional benefits of increased productivity and effectiveness by including a qualitative component adds depth of understanding through powerful and individual perspectives. Oftentimes, it is also necessary to study a wider breadth of content through questions that are derived through both quantitative and qualitative means as some facets of research lend themselves to certain formats more ideally than others (Patton, 2002).

Qualitative analysis was completed through coding respondent survey answers into matrices that were catalogued by theme into comprehensive categories. All quantitative survey responses were coded into excel, spot checked for accuracy, and quantitative data were uploaded into SPSS statistical software for analysis. Quantitative analysis of this administrative data consisted of multivariate statistical regression analysis, t-test, ANOVA, correlation and descriptive statistical analysis.

Data

All data, which includes both surveys and the administrative data set requested from DSCC, were collected in one phase during the same timeframe. This was due to the truncated timespan of the project scope - less than one year in length with completion of the research project expected in spring 2018. Data were collected over the fall 2017 semester through both surveys. The methodological purpose behind three separate sources of data was to triangulate the data to test for consistency and validity between results (Patton, 2002).

Additionally, we visited the DSCC campus multiple times, spoke with college employees, toured campus grounds, and collected several original sources of college documentation (brochures, handouts, etc.) to understand the culture of the institution. This cultural understanding further triangulated results and helped inform the qualitative data analysis. Both surveys contained quantitative and qualitative questions; since adult learners' time is so limited, and considering their competing priorities, qualitative questions were embedded within the surveys to maximize adult learner time investment.

During the same fall 2017 semester, DSCC adult student characteristic data from 2009-2017 was requested and received from DSCC's Institutional Research office in November. Specifically, the DSCC administrative data provided semester level snapshots of the adult learner universe of students. These student characteristics included a plethora of descriptive information, including foundational variables such as Pell Grant recipients, demographic identifiers, GPA, full/part-time status, remediation requirements, declared degree

program, and course type (online, hybrid, etc.) students studied. These data are considered highly relevant and comprehensive as they include every adult student who attended DSCC over a nine-year period. This data set was requested to run regression analyses and determine predictors of adult learner persistence. The administrative data were provided in both raw individual data and aggregate numbers.

Although an extensive data clean-up was required, it only consisted of a handful of dataset manipulations. The most notable was the identification of duplicate student entries across the 27 semesters; to determine how many semesters an individual student enrolled at DSCC, each semester was listed as a separate line. Knowing how many semesters a student enrolled allowed the calculation of persistence measures, so the data were cleaned up to reflect all semesters studied in one line per student. With more than 22,000 entries, the data were organized to reflect the existence of 6,602 individual students.

Quantitative data offered a general view of the adult learner scenario at DSCC while the qualitative data provided details through adult learners' stories as they were relayed. Both sets of data were used to later conduct "best practices in higher education" research. This research informed the recommendations made in this report.

Survey Instruments

FAFSA Frenzy Survey

The short FAFSA Frenzy Survey had five questions, four multiple choice questions and one open-ended question (see the survey instrument found in Appendix B). The five questions asked respondents to provide feedback regarding the preferred class times of intended study, previous experience with higher education, academic program preferences, and why the respondent was interested in postsecondary study. The survey was distributed via paper at DSCC FAFSA Frenzy events on October 3, 5, and 10, 2017, yielded 62 respondents, all of whom were event attendees. The survey was distributed and collected during the events by DSCC staff. These events were DSCC recruitment events, and attendees were potential adult learners beginning study in fall 2018 with the Tennessee Reconnect grant. It was assumed event attendees would represent the preferences of future TN Reconnect students. This provided a unique opportunity to organically survey incoming adult learners regarding their needs. The FAFSA Frenzy Survey response rate was 100 percent of event attendees over all three events.

DSCC Adult Learner Needs Survey

The 40-question online DSCC Adult Learner Needs Survey (Appendix B) consisted of demographic, programmatic, perception, and qualitative questions. This survey was adapted from extant literature and multiple higher education surveys used previously to measure adult learner preferences historically and currently: Adult Student Priorities Survey (Noel-Levitz, 2016), Adult Learning Survey (Wlodkowski, Maulden, and Gahn, 2001), Community College Survey of Student Engagement (CCSSE, 2017), and National Adult Learners Satisfaction Priorities Report (Ruffalo Noel-Levitz, 2016). The DSCC Adult Learner Needs Survey consisted of multiple choice, select all that apply, Likert scale discrete questions and open-ended qualitative answer questions. The goal of this survey was to measure the perceptions of adult learners regarding DSCC programs, and how adult learners believe those programs contribute to their success. The DSCC Adult Learner Needs survey was administered online and distributed via URL link to all active DSCC students from November 13, 2017, through December 8, 2017. To prevent transmission

of email addresses and reduce the risk of researchers receiving personally identifiable information, DSCC staff emailed the survey URL to all active DSCC students. Reminders were sent to students on November 27, 2017, and December 6, 2017. An email from the DSCC president was sent to all students earlier in the semester requesting their participation. This survey was anonymous with no personally identifiable information collected.

Both surveys were reviewed for content, wording, appearance, and clarity by doctoral students, higher education administrators, and lay persons to ensure the surveys made sense to potential respondents and were valid measures of adult learner preferences. Since the DSCC surveys were adapted from well-established surveys in adult learning in which validity and reliability were already proven, there were no additional validity or reliability tests or measures used in either the FAFSA Frenzy Survey or DSCC Adult Learner Needs Survey.

Sample

Survey Sample

A total of 478 student responses were collected from both surveys distributed in fall 2017. The target populations of these surveys were both adult learners actively attending DSCC during the fall 2017 semester and potential adult learners who plan to begin enrollment in fall 2018. The active adult student population yielded 416 respondents to the DSCC Adult Learners Survey, and the prospective adult population yielded 62 respondents to the FAFSA Frenzy Surveys. These two groups were selected to determine adult learner characteristics predictive of success and to measure the persistence needs of incoming adult learners. All participants were kept anonymous and no personally identifiable information was collected.

It was discovered through the qualitative data that several DSCC employees completed the survey. These respondents' results were removed and not included in the analysis. There was a total of 416 responses, giving a response rate of 15 percent (2,843 total students in fall 2017). This survey was titled the DSCC Adult Learner Needs Survey; as such, two "knock-out" questions were embedded within the survey to terminate the survey for any students under 25 years of age. In total, 158 respondents were students 25 years or older and deemed suitable for purposes of this study. The DSCC Adult Learner Needs Survey response rate specifically for adult learners was 25 percent (621 total adult learners in fall 2017). All other respondent answers were discarded before analysis.
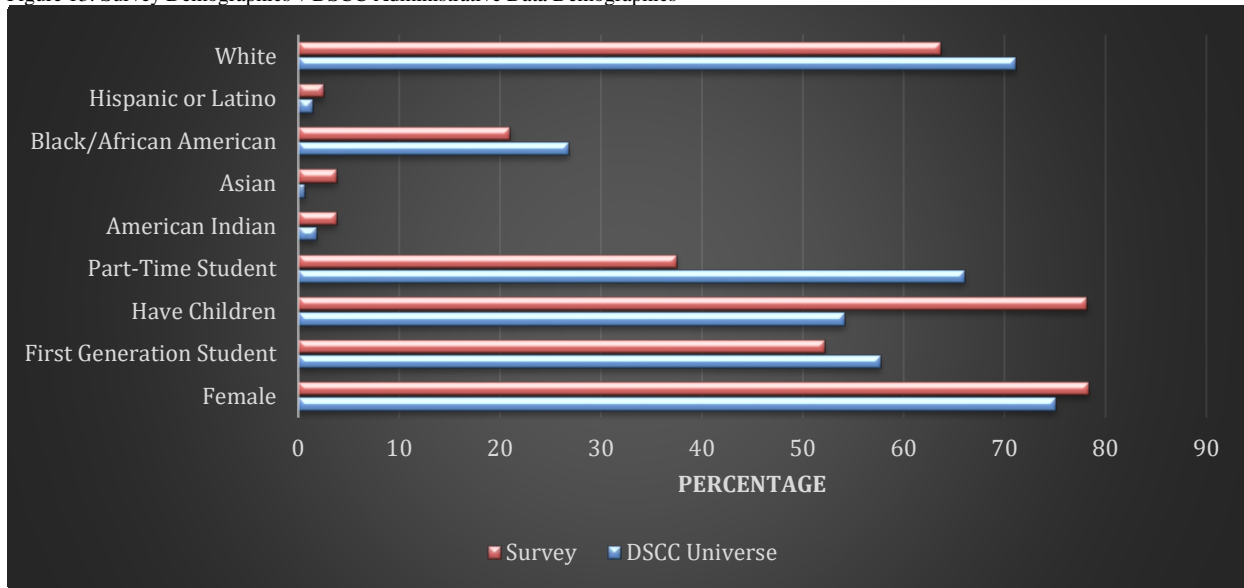
Administrative Data Sample

The administrative data requested from DSCC included characteristic data on 6,604 students who were enrolled at DSCC for at least one semester between 2009 and 2017. The target population of this data request was any adult learner who studied at DSCC during any semester within this time frame. The intent of this data analysis was to evaluate characteristics of adult students to predict factors that contributed to or hindered persistence. The administrative data set was reported at the student level, but no personally identifiable information was included in the report. All students were identified with a random unique ID.

Utilizing both the administrative data set and survey data to test for predictors of persistence allowed an opportunity within the project to check results. To test between the administrative data set and the surveys, demographic variables between both sets of data were checked for congruence (Figure 13). Through comparison of survey respondent demographic data to the data administrative from DSCC, it was

determined the survey respondents were a representative sample of adult learners at DSCC. As seen in Figure 13 below, the DSCC administrative data and the DSCC Adult Learner Needs Survey contain demographic characteristics that are closely related and virtually overlap. For example, the DSCC universe data showed 75.1 percent females, 57.7 percent first generation and 26.8 percent African-American students. In comparison, the survey data showed 78.3 percent females, 52.2 percent first generation students, and contained 21 percent African-American respondents. Given these key demographic descriptors, the results of the survey analysis may be applied to the general DSCC adult learner population because they so closely mirror each other.

Figure 13: Survey Demographics v DSCC Administrative Data Demographics

Analytic Methods

Quantitative Data

Quantitative data were derived directly from the three primary sources of data: DSCC administrative student data over the past 27 semesters, the FAFSA Frenzy Survey, and the DSCC Adult Learner Needs Survey. Of these, distinct data collection yielded enough raw numerical data to avoid small sample datasets and allowed for in-depth statistical analysis. SPSS was the primary statistical aid used to conduct all analyses.

With only 65 respondents, the data yielded from the 5-question FAFSA Frenzy survey gave a useful insight into the course types DSCC incoming adult learners plan to take. Simple frequency and measures of central tendency tests were performed on this set of survey data. Here, we simply report the means of a quick and blunt survey to get a grasp of the type of adult student planning to enroll at DSCC. These simple tests begin a longer process of understanding the data in order to comprehend persistence rates.

The DSCC Adult Learner Needs Survey was designed to retrieve significant quantitative data from currently enrolled adult learners. Of the 158 valid responses, a series of analytical methods was employed. T-tests determined if a statistically significant difference existed between enrolled credit hours (proxy for persistence with DSCC

Adult Learner Needs Survey) from a sample used in the study and the general population.

The DSCC administrative student report provided ample data points to use as reference and cross check for comparison to the Adult Learners Needs Survey. Frequency and measures of central tendency were used to determine student demographics, student success and persistence outcomes. These simple tests were conducted to quickly determine the general description of the kind of data that had been collected. Averages and ranges of the values in any of the variables gave us a general feel of each of the parameters before more complex statistical tests were run. A more thorough multivariate regression analysis was also performed to determine which, if any, of the independent variables (such as employment, dependent children, age, etc.) had any impact on persistence. An identical t-test was completed to determine if a statistically significant difference existed between the number of semesters enrolled (proxy for persistence in DCSS administrative data) from a sample of the data and the general population.

Meanwhile, ANOVA was used to identify any statistically significant difference of means between multiple groups. A Tukey post-hoc test was performed in conjunction with the ANOVA test to check for specific differences between desired groups to better understand the data, Both T-tests and ANOVA were used to compare data between the DSCC administrative student dataset and the DSCC Adult Learner Needs Survey.

Rarely does the opportunity exist to compare survey results with a complete universe of quantitative data that spans multiple years. This ability led to the formation of a comprehensive multivariate regression analysis. Regression analysis allows the researcher to determine what, if any, relationship exists between the

dependent variable (persistence) and corresponding independent variables (such as demographic characteristics, etc.) in a measurable way. The following model sums up the regression equation employed:

Y (Persistence) = b1(Demographics) + b2(GPA) + b3(Full or Part-time Student) + b4(Online/Hybrid classes) + a

Under this condensed model, the Y dependent variable was the number of credit hours completed at DSCC, which is the proxy for persistence. This variable represents persistence and fits neatly into a regression model that included multiple independent variables tested to see if they contributed towards a higher number of completed credit hours. The independent variables were narrowed from the 40 questions and their subsets on the overall survey, and are represented in the model under the buckets of (b1) Demographics which included gender, first generation student, married or single, and whether the student has a child or not. The (b2) GPA variable represents the student's Grade Point Average. The (b3) variable represents the enrollment as a full or part-time status, and finally, the (b4) bucket represents whether the student took online, hybrid, or a mixture of such classes. The final (a) variable represents the where the regression line intercepts the Y axis when plotting the outcome.

Finally, the last major statistical test performed was a model fit summary which determined what percentage, if any, of the variation of the dependent variable could be accounted for by the independent variables.

Qualitative Data

Utilizing research to highlight current established strategies to aid adult learners, we selected academic programs, online and hybrid classes, accelerated programs, and institutional scheduling as the areas of further

qualitative research. Literature in adult learning has highlighted these factors as crucial to adult learner success and were thus deemed necessary for further qualitative analysis to understand a more complete picture at DSCC. The FAFSA Frenzy Survey consisted of two qualitative questions; the DSCC Adult Learner Needs Survey included nine qualitative questions aimed at these four data points. The qualitative answers for each of these factors were coded by theme through both open/emergent and a priori coding. A mixed approach to coding allowed us to utilize themes previously found in the literature, but to also be flexible in employing themes that emerged within the survey responses.

Once all data was collected, the qualitative data was read several times for an overall understanding of the context, without any analysis or coding. Once familiarity with the qualitative data was reached through several readings, the analysis began. Qualitative data was initially coded per question, then trends found in each question were applied to find overlapping trends throughout all collected data. The qualitative data yielded several themes and constructs. The a priori themes consisted of such concepts as lack of technology know-how, role dissonance, instructor access, class offering times and adult-specific programming. The themes were coded into the overarching constructs of online education, hybrid education, academic programs, DSCC general feedback, and why adult learners enrolled. Adult learner quotes were coded and input into matrices to organize the extensive data (see appendix C). One project researcher coded the qualitative data while the second project researcher verified the coding results through a secondary cursory review of the qualitative data and matrices. Further, emergent themes were discovered through the analysis, and resulted in the conclusion that qualitative answers fit into four experiential contexts: statements of fact, relational, situational, and perceptual (Appendix D – sample code book).

Results

Research Question #1

What characteristics are significant predictors of adult students persisting to a second year at DSCC?

Summary of Findings

As seen in Table 1, adult learners who completed the survey in Fall 2017 had completed more credit hours (with statistical significance, M = [.63], SD = [.48]) than the general population, t (156) = [16.31], p = [0.000]. Given that the p-value is well under the statistically significant threshold of .05, further statistical analysis was conducted.

Table 1: One-Sample T-tests for Survey and DSCC Data Persistence Proxies

	N	Mean	Std. Deviation	Std. Error Mean
Survey Persistence	157	.63	.484	.039
Survey General Population	156	.631	16.31	.000
DSCC Persistence	6603	3.20	2.479	.031
DSCC General Population	6602	3.21	104.93	.000

As further found in Table 1, adult learners who enrolled at DSCC from Fall 2008 through Spring 2017 had enrolled in more semesters (statistical significance, M = [3.20], SD = [2.48]) than the general population, t (6602) = [104.93 p = [0.000]. Similar to the DSCC Adult Learner Needs Survey result, with the p-value being well under the statistically significant threshold of .05, further statistical analysis was conducted.

With so many rich variables and data points collected from the DSCC Adult Learner Needs Survey, ANOVA was used to determine whether any of the differences between the means of the variables are statistically significant. Here, Table 2 presents that ANOVA results for the relationship between persistence rates and various student characteristics asked in the survey.

Table 2: ANOVA Analysis of DSCC Adult Learner Needs Survey of Persistence and Selected Variables

		Sum of Squares	df	Mean Square	F	Sig.
Pell Grant	Between Groups	.086	1	.086	.219	.641
	Within Groups	60.806	155	.392		
	Total	60.892	156			
Gender	Between Groups	.150	1	.150	.668	.415
	Within Groups	34.856	155	.225		
	Total	35.006	156			
GPA	Between Groups	8.582	1	8.582	7.829	.006
	Within Groups	161.136	147	1.096		
	Total	169.718	148			
Hours Work/Week	Between Groups	.224	1	.224	.036	.849
	Within Groups	952.615	154	6.186		
	Total	952.840	155			
# of Children	Between Groups	.310	1	.310	.353	.553
	Within Groups	135.049	154	.877		
	Total	135.359	155			

Of all the variables tested, only one variable showed a significant effect of both students' GPA (F=7.829, p<.006) and persistence.

Statistical results from the DSCC Adult Learner Needs Survey are most succinctly described through the regression analysis framework. As demonstrated in Table 3, two of the eleven selected independent variables in the DSCC survey regression model showed statistical significance towards persisting to a higher number of completed credit hours. For the adult learners surveyed, only the students' GPA (coefficient of -.261 and p-value of .033) and whether they enrolled in an online course (coefficient of .106 and p-value of .015) had any effect on whether they enrolled in more courses. The relationship between online course enrollment and adult learner persistence is a negative relationship, with enrollment indicating more likelihood of persistence.

Table 3: Coefficients: Contributors of Persistence for DSCC Adult Learners from Survey Results

| Variable | Coefficients | | ed | | |
	B	Std. Error	Beta	t	Sig.
(Constant)	0.397	0.514		0.773	0.442
Full-Time Enrolled	0.089	0.096	0.094	0.929	0.355
Pell Grant Awardee	0.092	0.081	0.115	1.134	0.260
Gender Male1	-0.082	0.103	-0.080	-0.796	0.428
GPA	0.093	0.043	0.221	2.167	0.033
Hours Work/Week	-0.014	0.020	-0.077	-0.716	0.476
Married	0.025	0.101	0.027	0.251	0.802
First Generation	0.082	0.094	0.090	0.871	0.386
Child Dependents	-0.018	0.053	-0.036	-0.345	0.731
Access to Internet	0.200	0.189	0.110	1.061	0.291
Taken Online Course	-0.261	0.106	-0.247	-2.472	0.015
Taken Hybrid Course	-0.028	0.053	-0.054	-0.529	0.598

a. Dependent Variable: Credit Hours Completed (Persistence proxy)

Evaluating the results of the DSCC Adult Learner Needs Survey for model fit found the R-Square resulted in .166, Table 4 which indicates only 16 percent of the variation of the dependent variable (completing 13 or more credit hours) can be explained by the independent variables.

Given such a low percentage of variation of the model contributing to student success, none of the demographic characteristics indicated in the survey data are considered highly influential factors that contribute to adult learner persistence, except for academic student success as expressed by GPA.

Table 4: Model Fit for Survey and DSCC Data

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Survey Model Fit	.407	.166	.066	.444
DSCC Data	.402	.162	.161	2.271

From the DSCC administrative data, an ANOVA test was conducted to determine whether any of the differences between the means of the variables are statistically significant. Here, Table 2 reveals that there was a significant difference in means with only an adult learner's GPA ($F=7.829$, $p<.006$). Given the results in Table 2, these predictors suggest they contribute to the explanation of adult learner persistence in the DSCC administrative data. The use of multivariate regression analysis will further explain their importance in the context of a model.

A regression analysis was performed to determine which, if any, of the independent factors identified contributed positively towards a students' ability to persist to another semester of enrollment. Of the eight independent variables employed, similar results were found from the survey regression in Table 5. Both GPA (coefficient of .020) and whether a student enrolled in an online course (coefficient of -.076) yielded statistically significant results that positively correlated with GPA and negatively with online course enrollment and students' enrolling in additional semesters at DSCC.

Table 5: Coefficients: Contributors of Persistence for DSCC Adult Learners from DSCC Data

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.344	0.106		12.700	0.000
	Full_or_Part_time_PT1	-0.366	0.063	-0.070	-5.778	0.000
	FAFSA_Completed	0.520	0.096	0.089	5.434	0.000
	Gender_M1	-0.333	0.066	-0.058	-5.015	0.000
	Term_GPA	0.667	0.020	0.376	33.182	0.000
	1ST_GENERATION	0.090	0.070	0.018	1.284	0.199
	Has_Children_YES1	0.061	0.070	0.012	0.870	0.384
	Course_Count_Online	-0.076	0.034	-0.026	-2.245	0.025
	Course_Count_Hybrid	-0.175	0.119	-0.017	-1.475	0.140

a. Dependent Variable: OccuranceCPY

Additionally, similar to the survey results, whether a respondent is a first-generation college student, has dependents, or is enrolled in a hybrid course is statistically insignificant towards explaining the variation of why a student persists. Interestingly, DSCC administrative data also showed completion of a FAFSA (coefficient of .096) and being a part-time student (coefficient of .063) as significant, two independent

variables that had no statistical significance in the DSCC Adult Learner Needs Survey.

Evaluating the DSCC administrative data for model fit found the R-Square resulted in 0.162 in Table 4, indicating 16 percent of the variation of the dependent variable (enrolling in more than one semester) can be explained by the independent variables. Given such a low level of variation of the model contributing to

student success, none of the demographic characteristics indicated in the DSCC administrative data set are considered highly influential factors that contribute to adult learner persistence. Coincidentally, the DSCC administrative data set and DSCC Adult Learner Needs Survey regression analyses resulted in almost identical R-squared values, indicating that the survey responses are highly reflective of the true adult student population. By using two distinct quantitative measures, the analysis may be triangulated to confirm result accuracy. Both the survey responses and administrative data yielded similar statistical results, confirming only GPA and online course enrollment maintain a statistically significant relationship with adult learner success. However, with low R-square values, these two variables explain a minimal variation of adult learner persistence. Given the outcomes of these tests, preliminary inferences suggest the variables considered in the model capture little of the variance that explains why adult learners persist. Ordinary least-squares regression, ANOVA, and resulting Tukey analyses, as discussed in the results, yielded only two independent variables which help predict adult learner persistence at DSCC. In summary, student success as expressed by GPA in both DSCC survey and DSCC administrative data emerged as a statistically significant predictor of persistence. This conclusion is show in Tables 2,3, 5 and 6. The higher a student's GPA, the more likely the student is to enroll again or complete more credit hours. In other words, the better a student's academic success in the classroom, the more likely he/she is to continue study. This finding is not surprising and is consistent with the extant literature body regarding adult learning.

Table 6: ANOVA Analysis of DSCC Data of Persistence and Selected Variables

		Sum of Squares	df	Mean Square	F	Sig.
Term_GPA	Between Groups	3311.074	16	206.942	141.779	.000
	Within Groups	9612.997	6586	1.460		
	Total	12924.071	6602			
Course_Count_Online	Between Groups	10.217	16	.639	.907	.561
	Within Groups	4637.658	6586	.704		
	Total	4647.875	6602			

Additionally, whether a student enrolled in an online course appeared to contribute negatively towards persistence. Table 3 indicates a statistically significant relationship with the online course as an independent variable and re-enrolling/taking more credit hours as the dependent variable. Why this is the case is unknown, but the regression analysis reflects a negative trend. Tables 3 and 5 reveal that taking online courses contributes towards lower rates of persistence for adult learners. Further analysis is required to better understand this trend as it is yet to be determined if these results were spurious or how to differentiate online verses hybrid courses in affecting persistence rates.

No other independent variables predict persistence at a statistically significant level in either instrument.

Research Question #2

What academic programs do adult learners in the Dyersburg service-area report being interested in studying?

Academic Programs

The qualitative data illustrate desired academic programs that relatively mirror the similar enrollment patterns of survey respondents. Figure 14 provides a view of survey respondent enrollments as well as desired programs. It is interesting to note that although most students were enrolled in health professions, the most frequently suggested new degree programs were also in the health professions. Figure 15 summarizes the programs desired, and organizes into general program themes based on DSCC's current academic structure.

A striking note from Figure 15 is the prevalence of adult student-desired liberal arts programs. Favored programs in the responses generally divided into two categories: career-oriented and personal development. The qualitative data also suggest an explanation for this: some students attend postsecondary education for career advancement, while others attend for self-improvement. Of those who attend for self-improvement, one student states the classic American Dream: he/she "*always wanted to go to college*." Another student explains why college attendance is so important, and that is to "*better myself*." For those students who are attending for employment purposes, their reasons still encompass a fulfillment of a dream, "*to live my dream of becoming a RN*." Another student was motivated by "*better income*" and another wanted "*to seek employment*" through postsecondary education.

Figure 14: Survey respondent enrollments versus desired programs
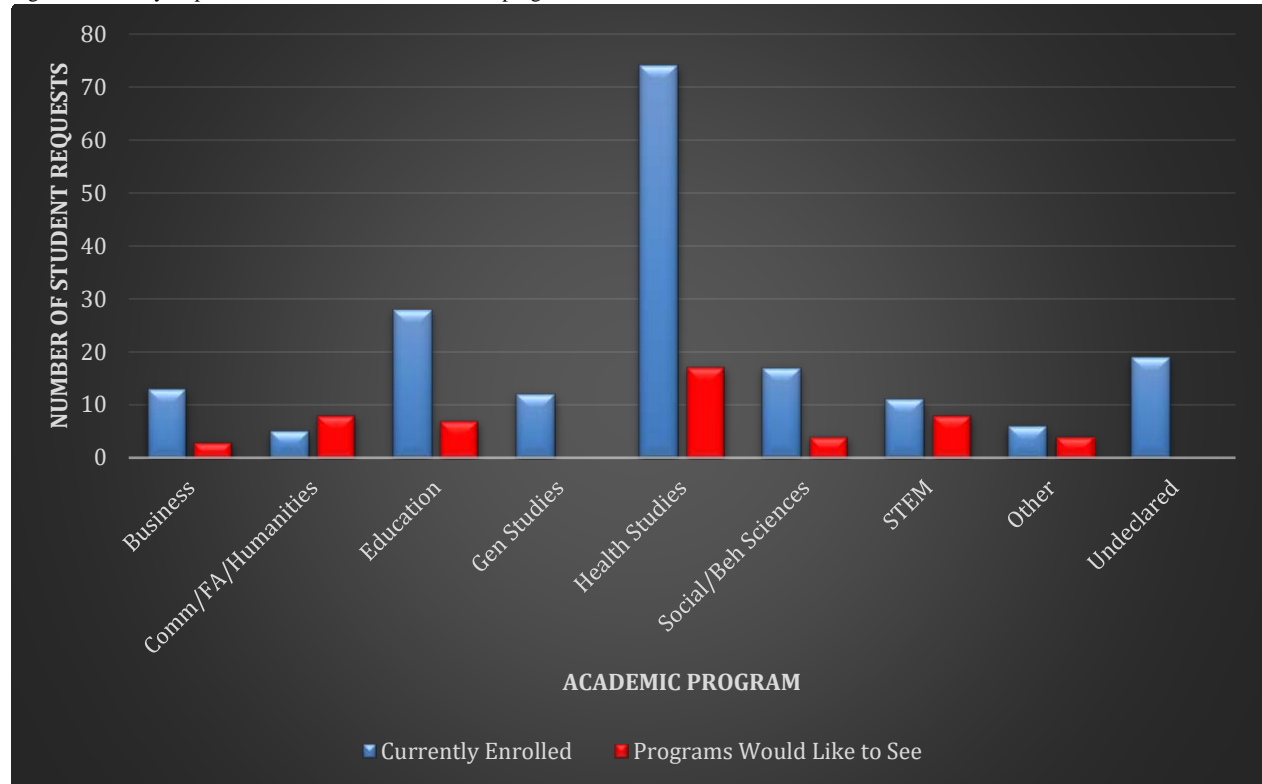
An analysis of the responses identifies that adult learners desire new programs in health studies, liberal arts/humanities, education and STEM fields, with health programs being the most prevalent. It is also worth noting that there are several pre-health programs already offered by DSCC and that the student response is that there is a preference for programs offered entirely through DSCC (an example is the dental hygienist program) rather than pre-programs.

Figure 15: Survey respondent desired programs detail

Desired Programs of Study (by academic area)			
Health Studies	**STEM**	**Communications/Fine Arts/Humanities**	**Education**
Dental	Computer Science	Japanese Language	Early Childhood Education Teachers
Dental Assistant	Computer Programming	American Sign Language	
Dental Hygienist	Computer Technology	In-seat foreign languages	Secondary or Post-Secondary (transfer to Memphis/UT Martin TEP)
Pharmacy Technician	Computer-basic	Music	
Pharmacy	Computer-advanced		More and/or Different Early Childhood courses
Radiology			
Surgical Assistant			
Veterinarian Assistant			
Pre-Veterinarian			

Research Question #3

What are the academic and support services preferences of adult learners at DSCC, and how do the current offerings reflect those preferences?

In answering question three, both qualitative and quantitative analyses were utilized from both surveys to paint an overall portrait of scheduling preferences of adult students through multiple sources.

Of the 158 survey responses, between 47 and 103 respondents answered each of the eleven qualitative questions, resulting in a robust number of textual responses to analyze. All data collected were coded into a code book, linked to the relevant research question, and categorized into answer type (Appendix D - sample code book). It was determined that many student responses could be categorized into four answer types: statements of fact; relational, how the student relates to others; situational, aspects surrounding a person's life; and perceptual, how students perceived the world around them. Most adult student responses fit into the perceptual category. It is important to note this to understand the significance perception has in how students define the world around them. Second, behind perceptual were relational responses, underscoring the importance of positive relationships in interactions with adult students. These themes are important in applying the practical strategies that aid adult learning persistence because these themes provide a basis for understanding priority and importance. Institutions may then be able to rank practical strategies to aid adult learners based on student perception of importance.

Respondent comments that affirmed the importance of relational and perceptual

experiences with adult learners focused on the interactions at the institution. One student described enjoyment of interactions with DSCC based on both the perceptual and relational response types, "*The staff and faculty are very kind and helpful and always do their best to help me whenever I need assistance.*" This statement implies the student perceives DSCC staff as caring and taking time to establish positive relationships with adult learners. Another student enthusiastically declared, "*I have enjoyed every one of my professors maybe because they are more my age than my fellow classmates!*" Again, this response speaks to student perception of the surrounding environment and the influence of relationships on that perception.

Another student verbalized frustration with an area of DSCC based on perception but also found the experience of studying at DSCC overall enjoyable, "*Mixed messages from different offices can make applying and registering a challenge; but once registered DSCC is a great place to be.*" To reiterate the importance of human connection to adult learners, research completed by Wyatt (2011) determined that "nontraditional students need to be able to interact and engage with warm, friendly, supportive faculty and staff" to transition to college life and aid persistence and success (p. 16, 18). Student qualitative feedback indicates that generally, DSCC meets the spirit of perceptual and relational adult learner needs.

The following model was created from the qualitative analysis (Figure 16), and combines both practical a priori themes and emergent experiential themes. The combination of these two contexts allows institutions to focus priorities on what adult learners find most meaningful. This model highlights adult learner experiences as they relate to institutions through interactions between the learner and the institution. Taken in context, the level of fit a student feels with the institution determines student success. The more an institution aligns its programming to adult learner needs, the more likely an adult learner is to feel the institution fits into his/her life, increasing opportunities for persistence.

Adult Learner and Institutional Alignment
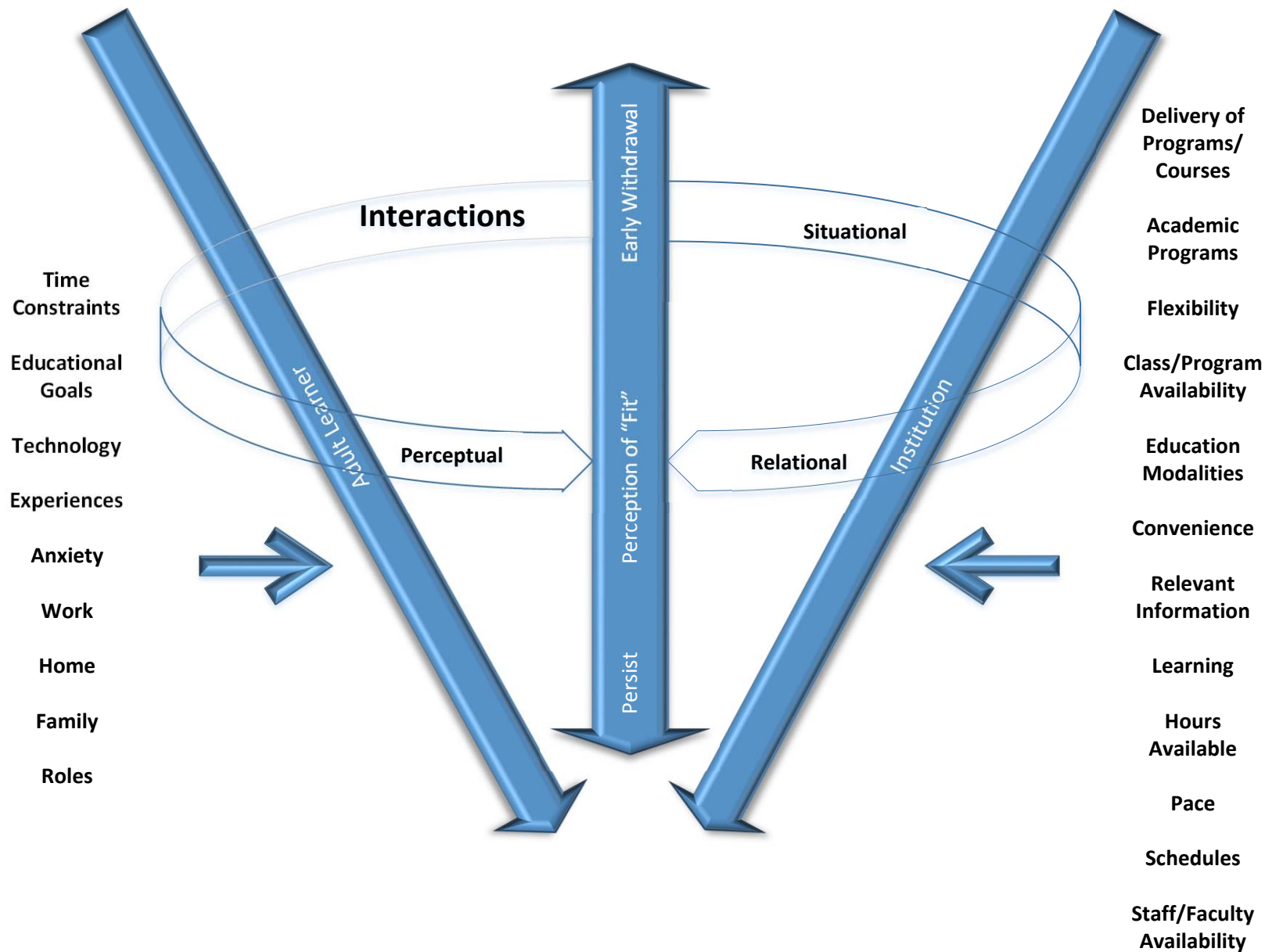
Online & Hybrid Courses

The DSCC Adult Learner Needs Survey also asked several Likert scale sub-questions regarding both types of courses. With nearly 70 percent of respondents answering these sets of questions, conclusions may be drawn on the quantifiable preferences of adult learners and online and hybrid courses.

Additionally, there were several qualitative response questions on the Adult Learners Survey regarding the perceptions surrounding online and hybrid courses. Figure 17 provides the thematic results of the qualitative analysis regarding online and hybrid education. Adult learner responses were coded into the four overarching constructs highlighted earlier: those experiences that were perceptual, or how a student perceives the world around him/her; relational, the relationships adult learners possess, both external and internal to postsecondary institutions; situational, the circumstances encompassing an adult learner; and statements of fact, general statements with no emotional basis. Surrounding these four constructs 35 themes emerged from the data. The most prevalent themes are discussed below.

Figure 17: Online and Hybrid Course Qualitative Thematic Coding:

Online Courses			
Perceptual	**Relational**	**Situational**	**Statements of Fact**
Feelings of dislike	Course-type preference	Fit	In the queue
Learning effectiveness		Flexibility	No need
Technology	Role dissonance (competing roles and priorities: family, home, school, etc.)	Convenience	Unable to physically attend classes
Online setting			No in-seat course offerings
Schedule	Institutional employees		
Safety			Poor online course selection
Age			Internet Access
Pace			Driving time
Anxiety			
Program format			
Time constraints			
Role dissonance			

Hybrid Courses			
Perceptual	**Relational**	**Situational**	**Statements of Fact**
Feelings of dislike	Course-type preference	Fit	Don't know what is
Learning effectiveness		Flexibility	In the queue
Technology	Best of both worlds	Convenience	Don't need
Schedule	Institutional Employees	Access	Unable to physically attend classes
Pace	Role dissonance (competing roles and priorities: family, home, school, etc.)		No in-seat course offerings
Program format			Poor online course selection
Role dissonance			Internet Access

Online Courses

Of those who completed the survey, 68.2 percent enrolled in at least one online course as shown in Table 7. The Adult Learner Needs Survey also consisted of several Likert scale student perception questions regarding online courses. With an average score of 4.02, adult learners agree that online courses are considered convenient to personal or work schedules. The perception of online course value with adult learners is less positive. When asked if online courses were as valuable as on-campus classes, the average was 3.65, reflecting a student perception of value between neutral and an affirmative answer. Regarding graduation, adult learners are mostly neutral when considering whether online courses offer a better chance of graduating on time or early, the average answer was 3.84, reflecting a somewhat positive response (Table 7).

Table 7: DSCC Survey Questions about Online Courses in both Frequency Average and Likert Score Average

Survey Question		Frequency	Percent	Average Score	Std. Deviation
Have you taken an Online Course?	YES	107	68.2	N/A	N/A
Online course is convenient to my personal or work schedule	Answer 1-5 with 1 Strongly Disagree	112	N/A	4.02	1.013
Online course is just as valuable as on-campus course	Answer 1-5 with 1 Strongly Disagree	112	N/A	3.65	1.257
Online course gives me chance to graduate on time.	Answer 1-5 with 1 Strongly Disagree	111	N/A	3.84	1.116
Are you familiar with Hybrid Course?	YES	79	50.3	N/A	N/A
Hybrid course is convenient to my personal or work schedule	Answer 1-5 with 1 Strongly Disagree	112	N/A	3.94	N/A
Hybrid course is just as valuable as on-campus course	Answer 1-5 with 1 Strongly Disagree	112	N/A	4.17	N/A
Hybrid course gives me chance to graduate on time.	Answer 1-5 with 1 Strongly Disagree	112	N/A	3.97	N/A
Support offices are open during convenient times for me.	Answer 1-5 with 1 Strongly Disagree	156	N/A	3.80	1.110
DSCC allows for flexible course scheduling for adult learners.	Answer 1-5 with 1 Strongly Disagree	156	N/A	3.53	1.127
DSCC academic programs do not interfere with work schedule.	Answer 1-5 with 1 Strongly Disagree	154	N/A	3.31	1.045
Current course offering times will not delay my graduation date.	Answer 1-5 with 1 Strongly Disagree	153	N/A	3.62	1.058

Qualitative analysis found similar adult student perceptions. Online courses received mixed reviews from students, with four fundamental categories emerging in the analysis. The first category focused on student displeasure with online courses and fell within the relational response type. While one student echoed the common sentiment by simply stating, "*I need the classroom setting*" without indicating why, several other respondents emphasized the reasons they prefer in-seat courses to online. This was verbalized by one student, "*I find i am unable to focus and complete work if it is done completely online. I prefer to be able to visually and physical be in a classroom for*

better understanding of the subject that im being taught." This implies the face-to-face interaction is what is missing from online courses, while another student bluntly states, "*would rather be in person in case I need help.*" This perception was voiced by many adult learners, as represented by this student, "*They [online courses] do not fit my needs as I feel like I have problems learning just over the internet on complex courses than I do learning in a classroom where everything is explained fairly well to where I can understand it.*" These statements indicate a preference among some adult learners for the perceived benefit of instructor access in in-seat courses.

The second category also focused on themes of negative perceptions of online courses, but fits within the perceptual realm of responses. An adage states, "perception is reality," and in this case, adult learner perception factors in to online course impressions and course selection decision-making. As an example, a student's perception of his/her own technology ability affected attitudes and anxieties about online courses. One student stated that to take online courses he/she would "*have to have good internet and an updated computer, I am not very good with computers*." Another student indicated, "*I am nervous because I am not very skilled with computers.*" It appears that many students have not taken an online course because of anxiety regarding the technology component. This anxiety is again displayed in this student's response: I "*do not feel confident in my computer knowledge to commit to taking a class online*."

One topic that came up related to technology anxieties is the notion that age somehow influences technology capability. This was best voiced by this student who stated, "*I need the classroom setting, I am also older and not as fluent in computers*." While many respondents indicated they had not taken online courses due to technology limitations and left the statement there, some students offered proactive suggestions to improve their technology mastery. One student very simply said, "*The technology portion can be a little intimidating. Need tech support*." Another student showed a desire to understand online courses to not shut off that opportunity for study: "*In my opinion, there needs to be more detailed instruction with online classes and maybe offer computer classes to help us get through. All of us are not computer savvy like we would like to be. We do however want to go to school and graduate.*" This student articulated why it was important to learn in online courses; he/she attached this to the goal of graduation.

From the qualitative data, it is clear some adult learners limit their study options due to their anxieties about technology and how well they understand the technology required. This negative perception of technology may cause adult students to discount the possibility of studying online courses.

Role dissonance was the focus of the third category, often discussed in positive terms of study flexibility for learners with many competing priorities. Interestingly, this theme is also categorized within the relational response, further emphasizing the importance of relationships to adult learners. This is also the only theme that emerged as a positive perception of online courses, as they allow for significant relationships outside the institutional setting to be maintained.

Adult learners indicated the importance of their personal relationships and the necessity of academic programming that doesn't interfere with those relationships. One mom stated, "*It gives me schedule flexibility with being a mom and working full-time*." Another mom revealed her perception of role dissonance in her statement, "*I am a mom of two children under the age of 3 and it would be impossible for me to go to school full time if I didn't have the online courses.*" This statement identifies very clearly the role strain involved in this parent who is attempting to study, as well. While one student indicated the online setting is ideal for schedule purposes, "*I am able to do it in my free time instead of having a set time that I would likely not be able to commit to*" another student indicated the continued role dissonance even with online courses, "*workload for class is sometimes too much*." Other students appreciate the ability to continue working while studying postsecondary education. One student is grateful "*I am still able to work full time*." Another student goes into more detail and stated that "*online courses made it easy for*

me when I got off work to knock out my school work without having to physically go to the school," while another student detailed times able to work: online courses "*allow me to do my work when I have time be it 5 in the morning or 11 at night*." Overall, while adult learners struggle with the many competing priorities in their lives, they do indicate online education provides relief when balancing those priorities and allows them opportunities to study they may otherwise not have.

Mentioned briefly in research literature on online education is the fourth category that emerged from the qualitative data, and that is the importance of instructor access to adult learners. This theme again repeats the importance of relationships to adult learners but is a negative perception of online courses in that instructor access is limited in this format. This theme appears to segue into two separate sentiments: one of lacking face-to-face contact, and the other of instructor engagement shortcomings perceived by students. One student voiced frustration with instructor engagement: "*its sad when the class is almost over and some grades from over a month ago are not posted*." Another student voiced the same concern, stating, "*some instructors slow to respond to emails and post grades*." The qualitative data yielded many concerns regarding instructor access, as one student points out he/she "*didn't like the amount of time it took for the instructor to get back to me by email if I had a question.*" Another student's comment points to potential deficiencies with online education itself, "*Online courses do not fit my needs when I have questions about the material that I am studying and there is no instructor right in front of me to answer my questions. With online courses there are ways to contact instructors but most are not available at my time of study.*" Other students indicated their

desire to work directly with instructors face-to-face. One student showed a preference for "*more teacher interaction*" while another stated online "*teachers are harder to contact and talk with*." These responses indicate that many adult learners prefer the relational aspect of in-seat courses that allow direct interactions with instructors as needed.

Overall perceptions of online education are mixed, for personal concerns as well as those of the online format itself. Quantitative data isolated perceptions that online courses are convenient, but also found they are not perceived as valuable as in-seat courses. Through qualitative analysis it was discovered adult learners emphasize the positive of flexibility for managing their day-to-day lives, but still prefer in-seat courses and instructor access as well as suffer from technology anxieties - in sum, limiting adult student enrollment in online courses. Despite the negative themes, students who perform well in the online setting rely on the flexibility of online courses to be able to complete their studies.
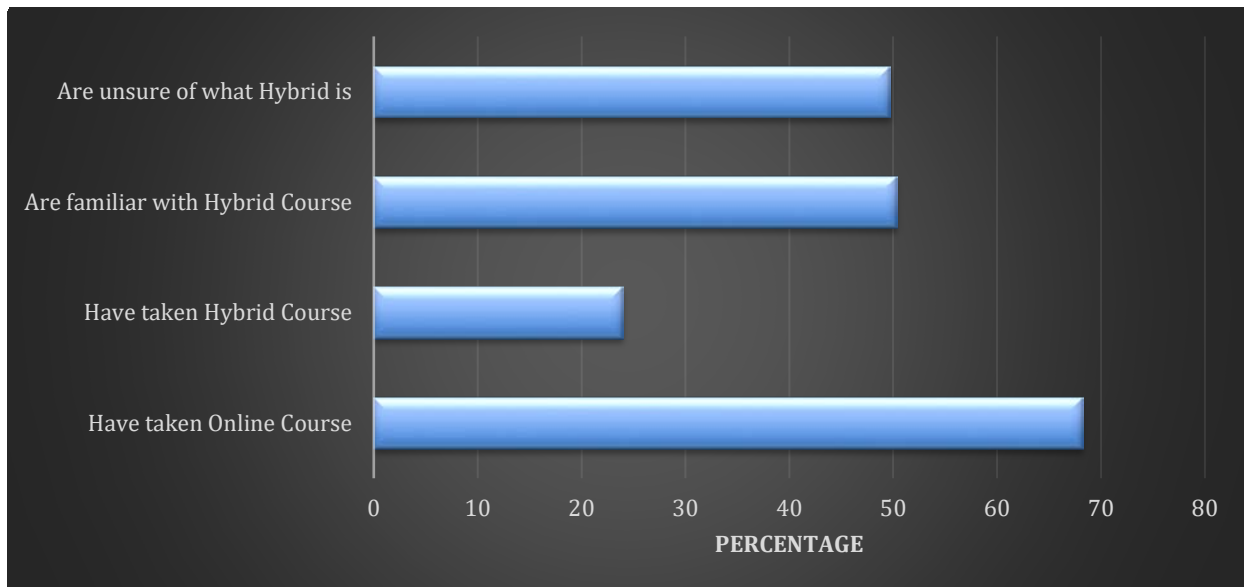
Hybrid Courses

Survey results found that many DSCC students are unfamiliar with hybrid courses: 49.6 percent of adult learners indicated that they were not familiar with hybrid courses; only 50.3 percent indicated knowledge of what a hybrid course is (Figure 18). This finding may indicate a low participation rate by adult students who have taken a hybrid course (or are aware of having studied a hybrid course).

Of those who completed the hybrid portion of the survey, 24 percent confirmed enrollment in a hybrid course. Similar to online courses, there were several adult learner perception questions regarding hybrid courses.

Figure 18: Percentage of Students Taking Online & Hybrid Courses

Regarding the convenience of hybrid courses with respect to personal or work schedules, the average score of 3.94 revealed adult learners find hybrid courses convenient for their schedules. When asked if hybrid courses were just as valuable as on-campus classes, the average was 4.17, reflecting that adult learners find value in hybrid courses. With a response of 3.97, adult learners agree that hybrid courses create more opportunity to graduate on time or early (Table 7).

In effect, hybrid courses were much less understood than online courses, making analysis more complicated, and both quantitative and qualitative results less generalizable across the DSCC student population. Of the 170 individually expressed themes in the responses, 40 of the responses indicated the respondent did not know what hybrid courses were, and another 32 respondents disclosed a hybrid course was not needed for their degree program. While one student simply stated, "*I don't know what a hybrid course is*," another student implied that he/she had not heard of hybrid courses before the survey was administered, "*you still haven't explained to me what a hybrid course is.*"

Even with the limited responses indicating knowledge regarding hybrid courses, two underlying themes emerged through the qualitative analysis. Notably, as indicated earlier, instructor access was important to students in hybrid courses. This category fits within the relational response type and is consistent with findings that adult learners desire positive interactions with the institution. The perceptions surrounding instructor access spanned the availability of an instructor for answering questions, giving feedback, and timeliness of responses. One student indicated an appreciation for hybrid courses because "*It gives me a chance to meet with my instructor, ask questions, get group and one on one instruction.*" Another student echoed this sentiment by indicating that "*I enjoyed being able to do the work on my own but meeting with the professor once a week for any concerns I may had.*" This is consistent with research that finds adult learners are more self-directed and independent than traditional students (Wyatt, 2011), but at the same time many still prefer in-person opportunities to interact with instructors. Another theme that emerged regarding hybrid courses was articulated in

this student's response: "*they are very convenient and offer flexibility in study times--still there is an actual class time to ask questions from the professor in a setting that is different than online.*" This view was reiterated by many respondents in a second category that focused on hybrid courses being a solid blend of the best of both worlds - in-seat and online.

The qualitative research indicates students who preferred hybrid courses preferred them because they were a blend of convenient online coursework with the perceived instructor-access these students desired. This "best of both worlds" category also centers around the relational response, again reiterating the significance of on-campus relationships for many adult learners at DSCC. One student summarized hybrid courses as "*perfect for subjects that I need more assistance with, but don't have the time for traditional classes 2 to 3 days a week.*" Other students affirmed this satisfaction with hybrid courses for the blended format because "*hybrid would give me that face-to-face contact with the instructor and still give me the flexibility of online.*" From these responses, it may be determined that hybrid courses are a satisfactory format that meets the needs of at least some adult learners. But the data have also made it clear that hybrid courses are not clearly communicated to adult learners at DSCC.

The overall impression found in both the quantitative and qualitative data is that hybrid courses at DSCC may be the best kept secret at DSCC right now. While many students were not aware of hybrid courses and what they offer, the students who did know what hybrid courses were appreciated the flexibility afforded through the online component but also were grateful for the instruction time and access to instructors.
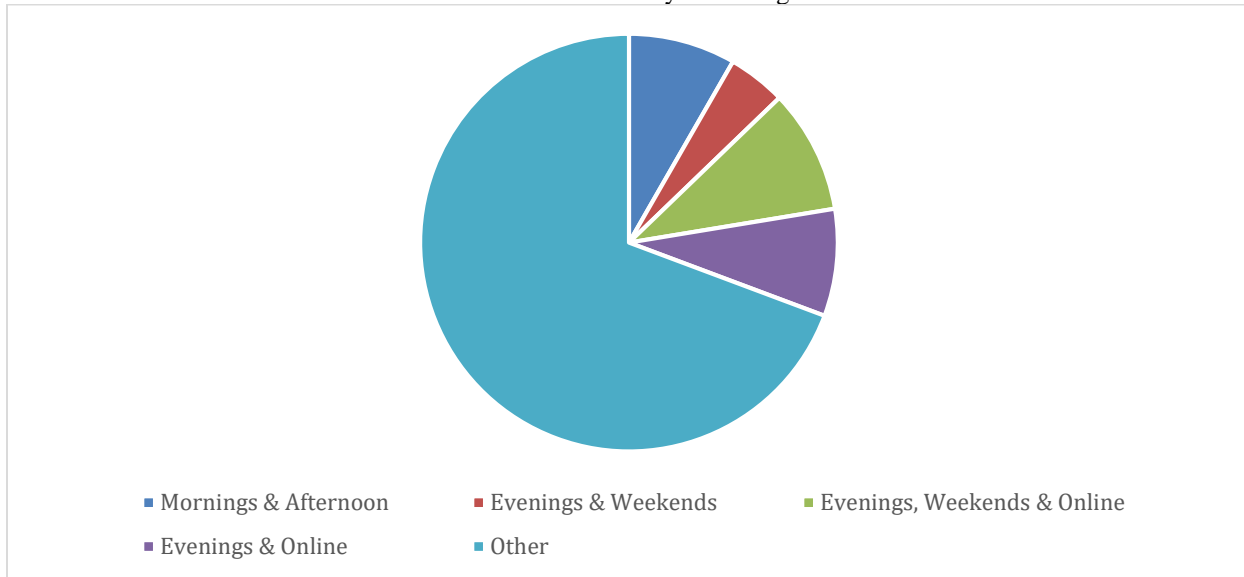
Scheduling

Adult learners generally agree that DSCC's support office hours are convenient with personal or work schedules, with an average score of 3.8 agreeing that office hours are convenient as shown in Table 7 above. The agreement is slightly less certain when asked about course scheduling: the average was 3.53, indicating a perception between neutrality and agreement. Adult learners are neutral regarding academic program interference with work schedules, with the average response being 3.31. Finally, with an average response of 3.62, students do perceive possible delays in graduation with the current course meeting times.

While the quantitative data may seem contradictory, combining the quantitative data with the qualitative responses creates a discerning theme regarding scheduling. Many students cited similar sentiments regarding DSCC scheduling: whether it be office hours or courses, current institutional schedules proved difficult for many adult learners to navigate. From both qualitative and quantitative data, it appears adult learners need more flexibility in course and office hour availability.

Course Scheduling

Adult Learners were asked which course offering times would best meet their needs and multiple answers emerged as popular. As seen in Table 8 below, nearly 10% of respondents said they would prefer weekday evenings, weekend or online courses. Another 8% preferred weekend and online courses while another 8% wanted weekday mornings and afternoon courses, which are already offered. Finally, another 5% preferred weekday evenings and weekend courses only. With nearly a third not answering this question, much is left to be explained about the course offering times for adult learners.

Table 8: Preferred Course Times for DSCC Adult Learners by Percentage

- Mornings & Afternoon
- Evenings & Weekends
- Evenings, Weekends & Online
- Evenings & Online
- Other

Again, with the low response rate in quantitative data, this leaves an opportunity for adult learners' actual stories to fill in the knowledge gaps. In terms of course scheduling, student responses in the qualitative data echoed the same concerns in that there needed to be more flexibility in course offerings. These responses reflect mostly situational aspects and some role dissonance, as students identify their scheduling needs in this feedback. One student indicated the "*need for more evening classes for those who work during the day; there used to be a lot more evening classes offered.*" Another student, without stating why, simply said DSSC does "*need more classes in afternoons and evenings.*"

An interesting trend found in comments was that regarding science courses. There were several comments regarding the availability of science courses. One student definitively stated, "*science classes with labs are not offered enough especially at night*." Another student also wanted more science course offerings, but in another format: "*DSCC needs more online courses, especially science courses.*" This is consistent with qualitative data regarding

student desire for more academic programs in STEM fields. The same sentiment regarding class offerings was voiced by this student; "*wish all classes were offered every semester.*" One student addressed in his/her comment what he/she believed is the root of the problem in course offerings in that there are "*not enough... teachers to offer different [c]lass times which conflicts with work schedule.*" Responses in the qualitative data indicated an overarching desire by some students for more classes to be offered regularly.

The qualitative data revealed two themes in course scheduling, both resting on situational responses. The first theme is the desire for more evening courses to fit adult schedules and the second theme is the demand for courses to be offered more frequently in varying formats. Both themes indicate that DSCC should expand course offerings to better meet the needs of adult students.

Campus scheduling introduced an opportunity to utilize qualitative data in a way that quantitative data could not. While it seems responses to scheduling are mixed in the quantitative analysis, qualitative analysis

of adult learners' responses indicates a deeper story that involves not only increasing course offering times, but also increasing offering types.

Office Hours

Adult students were asked to respond to which office hours would best meet the needs of DSCC adult learners. As Table 9 depicts, the most common response (13.4%) was combined weekday hours (8am-5pm) and online offerings. Another 9% preferred evenings, weekends and online office hour options. Additionally, the majority of survey respondents would like to see online office hours if given a choice. However, these responses are limiting as 45% of survey respondents did not answer the question.

Table 9: Preferred Office Hours by DSCC Adult Learners by Percentage
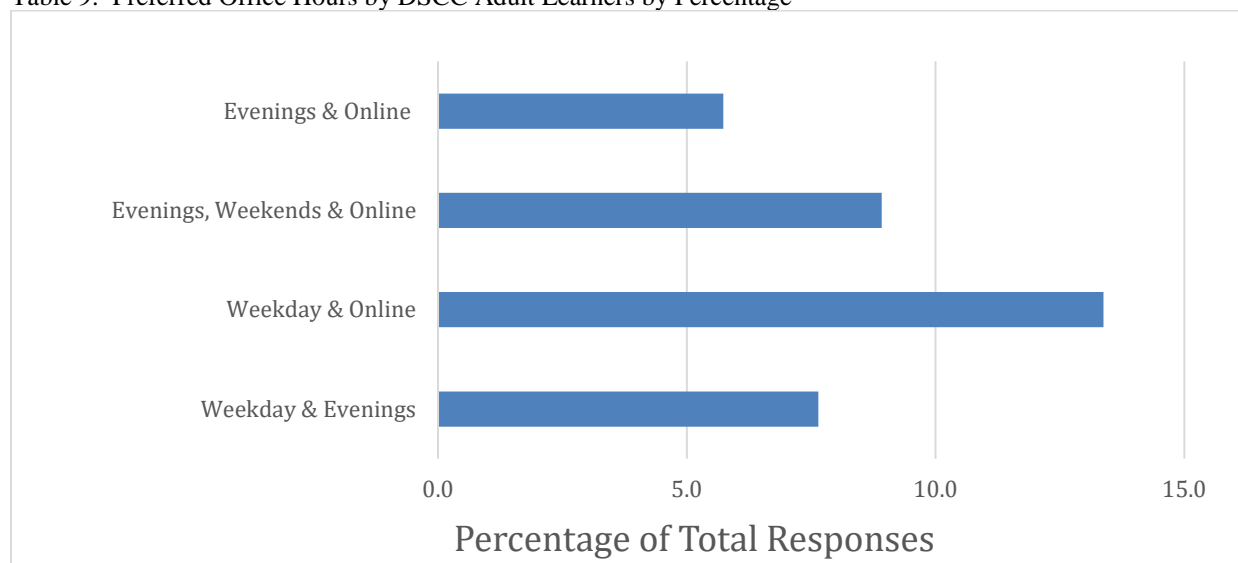
In contrast, qualitative data painted a much more detailed and quite different picture regarding office hour availability and convenience. Qualitative data revealed that current office hours, Monday through Friday, 8 a.m. to 5 p.m., prove inadequate for adult learners at DSCC. While the interactions with staff were mostly positive, as highlighted by this student, "*staff has always been courteous and helpful in solving issues*," the availability of staff outside normal business hours seemed to be a concern. This was best articulated by a student who stated, "*it can sometimes be hard to get to some of the business offices, advisors, tutoring services like the ASC earlier in the day when you work during the hours that they are normally available to meet.*" The relational aspect of the responses was clearly present in this data, as well the situational aspect of role strain and attempting to balance multiple conflicting priorities for time. As one student suggests, "*school holidays to be lined up with the county that each campus is located would help a lot of parents*" be able to attend DSCC. In general, the responses regarding office hours indicated a need for expanded hours to more adequately serve adult students' busy schedules.

Comparatively, although the quantitative and qualitative responses varied and painted separate pictures, adult learner statements attest to the fact that while interactions with staff are positive, there is a need for extended office hours to meet working adult schedules.

Although much adult learner research highlights accelerated programs as a preferred flexible option, adults at DSCC did not indicate as much interest as was expected. Figure 19 underscores the quantitative results from the DSCC Adult Learner Needs Survey, in which just under 50 percent of students would like to see 10- or 8-week course options, but the 16-week course format had the highest student preference (37 percent). Less than 10 percent of respondents indicated an interest in 5-week courses. This interesting discovery is consistent with the qualitative data; one student simply stated, "*lengths of courses is not an issue.*" Another student went into more detail and confirmed an issue highlighted earlier, "*the length of the class does not matter, but the time availability does.*" One student comment did note the possible benefits of accelerated learning programs on one aspect of DSCC education: "*with me being an adult student it is hard to balance school, work, family, and anything else that comes my way. I feel that if the support classes (writing, reading, math) were shortened… then there would be a much higher and faster program completion.*" Overall, the little interest in accelerated programming highlighted in both quantitative and qualitative responses places it as a lower priority than course and office scheduling, and most likely not an area of overarching DSCC adult learner concern now.

Figure 19: DSCC adult student preferences for course length formats, in percentages:
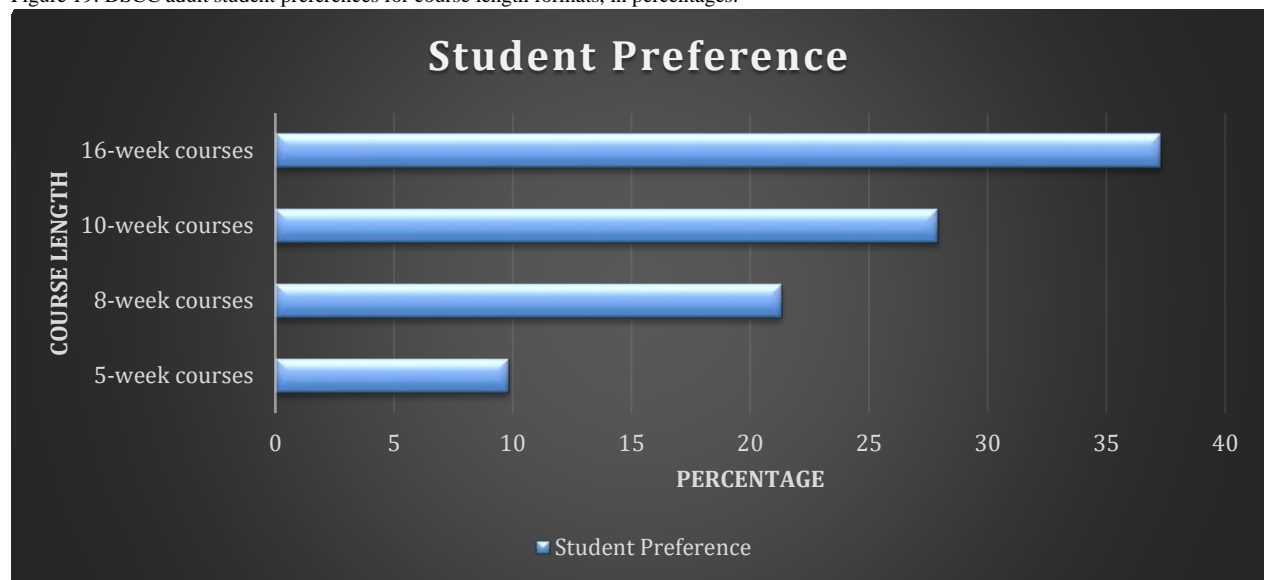
Discussion

Much of the analysis in this study was consistent with previous research findings. Recent research has consistently concluded that adult learners are a diverse group of students in which set common characteristics do not exist (Anderson, 2011; Brown, 2002; Chickering, 1981; Hanniford, 1993; Turner, et al, 2007; Van Noy & Heidkamp, 2013). This study, like previous research, also found that DSCC adult learners did not share common demographics that would allow classification of the population into one homogenous group. Further, this study also established that there are no statistically significant demographic characteristics that determine adult learner persistence. Previous

findings have confirmed this assertion, as other research has highlighted the importance of various or "menu" options of study for adult learners (Anderson, 2011; Chao, 2007; Chickering, 1981; Hanniford, 1993; Spellman, 2007).

This study's finding regarding adult learner college grade point average (GPA) and persistence is also consistent with the previous extant literature. Independent studies by Wlodkowski, Mauldin, and Gahn (2001) and Anderson (2011) both discovered GPA stands as a strong indicator of academic success and persistence. Anderson's (2011) study found that a 3.5 or higher GPA resulted in 54.3 percent student retention, whereas a 3.0 to 3.49 GPA produced a 23.2 percent persistence rate, and as GPA decreased, so did the persistence rate of adult learners. The study conducted by Wlodkowski, Maulden, and Gahn (2001) predicted persistence accurately for 78 percent of cases using three factors: transfer credit, GPA, and financial aid. Evidence presented by Brown (2002) also confirmed the importance of grade point average in a student's persistence in higher education. While these studies confirm the positive relationship between GPA and persistence, possible reasons behind this relationship remain unknown. Future research into this relationship would be well-advised to explore this association.

Even though findings conflicting based on analysis type, this study did highlight in one analysis a statistically significant positive relationship between online course enrollment and adult learner enrollment. Much like this study, research into online enrollment and persistence has yielded mixed results. Park and Choi (2009) assert that while online education may provide convenience and flexibility, the instance of high-dropout in online courses is concerning. Further, there is a lack of research regarding completion rates of online programs, and little is known regarding why students are successful or not successful in online courses (Kemp, 2001; Muse, 2003). Diverging from these findings, some studies have affirmed that online education provides convenience and flexibility to students who would otherwise not be able to study higher education coursework due to conflicting schedules (Chao, 2007; Mansour & Mupinga, 2007). Further, Muse (2003) established that students who are academically and technologically prepared, as well have study support mechanisms in place, are most likely to succeed in the online environment. It is safe to state at this point the value of online education to adult learner persistence and completion has not been conclusively determined, and further research must be conducted to explore more detail into how this relationship interacts.

Although a relatively new use of educational technology, hybrid education has received much attention in research years. Adult learners at DSCC, when knowledgeable about hybrid courses, had mostly positive perceptions and experiences with education. Prior research confirms this sentiment: students who enroll in hybrid courses appreciate the flexibility and convenience in schedule and pace (Garnham & Kaleta, 2002; Ginns & Ellis, 2006; Hiltz & Turoff, 2005; Vaughan, 2007). Hybrid education, also called blended learning (Graham, Woodfield & Harrison, 2012) and e-Learning (Ginns & Ellis, 2007), is loosely defined as education that occurs within both in-seat and online components within one course (Ginns & Ellis, 2006; Graham, Woodfield & Harrison, 2012;). Blended education, when done well, combines the best of both in-seat and online class experiences to create a unique and effective learning experience for students (Garnham & Kaleta, 2002; Vaughan, 2007). Beyond this definition, though, it is difficult to specify further what hybrid is as Vaughan (2007) points out that there are no defined in-seat

class or online requirements, and each institution may define this for their own purposes.

Regardless, findings have discovered hybrid education generally has positive course outcomes; Garnham and Kaleta (2002) found that faculty and students both felt there was greater course and outcomes achievement in hybrid courses than in traditional in-seat courses. The reason for this varies, but one study confirms that hybrid education shifts "the focus of the classroom… from a presentational format… to one of active learning" (Vaughan, 2007, p. 83). Adult learning theory emphasizes the importance of active learning techniques with adult learning, possibly making hybrid education an excellent option among many for adult students.

A few notable areas of further development were that this study revealed relational aspects of higher education that are important to adult learners. This study analyzed why relationships are important to adult learners: faculty interactions were important for enhanced classroom instruction and understanding, and positive staff interactions were meaningful to adult learners as indicators of perceived college interest in adult learner success. This was further asserted by Mansour and Mupinga (2007), who cited the importance adult learners place toward feeling connected to faculty. Anderson (2011) also found a relationship between positive faculty and adult learner interactions and adult learner satisfaction. This same sense of satisfaction was determined by Chickering (1981) to be similar to traditional students' satisfaction with faculty interactions. While satisfaction may be linked to increased retention, in contrast this same study conducted by Anderson found that even though adult students may be satisfied with faculty interactions and institutions attended, they may still depart early due to outside

circumstances beyond institutional control (Anderson, 2011. Regarding staff interactions on campus, MacKinnon-Slaney (1994) affirmed the lack of research knowledge on how staff-student relationships interplay with adult learner persistence. Notwithstanding, Hardin (2008) found that staff who serve adult learners must understand and be interested in adult learners to serve them well. Further, other research into adult learners has found that "personal attention is the basic principle behind good retention rates" and that institutions must focus on adult learners as individuals and provide services with that always in mind (Smith, 1993, p. 14, 23). This capstone study confirms this research and further posits the importance this has for adult learners.

The findings of this study do suggest that some aspects of Tinto's Student Departure Model may have some applicability to adult learners in higher education, as multiple other researchers have attempted to establish. Ashar and Skenes (1993), while affirming that Tinto's model does not distinguish adult learners from traditional students, still attempted to apply Tinto's model to adult learners. The researchers found that social integration has a positive and statistically significant relationship with adult learner persistence (Ashar & Skenes, 1993). Contradicting this finding was a conclusion drawn by Anderson (2011), who found that social integration did not affect adult learner persistence since adult learners spent so little time on campus and had little demand for on-campus social interactions. While the application of Tinto's Student Departure Model to adult learners has been met with varying levels of successful incorporation, this study does reinvent the possibility that Tinto's model may be adaptable to adult learners.

Consistent with the literature, this study also affirms the heterogeneity of adult learner populations and instills the argument

that there is no one effective way to serve adult students. The major findings of this study - that college grade point average (GPA) has a positive, yet small, relationship with adult learner persistence while online study has a negative relationship with adult learner persistence, is consistent with previous research. As with much previous literature, though, this project generates more questions that need to be detailed further in future research. Specifically, it has yet to be determined why (and to some degree, if) GPA and online enrollment share a relationship with adult learner persistence. Also, while research supports this project's finding that campus relationships are important to students' perception of institutional concern for their welfare, it has not been determined if this perception can overcome outside factors that may cause early adult learner departure from higher education. Future research study should also address the specific relationship adult learner persistence has with the relational aspects of college campuses, and whether the campus social facet can overcome external barriers to education.

It is commonly acknowledged that adult learners are distinct from traditional students and present a diverse set of challenges that higher education institutions have yet to successfully discover and resolve. This study confirms that conclusion, and creates opportunities to expand the research knowledge into further undiscovered relational distinctions. This study implicates the importance of campus relationships to adult learners, as well as confirms the heterogeneity of adult learner populations. Within this group, the relationship between GPA and persistence must be studied further and dissected to better understand what characteristics affect adult GPA and how GPA relates to persistence in adult students.

Conclusions

While quantitative and qualitative data analysis revealed many areas with which adult learners were satisfied with DSCC, the data also allowed for recurring themes of deficiencies to be addressed. Regarding the question of which variables emerged as predictors of adult learner persistence at DSCC, only two factors were statistically significant. Student success as expressed by GPA has a positive relationship with adult learner persistence. In summary, the better an adult student's GPA the more likely that student enrolled in further coursework. The other predictor found in this research study was whether an adult learner enrolled in an online course. This result is limiting and may be a spurious conclusion, or it could reflect that students willing to take non-traditional courses are in fact, less likely to persist. Further research on online and other course mediums on persistence rates is encouraged.

Qualitative research identifies which new academic programs adult learners in the DSCC service area prefer. Results found that DSCC should consider expanding its healthcare related programs to exploit the interest of the survey results. Another area to explore is advertising the existing general liberal arts programs to the DSCC adult learner base. Many respondents want to enroll for the experience of college or to fulfill a dream of attending college opposed for a specific program. Promoting the experience of finishing a college degree resonated within the survey results. Finally, adult learners prefer programs in which DSCC already excels. Either the students are not fully aware of what popular programs are offered (such as education) or they are not promoted enough in recruitment to communicate these programs' presence.

Most adult students prefer online and hybrid courses as legitimate options that not only help them graduate on time but also are

perceived as more convenient. However, many adult learners still need to know what hybrid courses are as many are unfamiliar with their structure. As for course scheduling, nearly a fourth of respondents want more weekend and evening course offerings while continuing their adult learning. Many adult learners found the current day-time office hour offerings satisfactory, but also many said evening times would be helpful. Finally, a lower priority area of further inquiry, at a potentially later date, is the potential of an accelerated program for adult learners who are motivated to complete a degree or certificate in a condensed amount of time.

This project compiles previous research of adult learner literature and strengthens the framework in which adult learners are understood. Given the lack of identifiable predictors in the current research regarding adult learner persistence, it was not surprising that of the multiple variables considered in this study, no new factors emerged outside of student success. If anything, this study confirms what is already suspected about adult learners: there is no smoking gun or a single set of predictors which can be generalized to a bigger adult learner population that adequately or reliably forecasts persistence. Of all the risk factors that one would suspect have statistical significance on the ability of an adult learner to succeed (having children, full-time job, first generation student, etc.), none appeared to emerge in a meaningful way in the statistical analysis. This conclusion begs for more research that dissects the major differences between traditional 18-22-year-old college students and adult learners. Additionally, one may conclude that the complexities and sheer variety of factors affecting adult learners is so vast, that only an individualized analysis and attention at the student level would yield applicable results.

Future research may examine the motivations of adult learners such as promotion, salary increases or personal satisfaction as reasons to persist. Another difficult-to-define (and measure) variable to consider is the level of "grit" adult learners may have to finish what many would consider an optional degree. Right now, higher education attempts to understand adult learners using the same lens as traditional students, which may be inappropriate at best. Given the lack of clear indicators by this study, future research should consider the role of individual counseling, individual advising, and individual course plans as no general principles other than GPA can sufficiently predict persistence.

Limitations

When reading the qualitative data as it was being submitted in the online DSCC Adult Learner Needs Survey, it was discovered early in the survey period that some DSCC employees had completed the survey. Future reminders to complete the survey were reworded to strongly reflect student-only feedback was intended for the survey. No further employee indicators were submitted, and data related to employee responses was thrown out of the analysis.

Another general limitation of many surveys and included in this analysis is that the survey respondents were all volunteers. With no incentive offered or mandatory compliance, results depended on the willingness of adult learners to take the time to complete the optional survey with volition. As a result, many qualified adult learners enrolled at DSCC in the fall of 2017 did not offer their feedback, which could have strengthened conclusions and given a higher sample size (always a preference when completing statistical analysis). The practical result of a volunteer only survey response could reflect possible selection bias within the instrument. If selection bias is present, it erodes the validity of the study. To counter this limitation, we compared the survey

sample population to the overall DSCC adult learner population, and established that the populations were similar enough that survey conclusions can be applied to the overall DSCC adult learner population.

Perhaps the most non-congruent limitation of the study were the two separate definitions of persistence. As one may recall, the DSCC administrative data defined persistence as enrolling in more than one semester at DSCC. However, the DSCC Adult Learners Needs Survey defined persistence as enrolling in 13 or more credit hours. The reason for this misalignment occurred when the survey design was already completed and dispersed before the DSCC data was received. If it was known that only semester data were included in the administrative data set (as opposed to credit hours), the survey may have been modified before the response period. As a result, both definitions were utilized as proxies for persistence. Though attaining 13 or more credit hours can easily be attributed to more than one semester of coursework, these two definitions are not precisely the same. At best, it may be concluded that they are similar enough to research the concepts of persistence, but are not identically aligned.

Although the total number of survey responses is sufficient to analyze without the need to adjust for a low sample size, some of the preference questions later in the survey had significantly lower response rates. For example, Question 22 concerning office hours, only 55% of those taking the survey answered this question. Low response rates for some of the Likert scale questions obviously begs the question of why a significant number chose not to complete a handful of questions. At this point, there is no explanation for this except potential fatigue or rushing to finish the survey. Low response rate ultimately reduces both validity and reliability confidence for this subset of questions. However, the study results are

worth noting because the outcomes strongly reflect what the literature predicted in both analysis of the survey and the data rich DSCC generated data.

Although not necessarily a limitation to our analysis, another consideration to this study is that students who had prematurely left DSCC were not included in the survey collection. Due to the short timeframe of this research, it was not feasible to attempt contact information collection and verification of students who were early departures from DSCC. It was also assumed that since this was not a captive audience of active students, the response rate would have been too low to yield substantial statistical results. This missed target population would have offered additional insight into the population that was most likely to return to DSCC for study under the Tennessee Reconnect grant.

Recommendations

In a proactive approach to address changing social systems in the state of Tennessee, Dyersburg State Community College perceives an influx of adult learners starting fall 2018. The prevalent factor contributing to this increase of students is the Tennessee Reconnect Grant. Through a careful review of the extant literature and collection of data specific to DSCC, several recommendations are made. These practical recommendations for DSCC are offered in chronological order to ensure support systems are in place before implementing new recruiting or outreach initiatives:

Academic Support

While the quantitative data does not necessarily reflect a needed change in class offering times, the qualitative data makes it clear that adult learners' attendance is limited due to current course offering times. Based

on the survey responses, it is recommended that DSCC begin to offer evening courses to facilitate working adult students' schedules. It is further recommended that DSCC evaluate programs most likely to serve students who need evening courses and begin implementation with only those programs. If the demand for evening courses grows, then a phased roll-out of courses can occur over time, minimizing costs for the institution.

Regarding accelerated programs, input from DSCC students indicates less demand for accelerated programs than research suggests. With over 50 percent of adult learners still preferring 16-week semester courses, this makes accelerated programming less priority for consideration than other initiatives. This contrasts with the research literature which highlights adult learner demand for accelerated programs (Wlodkowski, 2001, p. 5). We recommend that DSCC conduct a survey gauging student demand for accelerated programs annually to determine if this type of programming would become a popular alternative for adults. It is commonly known that circumstances surrounding adult learners change frequently; it is important DSCC consistently gauge the needs of its adult learners and make updates and changes as necessary to fill any needs.

Curricular/Academic Programs

Hybrid Education

While many adult students at DSCC were not aware of hybrid courses, the feedback from students who did know about them was overwhelmingly positive. This was a surprising finding as most research highlights online education as the educational modality of the future. There are many benefits to this education modality for adult learners when done well.

We recommend the following three courses of action based on both research findings and DSCC student survey responses. First, communicate hybrid education better to adult learners through academic advising, the DSCC adult student coordinator, and classroom instructors, when appropriate. Second, adult learners are seemingly unaware of the benefits of hybrid education, so it is necessary to educate these students on the benefits of hybrid education: greater flexibility than traditional in-seat courses, along with face-to-face contact that many DSCC students cited as missing in online courses. It is through the combination of the positive attributes in both in-seat and online courses that students may enjoy "the best of both worlds."

The last recommendation builds upon the first two and regards evaluating hybrid courses to determine outcomes achievement effectiveness for adult learners. To ensure hybrid courses not only meet the needs of adult learners but also adequately educates these students, it is necessary to assess outcomes achievement in hybrid education, as compared to both online and in-seat. This recommendation is based in research that undergirds the importance of measuring hybrid success. Garnham and Kaleta (2002) found that faculty perceived students as learning more in hybrid courses than in-seat courses, and emphasized higher exam scores, more rigorous papers and discussions, and higher quality projects in hybrid courses. Through academic assessment of outcomes in hybrid courses as compared to both in-seat and online courses, DSCC may determine the effectiveness of the hybrid modality and be able to make improvements over time to increase learning.

Academic Programming

The surveys found that adult learners in the DSCC service-area preferred more academic offerings in health professions,

STEM, humanities, and education. Interestingly, there were several requests to offer more foreign language courses and programs as well. One recommendation regarding foreign languages is that DSCC research languages spoken in its service-area and gauge students for interest in specific foreign language instruction. Based on that interest DSCC may make informed decisions on whether to offer more foreign language courses.

In its Adult Learner 360 report, the Council for Adult and Experiential Learning recommended that workforce training and certification programs be developed in partnership with local organizations and businesses (2017). Data collected from DSCC current and potential students in fall 2017 highlights a desire for expanded programming in health professions, foreign languages, STEM fields (most notably computer science), and education. Potential large business partners to contact and create programs to benefit include ERMCO, Tyson, NSK and Tennova Healthcare.

An aspect of academic and professional program development that research recently found popular and effective for adult learners is "stackable" credentials (Eyster, Anderson & Durham, 2013; Ganzglass, 2014). The Department of Labor defines stackable credentials as sequential credentials that can be completed over time to facilitate career pathways (TEGL 15-10, www.doleta.gov). Considering the employment options in northwest Tennessee creates an opportunity for business partnership, as stackable credentials benefit health professions, education, and management (ACT Policy Brief, 2011). We recommend DSCC develop stackable credential programs in partnership with local businesses in the DSCC service-area to maximize adult learner programmatic needs.

To further identify adult learner programmatic needs, it is important DSCC survey its adult population to determine their completion goals. As we've established in this project, adult learners do not always attend higher education to complete an established program, but in some cases to only complete a series of courses or short-term certificates. It is important to define adult learner persistence and completion to develop programs that meet adult learner completion needs. Possible means to do this are to ask adult learners during the admissions phase, as part of an orientation program for adult learners, through the academic advising process, or in exit surveys/interviews.

We noted that many of the education programs requested in survey responses are programs already offered by DSCC, indicating a need to market and inform the DSCC service-area of education program offerings. As DSCC explores opportunities to increase academic programming it is recommended that DSCC solicit feedback from local businesses and organizations in the areas of health professions, STEM fields and education, and incorporate this feedback into its curriculum.

Student Services Support

Office Hours

As is commonly cited with adult learners, DSCC adult students reported lack of office hour availability around their work schedules. As Mercer (1993) posited, adult learners leave college study due to conflicting time demands. As such, it is critical that higher education institutions find means to serve adult learners with their availability and needs in mind. The need for office hours both during and outside normal business hours is confirmed by Chao (2007) who states adult learners have a separate set of needs that require separate consideration from traditional students. Ekstrom (1972)

found that many adult students who work may be required to take time off from work, and possibly lose income, to speak with campus staff during traditional office hours. This lack of consideration for adult learner scheduling needs creates a sense of alienation for many adult learners on college campuses (Fairchild, 2003). Work by Anderson (2011) concluded that many adult learners depart higher education early due to circumstances outside the institution's control; because of this, institutions need to reduce as many barriers as possible to increase student ability to study. Two recommendations for DSCC arise through both the research literature and on-campus student surveys.

The first recommendation is that DSCC extend its campus services office hours to allow adult learners the opportunity to meet with campus staff outside normal office hours, thus allowing adult learners more opportunity to come to campus outside normal working hours. In speaking with the Vice President for the College, Dr. Tamara Daniel, it was confirmed that most students can reach campus within one-hour driving time. To recognize student scheduling needs this capstone project recommends that student services such as financial aid, academic advising, Academic Success Center and the bookstore expand their office hours to stay open until 6:30 p.m., Monday through Thursday. This can be done as an initial pilot lasting one semester with usage measured to determine effectiveness and longevity.

The second recommendation is an alternative means to serve adult learners. Both DSCC surveys and research highlight the benefits of creating digital services such as online chat, reference websites, and social media to serve adult learners.

Digital Services

Another emerging area supporting adult learners is digital services (Gilardi &

Guglielmetti, 2011). Research not only identifies the benefits to adults of this modality, but also highlights effective ways in which this is being done. Gast (2013) underscores the online support provided by Penn State through a website that helps adult learners navigate through educational processes such as admissions and provides an extensive online library of support information. Further discussed by Gast (2013) is the online tutoring program at Indiana University - Bloomington; this program provides tutoring videos to students to access online. Other research has found that institutions are using social media such as Facebook to socialize adult learners to campuses (Gilardi & Guglielmetti, 2011). Several recommendations are found within the research literature, as summarized by Brown (2002), who stated that a variety of options to support adult learners must exist to meet their various needs, such as "electronic methods of communicating with students… telephone registration and advising appointments… website postings…" (p. 72). Fairchild (2003) built on this by further asserting that the goal of digital services is to eliminate the amount of time adult learners need to be on campus outside classroom activities and reiterating the importance of options such as online registration to meet this goal. We recommend the addition of online instant chat services to the services DSCC provides students. Online chats provide students an opportunity to address issues and or concerns without having to allot time to come to campus, but also allows students to have individual attention. Qualitative analysis connects the importance of relationships for DSCC adult learners to campus experiences, so any digital service options should allow that sense of connection for adult learners.

Reconnect with Former DSCC Students

As the final recommendation, after academic and support systems are in place to enhance support to adult learners, we recommend DSCC begin a campaign to contact former students. To reconnect with these students DSCC needs to review data since 2008 for students who left DSCC before degree completion, filter these students through the National Student Clearinghouse to eliminate program completers (Lane, 2012), and structure a recruiting message to re-engage those students. In its 2007 Lumina Foundation Return to Learning report, three courses of action relevant to this project are recommended to engage adult learners:

1. Create short-term certificate programs that are credit-bearing and may be counted toward a future degree.
2. Create programs that are offered on a part-time basis.
3. Create convenient programming based on adult learner needs.

This report reiterates the contention that adult learners' academic goals do not correspond to institutional completion definitions, so institutions must offer programs that support adult lives and allow the flexibility for adults to enroll as needed through their lives (Turner, et al, 2007). Through the recommendations made above, these three points are addressed as means for DSCC to enhance its services to adult learners and promote adult learner persistence.

Recommendations for Further Research

Curricular/Academic Programs

It is also important to note that while offering academic programs via multiple modalities to have the farthest reach with adult learners is critical to adult learner success, academic programs alone cannot be the only solution. The literature underscores the diverging definitions of persistence between higher education institutions and adult learners. It is commonly understood in higher education that persistence is program completion of some sort (Wlodkowski, Mauldin & Gahn, 2001). In contrast, Anderson (2011) asserts that adult learner goals are not always program completion but may be only skill or knowledge acquirement that does not correspond with a programmatic offering. Further, it is due to this variance in goals that adult learners drop in and out of college study as needed throughout their lives (Anderson, 2011). Recognizing the importance of this finding establishes the need for institutions to redefine adult learner persistence - and become flexible in facilitating both adult learner goal completion and institutional definitions of completion. DSCC should evaluate adult learner enrollment trends to determine if there are any natural stopping points in study and determine possible certificates of completion that surround a certain number of hours completed, topics studied or skills acquired.

Online Education

As Online Education becomes more common and is oftentimes touted as a route to success for adult learners (Chao, 2007), DSCC should regularly study its online adult learners to determine characteristics of success. Muse (2003) concluded that the reasons students fail in online learning is mostly unknown, meaning research still needs to determine factors of success and failure. As part of a critical analysis of online program effectiveness, DSCC may utilize research to inform indicators to measure for predicted success in online courses (Mansour & Mupinga, 2007). Park and Choi (2009)

underscored several characteristics to include in an analysis: internal, such as age, gender, employment status and educational background; external, such as perception of family, institution, and workplace support; and motivation, as measured by relevance of and satisfaction with an academic program. Further, since institutional populations vary by institution, DSCC should incorporate and update characteristics it feels may contribute to online adult learner success into its analysis. It is recommended that DSCC analyze the characteristic data of online adult students over time, and via regression analysis determine characteristic predictors of success. Persistence programs specific to online programs, such as academic development, advising, or success coaching may be implemented from the findings of such a study.

Another important consideration in online education is student access to the internet. Figure 20 highlights the broadband internet access of the population living in the DSCC service-area. With current restrictions in the DSCC service-area, online education must be part of a multi-faceted strategy to serve adult learners, but cannot be the only means to serve adult learners. This gives further credence to Chao's (2007) assertion that adult learners need a "menu" of course and programming offering options to utilize the option that best fits an adult learner's needs at any given time and remains flexible and interchangeable as those needs change.

Figure 20: DSCC service-area counties population without broadband internet access (in percentages):
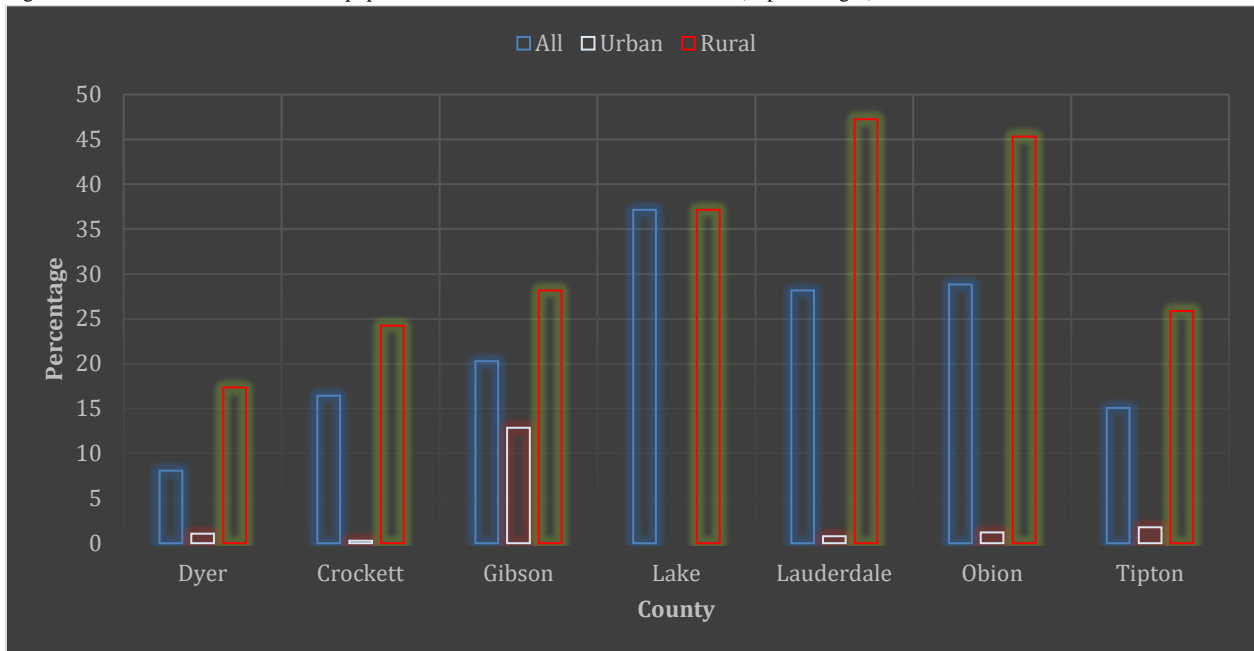
Understanding Adult Learners

Finally, we realized late in this study that the assumption one could analyze adult learners in the same or similar lens as traditional students is flawed. As previously discussed and as reflected by the literature review, no decisive persistence predictors emerged except for adult student success as manifested by college GPA. Perhaps a more effective study design may have resulted if less attention towards the traditional predictors that are significant for younger students were not automatically applied to adult learners (such as Pell Grant status, first

generation college student, marital status, number of dependents, etc.). Instead, research may need to focus its attention to discovering the predictors of adult learner persistence (such possibilities may be career aspirations and direct career benefits of educational attainment, level of "grit" or determination, adaptability, and employer support).

As a final thought, it is important to note that adult learner persistence may be incorrectly defined in higher education. Much research and literature to this point frame adult learners through a lens of understanding traditional 18-22-year-old students. Typically, higher education labels persistence as completion of a defined program (as defined by the institution); it is possible adults do not share this goal, and instead consider persistence the completion of goals that are not constrained by programmatic offerings. If this is the case, higher education institutions need to adapt definitions of adult learner persistence to fit the need and desire of adult populations. It is imperative future research find an understanding of adult learner motivations and educational goals before adult learners may benefit from findings. Building upon this future research, it is up to higher education institutions to determine actual adult learner needs and to reformulate definitions to reflect those needs.

Appendices

Appendix A: Tables

Table 10:

DSCC Administrative Data: Persistence Variable One-Sample Test

| | Test Value = 0 | | | | | |
| | | | | | 95% Confidence Interval of the Difference | |
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
OccuranceCPY	104.930	6602	.000	3.201	3.14	3.26

Appendix B: Surveys

FAFSA Frenzy Survey:

You are invited to take part in a research survey regarding support programs for adult learners at DSCC. Your participation will require approximately two minutes. There are no known risks or discomforts associated with this survey. This survey will aid DSCC in determining necessary supports for adult learner success. Taking part in this study is completely voluntary. If you choose to be in the study you can withdraw at any time without adversely affecting your relationship with DSCC. Your responses are anonymous and will be kept strictly confidential, and digital data will be stored in secure computer files after it is entered. Any report of this research will not include your name or any other individual information by which you could be identified. Completing this survey indicates that you are 18 years of age or older and indicates your consent to participate in the research.

1. Which of the following types of classes do you plan on taking during your first year at DSCC? Circle all that apply.
    a. On-campus courses offered between 8am and 5pm
    b. On-campus course offered during the evenings (if available)
    c. Online courses
    d. Hybrid courses

2. Circle the answer that best describes you.
    a. First time ever enrolling in higher education
    b. Have completed some higher education coursework
    c. Have previously earned a higher education credential or degree

3. What DSCC program interests you the most or you plan to complete?
    a. Healthcare professions (nursing, medical coding, EMS, etc)
    b. Agriculture
    c. Business
    d. Other: Please write down_____

4. Are there other degree or certificate programs you would like to take but aren't offered at DSCC? Name all that come to mind: _____

5. What best describes why you're enrolling at DSCC?
    a. To seek better employment
    b. Current employer is supportive or will provide pay raise upon completion
    c. Change of career interest
    d. Personal interest
    e. Other: Please write down_____

DSCC Adult Learner Needs Survey:

Instructions: You are invited to take part in a research survey regarding support programs for adult learners at DSCC. Your participation will take less than ten minutes and is completed online. There are no known risks or discomforts associated with this survey. This survey will aid DSCC in determining necessary supports for adult learner success. Taking part in this study is completely voluntary. If you choose to be in the study you can withdraw at any time without adversely affecting your relationship with DSCC. Your responses are anonymous and will be kept strictly confidential, and digital data will be stored in secure computer files. Any report of this research will not include your name or any other individual information by which you could be identified. Taking this survey indicates that you are 18 years of age or older, and indicates your consent to participate in this survey. If you have any questions regarding this survey, please contact the researchers, Ryan Quarles, ryan.f.quarles@vanderbilt.edu or Mara Woody, mara.roberts@vanderbilt.edu

Section A: Demographics

1. Are you currently a student at Dyersburg State Community College?
   - ☐ Yes
   - ☐ No

Dependent question: If no, what is your reason for not currently taking courses at DSCC? Check all that apply.
   - ☐ Work conflict
   - ☐ Family conflict
   - ☐ Other scheduling conflicts
   - ☐ Classes not scheduled at times I could take them
   - ☐ Classes needed for my degree were not available
   - ☐ Did not offer a degree program that I needed/wanted
   - ☐ Did not find value in a program
   - ☐ Felt DSCC did not take adult learners into account when planning programs
   - ☐ Cost
   - ☐ Previously graduated
   - ☐ Other; please list: _____

Dependent Question: If no, What was your current academic program or declared degree program?
   - ☐ _____
   - ☐ Undeclared

Dependent Question: If yes, Are you studying full-time or part-time?
   - ☐ Full-time (enrolled in more than two courses this semester)
   - ☐ Part-time (enrolled in two or less courses this semester)

Dependent Question: If yes, What is your current academic program or declared degree program?
   - ☐ _____
   - ☐ Undeclared

4. Are you currently a Pell Grant (federal grant awarded to undergraduate students based on financial need) recipient?
   - ☐ Yes
   - ☐ No
   - ☐ Not sure

5. What is your age?
   - ☐ Under 24
   - ☐ 25-29
   - ☐ 30-34
   - ☐ 35-39
   - ☐ 40-44
   - ☐ 45-49
   - ☐ 50-54
   - ☐ 55-59

☐ 60-64

☐ 65+

6. With which gender do you identify?
- ☐ Male
- ☐ Female
- ☐ Other
- ☐ Prefer not to answer

7. With which ethnicity/race do you identify?
- ☐ American Indian/Alaskan Native
- ☐ Asian
- ☐ Black or African American
- ☐ Hispanic or Latino
- ☐ White
- ☐ Other
- ☐ Prefer not to answer

8. How many hours have you completed at DSCC (check all that apply):
- ☐ 0 – I was admitted but have not started courses
- ☐ 0 – I am in my first semester of study
- ☐ 0-12
- ☐ 13-24
- ☐ 25-36
- ☐ 37-48
- ☐ 49-60
- ☐ I completed a degree or certificate at DSCC

9. My current total GPA is:
- ☐ 0.0-1.0 GPA
- ☐ 1.0-2.0 GPA
- ☐ 2.0-3.0 GPA
- ☐ 3.0-4.0 GPA

10. In a typical week, I work for pay:
- ☐ 0 hours week (I am not currently employed)
- ☐ 1-5 hours a week
- ☐ 6-10 hours a week
- ☐ 11-20 hours a week
- ☐ 21-30 hours a week
- ☐ 31-40 hours a week
- ☐ 40 or more hours week

11. Are you married?
- ☐ Yes
- ☐ No

12. Are you the first person in your family to go to college?
- ☐ Yes
- ☐ No

13. How many children/dependents do you have:
- ☐ 0 children/dependents
- ☐ 1 child/dependent
- ☐ 2-3 children/dependents

- ☐ 4 or more children/dependents

14. I have regular access to the internet from my home.
    - ☐ Yes
    - ☐ No

15. I utilize the following devices for personal use (check all that apply):
    - ☐ Smartphone (i.e. a cell phone with the ability to connect to the internet)
    - ☐ Tablet (e.g., iPad, Amazon Fire, Samsung Galaxy Note, etc.)
    - ☐ Laptop computer
    - ☐ Desktop computer
    - ☐ Other; please list: _____

16. The best way to communicate with me is via (check all that apply):
    - ☐ Text messaging
    - ☐ Social media (e.g., Facebook, Snapchat, Instagram, etc.)
    - ☐ Email
    - ☐ Postal mail
    - ☐ Other; please list: _____

Section B: Consider how well DSCC programs meet the needs of adult learners.

17. I feel that DSCC supports adult learner success.
    Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree
18. I feel that DSCC cares about me graduating and finishing my program.
    Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree
19. I feel that DSCC encourages me to return each semester.
    Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree
20. Classes at DSCC teach me skills necessary for my career.
    Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree
21. Classes at DSCC teach me life skills that prepare me for conflicts I encounter in my life.
    Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree
22. I feel that my current program meets the needs of my current or future employment expectations.
    Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree
23. I feel that my DSCC degree will enable me to obtain a pay raise at my current employment.
    Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree
24. I feel that my DSCC degree will enable me to be more competitive for a promotion at work.
    Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree
25. I feel that my DSCC degree will enable me to seek a better job elsewhere.
    Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree
26. I feel that DSCC has my needs in mind.
    Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree

Section C: Consider how well DSCC's policies on class hours and office hours meet the requirements and preferences of adult students.

27. Support offices (examples: Admissions, Financial Aid, Student Affairs) are open during convenient times for me.
    Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree
28. DSCC accommodates the competing priorities in adult students' lives through flexible course scheduling.
    Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree
29. In general, I find DSCC academic programs do not interfere with my work schedule.
    Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree
30. In general, the current course meeting times will not delay my graduation from DSCC.
    Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree-Not Applicable
31. The following course offering times would best meet my needs (check all that apply):
    - ☐ Weekday mornings (8a.m. - 12p.m. M-F)

- ☐ Weekday afternoons (12p.m. – 5p.m. M-F)
- ☐ Weekday evenings (5p.m. – 9p.m. M-F)
- ☐ Weekends
- ☐ Online courses
- ☐ Hybrid Courses

32. The following support office hours would best meet my needs (check all that apply):
- ☐ Weekdays (8a.m. - 5p.m. M-F)
- ☐ Weekday evenings (5p.m. – 9p.m. M-F)
- ☐ Weekends
- ☐ Online? – would DSCC consider this too if everyone wanted online ways to interact with support services?

33. The following class lengths would work best for my schedule (check all that apply):
- ☐ 16-week courses
- ☐ 10-week courses
- ☐ 8-week courses
- ☐ 5-week courses
- ☐ Other; please indicate: _____

Section D: Consider your feelings on online and hybrid courses.

34. I have taken an online course at DSCC
- ☐ Yes
- ☐ No

Dependent Question: 35. If no, I have not taken an online course because: _____
Dependent Questions:

35. If "yes" to Question 34, I found the online course convenient to my personal or work schedule compared to on-campus classes:
Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree

36. If "yes" to Question 34, I found the online course to be just as valuable as an on-campus class:
Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree

37. If "yes" to Question 34, I feel that the offering of online courses give me a better chance of graduating more quickly or on time:
Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree

38. I am familiar with what a hybrid course is:
- ☐ Yes
- ☐ No
- ☐ Not sure

39. I have taken a hybrid course at DSCC
- ☐ Yes
- ☐ No

Dependent Question: 41. If no, I have not taken a hybrid course because: _____

40. If "yes" to Question 40, I found the hybrid course convenient to my personal or work schedule compared to on-campus classes:
Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree

41. If "yes" to Question 40, I found the hybrid course to be just as valuable as an on-campus class:
Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree

42. If "yes" to Question 40, I feel that the offering of hybrid courses give me a better chance of graduating more quickly or on time:
Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree

43. Please list how online and hybrid courses fit or do not fit your needs (Please list as many reasons as you want. Examples may include: do not have regular access to internet, do not know much about them, am not sure I have the technology know-how to take, etc.):

Online Courses	Hybrid Courses

EXPAND ANSWER AREA

Section E: Opportunities for Improvement at DSCC

44. There are enough academic program options for me offered at DSCC.

<div align="center">Strongly Disagree –Disagree-Neutral-Agree-Strongly Agree</div>

45. Please list any academic programs you'd like to see offered at DSCC that currently are not.

_____

EXPAND ANSWER AREA

46. How likely would you be to change your current degree program if any of the potential academic programs listed in the previous question were offered?

<div align="center">Not Likely –Less Likely-Neutral-More Likely-Very Likely</div>

47. If weekend classes were offered, how likely would you be to enroll in them?

<div align="center">Not Likely –Less Likely-Neutral-More Likely-Very Likely</div>

48. If shorter, yet more intense course offerings (for instance, 8-week courses) were available, how likely would you be to enroll in them?

<div align="center">Not Likely –Less Likely-Neutral-More Likely-Very Likely</div>

49. Do you think having more flexible course times would speed up your expected graduation date? (e.g., classes offered during evenings or weekends).

<div align="center">Not Likely –Less Likely-Neutral-More Likely-Very Likely</div>

50. Please share any other thoughts you have on DSCC and their level of support for your education and other adult students:

Appendix C: Combined Survey Matrix

Constructs	Themes	Evidence	
		Quotes	**Documents**
Online Education	In-seat preference	"I learn better hearing lectures vs. reading them." "I need the classroom setting." "They do not fit my needs as I feel like I have problems learning just over the internet on complex courses than I do learning in a classroom where everything is explained fairly well to where I can understand it." "…would rather be in person in case I need help." "I find i am unable to focus and complete work if it is done completely online. I prefer to be able to visually and physical be in a classroom for better understanding of the subject that im being taught." "I am just doing what it takes to complete my degree and if an online course is offered and I need that credit, I'll take it. I really do prefer an in seat class, but that's not always an option."	DSCC Adult Learner Needs Survey
	Lack of technology know-how	"have to have good internet and an updated computer, I am not very good with computers…" "do not feel confident in my computer knowledge to commit to taking a class online" "I need the classroom setting, I am also older and not as fluent in computers and the site" "The technology portion can be a little intimidating. Need tech support."	
	Flexibility/Role dissonance	"I am still able to work full time" "It gives me schedule flexibility with being a mom and working full-time." "I was able to work on my time making it more flexible and convenient for my job" "they are convenient, i can do my work whenever i have time within the given deadline, without online courses i wouldn't be able be able to be a full time student, gives me more time to handle my responsibilities as a parent" "allow me to get college credits from home and not have to be in a class room 3+ hours a week" "I am able to do it in my free time instead of having a set time that I would likely not be able to commit to." "allow me to do my work when I have time be it 5 in the morning or 11 at night…"	

Constructs	Themes	Quotes	Documents
		"Work load for class is sometimes too much." "I have to many responsibilities at home that would distract me from concentrating." "I am a mom of two children under the age of 3 and it would be impossible for me to go to school full time if I didn't have the online courses." "online courses made it easy for me when I got off work to knock out my school work without having to physically go to the school"	
	Instructor Access	"Online courses do not fit my needs when I have questions about the material that I am studying and there is no instructor right in front of me to answer my questions. With online courses there are ways to contact instructors but most are not available at my time of study." "I learn better in person and didn't like the amount of time it took for the instructor to get back to me by email if I had a question." "Some instructors slow to respond to emails and post grades." "do not fit my needs because you really don't have access to actual teacher as on campus class" "More teacher interaction" "Teachers are harder to contact and talk with."	
Constructs	**Themes**	**Quotes**	**Documents**
Hybrid Education	Don't know what is	"don't know what this is" "I don't know what a hybrid course is." "You still haven't explained to me what a hybrid course is." "Not too familiar with the hybrid courses."	DSCC Adult Learner Needs Survey
	Instructor Access	"they are very convenient and offer flexibility in study times—still there is an actual class time to ask questions from the professor in a setting that is different than online." "would help if I could attend class witht th instructor at least once a week" "It gives me a chance to meet with my instructor, ask questions, get group and one on one instruction…" "I enjoyed being able to do the work on my own but meeting with the professor once a week for any concerns I may had"	
	Best of both worlds	"Perfect for subjects that I need more assistance with, but don't have the time for traditional classes 2 to 3 days a week." "Can enjoy both online and classroom setting" "Hybrid would give me that face-to-face contact with the instructor and still give me the flexibility of online."	
Constructs	**Themes**	**Quotes**	**Documents**

Academic Programs	Health Studies	Dental, dental assistant programs, pharmacy technician, pharmacy, radiology, surgical assistant, dental hygienist, vet assistant, pre-vet	FAFSA Frenzy Survey DSCC Adult Learner Needs Survey
	Comm/FA/Humanities	Japanese language, in class foreign language classes, American sign language, foreign language, music degrees	
	Education	Need more early childhood education teachers, secondary or post secondary education degree to help get into Memphis/UT Martin TEP to teach high school, different early childhood classes, more early childhood classes	
	STEM	Computer science, computer programming and technology programs, computer use both basic and advanced	

Constructs	Themes	Quotes	Documents
DSCC General Feedback	Employee Support	"Its sad when the class is almost over and some grades from over a month ago are not posted." "Staff has always been courteous and helpful in solving issues." "The staff and falculty are very kind and helpful and always do their best to help me whenever I need assistance." "I have enjoyed every one of my professors maybe because they are more my age than my fellow classmates!" "Mixed messages from different offices can make applying and registering a challenge; but once registered DSCC is a great place to be."	DSCC Adult Learner Needs Survey
	Class offering options	"Need more classes in afternoons and evening, but NOT OL." "DSCC needs more online courses, especially science courses." "science classes with labs are not offered enough especially at night" "wish all classes were offered every semester" "not enough education teachers to offer different lass times which conflicts with work schedule" "more ground early childhood classes and teachers" "need more evening classes for those who work during the day; there used to be a lot more evening classes offered. Limit the number of day sections available for classes in order to have more students enroll in the courses at night."	
	Adult-specific programming	"School holidays to be lined up with the county that each campus is located would help a lot of parents." "With me being an adult student it is hard to balance school, work, family, and anything else that comes my way. I feel that if the support classes (writing, reading, math) were shortened and the primary classes needed to complete a program for a degree then there would be a much higher and faster program completion."	

Constructs	Themes	Quotes	Documents
		"…it can sometimes be hard to get to some of the business offices, advisors, tutoring services like the ASC earlier in the day when you work during the hours that they are normally available to meet." "Perhaps te school could start an extension through the Early Childhood Education Program that the second year or further students along with one or two instructors could start a daycare/pre-K program for qualifying parents whether they are students here or not." "In my opinion, there needs to be more detailed instruction with online classes and maybe offer computer classes to help get us through. All of us are not computer savvy like we would like to be. We do however want to go to school and graduate so it would help." "I would like to see an in class orientation class for adult learners if it is going to be a required course. It would help to get to know other students are the class needs to be geared for our needs which are different than a freshman first time young student." "The length of the class does not matter, but the time availability does" "lengths of courses is not an issue"	
Why Enrolling	American Dream	"always wanted to go to college" "to better myself & to move up in job" "to live my dream of becoming a RN" "better myself"	FAFSA Frenzy Survey
	Employment	"to seek employment" "to better myself & to move up in job" "better income"	

Appendix D: Example Qualitative Data Code Book

Online Courses Code Book		Research Question	Type of Response
Q	In the queue	3	Statement of fact
N	No need	3	Statement of fact
H	Hate/dislike	3	Perception
GF	Good fit	3	Situational
BF	Bad fit	3	Situational
GL	Good learning	3	Perception
BL	Bad learning	3	Perception
IC	In-seat preference	3	Relational
OC	Online preference	3	Relational
UC	Unable to physically attend classes	3	Statement of fact
NC	No in-seat course offerings	3	Statement of fact
POC	Poor online course selection	3	Statement of fact
TF	Fear of technology	3	Perception
TL	Lack of technology know-how	3	Perception
TI	No internet	3	Statement of fact
TP	Technology problems	3	Perception
E	Enjoy online	3	Perception
F	Flexibility	3	Situational
C	Convenient	3	Situational
D	Driving	3	Statement of fact
S	Schedule	3	Perception
CS	Campus safety	3	Perception
R	Role dissonance	3	Relational/Perception
FA	Family	3	Relational
W	Work	3	Relational
HO	Home	3	Relational
A	Age	3	Perception
P	Pace	3	Perception
AX	Anxiety	3	Perception
TA	Teacher Access	3	Relational
TC	Time consuming	3	Perception
PF	Poor program format	3	Perception

References

100 Ways Colleges Serve Adults. (1990). New York: NY: The College Board. Office of Adult Learning Services.

ACT Policy Brief. (2011). Defining Credentials for the Public Workforce System. Retrieved from: https://files-eric-ed-gov.proxy.library.vanderbilt.edu/fulltext/ED516785.pdf.

Adult Learning in Focus: National and State-by-State Data. Council for Adult and Experiential Learning in partnership with National Center for Higher Education Management Systems. Retrieved from: http://www.nchems.org/wp-content/uploads/AdultLearninginFocus.pdf.

Anderson, K. T. (2011). *Linking adult learner satisfaction with retention: The role of background characteristics, academic characteristics, and satisfaction upon retention.* Iowa State University.

Anderson, Lexi. (2017). Promising Practices: State Innovations for Near-Completers. Education Commission of the States. Retrieved from: https://www.ecs.org/ec-content/uploads/State_Innovations-for-Near-Completers.pdf.

Ashar, H., & Skenes, R. (1993). Can Tinto's student departure model be applied to nontraditional students? *Adult education quarterly*, *43*(2), 90-100.

Bauer, D., & Mott, D. (1990). Life themes and motivations of re-entry students. *Journal of Counseling & Development*, *68*(5), 555-560.

Berker, A., Horn, L., & Carroll, C. D. (2003). Work First, Study Second: Adult Undergraduates Who Combine Employment and Postsecondary Enrollment. Postsecondary Educational Descriptive Analysis Reports.

Brown, S. M. (2002). Strategies that contribute to nontraditional/adult student development and persistence. *PAACE Journal of Lifelong Learning*, *11*, 67-76.

Bulger, S., & Watson, D. (2006). Broadening the definition of at-risk students. *The Community College Enterprise*, *12*(2), 23.

Carney-Crompton, S., & Tan, J. (2002). Support systems, psychological functioning, and academic performance of nontraditional female students. *Adult education quarterly*, *52*(2), 140-154.

Chartrand, J. M. (1992). An empirical test of a model of nontraditional student adjustment. *Journal of Counseling Psychology*, *39*(2), 193.

Chaves, C. (2006). Involvement, development, and retention: Theoretical foundations and potential extensions for adult community college students. *Community College Review*, *34*(2), 139-152.

Chickering, A. (1981). The Modern American College: Responding to the New Realities of Diverse Students and a Changing Society.

Choy, S. (2002). Nontraditional undergraduates: Findings from "The Condition of Education, 2002". National Center for Education Statistics.

Coley, R. J. (2000). The American Community College Turns 100: A Look at Its Students, Programs, and Prospects. Policy Information Report.

Comings, J., Parrella, A., & Soricone, L. (2000). Helping adults persist: Four supports. *Focus on Basics*, *4*(1), 3-6. Retrieved from: http://www.ncsall.net/index.html@id=332.html.

Conrad, J. (1993). Educating Part-Time Adult Learners in Transition. ERIC Digest.

Cross, K. P. (1981). Adults as Learners. Increasing Participation and Facilitating Learning.

Ekstrom, R. B. (1972). Barriers to Women's Participation in Post-Secondary Education. A Review of the Literature.

Ely, E. E. (1997). The Non-Traditional Student.

Employment and Training Administration Advisory System, U.S. Department of Labor. (2010). Training and Employment Guidance Letter No. 15-10. Retrieved from: https://ows.doleta.gov/dmstree/tegl/tegl2k10/tegl_15-10.pdf.

Executive Summary Adult Learner 360 Survey Data Comparisons. (2017). Council for Adult and Experiential Learning. Retrieved from: https://cdn2.hubspot.net/hubfs/617695/Executive%20Summary%20Adult%20Learner%20360.pdf?submissionGuid=bd823df4-3c6a-4781-8f0e-c9b5015294bd

Eyster, L., Anderson, T., & Durham, C. (2013). Innovations and future directions for workforce development in the post-recession era. *Washington, DC: Urban Institute*.

Fairchild, E. E. (2003). Multiple roles of adult learners. *New directions for student services*, *2003*(102), 11-16.

Federal Communications Commission. Fixed Broadband Deployment Data, as of June, 2016. Retrieved from: https://www.fcc.gov/maps/fixed-broadband-deployment-data/index.html.

Frey, R. (2007). Helping Adults Learners Succeed: Tools for Two-Year Colleges. *Council for Adult and Experiential Learning (NJ1)*.

Ganzglass, E. (2014). Scaling" Stackable Credentials": Implications for Implementation and Policy. *Center for Postsecondary and Economic Success*.

Garnham, C., & Kaleta, R. (2002, March 20). Introduction to Hybrid Courses. Teaching with technology Today (6, Vol.8).

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The internet and higher education*, *7*(2), 95-105.

Gast, A. (2013). Current trends in adult degree programs: How public universities respond to the needs of adult learners. *New Directions for Adult and Continuing Education*, *2013*(140), 17-25.

Gilardi, S., & Guglielmetti, C. (2011). University life of non-traditional students: Engagement styles and impact on attrition. *The Journal of Higher Education*, *82*(1), 33-53.

Ginns, P., & Ellis, R. (2007). Quality in blended learning: Exploring the relationships between on-line and face-to-face teaching and learning. *The Internet and Higher Education*, *10*(1), 53-64.

Graham, S., & Donaldson, J. F. (1999). Adult students' academic and intellectual development in college. *Adult Education Quarterly*, *49*(3), 147-161.

Graham, C. R., Woodfield, W., & Harrison, J. B. (2013). A framework for institutional adoption and implementation of blended learning in higher education. *The internet and higher education*, *18*, 4-14.

Hanniford, B. E. (1993). *The impact of work and family roles on associate or baccalaureate degree completion among students in early adulthood.* (Doctoral dissertation, The Ohio State University).

Hardin, C. J. (2008). Adult students in higher education: A portrait of transitions. *New directions for higher education*, *2008*(144), 49-57.

Hiltz, S. R., & Turoff, M. (2005). Education goes digital: The evolution of online learning and the revolution in higher education. *Communications of the ACM*, *48*(10), 59-64.

House Bill 531/Senate Bill 1218. Tennessee General Assembly. Retrieved from: http://wapp.capitol.tn.gov/apps/BillInfo/Default.aspx?BillNumber=HB0531.

House Bill 646/Senate Bill 605. Tennessee General Assembly. Retrieved from: https://www.tn.gov/assets/entities/governor/attachments/HB0646.pdf.

Howell, C. L. (2001). Facilitating Responsibility for Learning in Adult Community College Students. ERIC Digest.

Kane, T. J., & Rouse, C. E. (1999). The community college: Educating students at the margin between college and work. *The Journal of Economic Perspectives*, *13*(1), 63-84.

Kasworm, C. E. (2008). Emotional challenges of adult learners in higher education. *New Directions for Adult and Continuing Education*, *2008*(120), 27-34.

Kasworm, C. E. (2003). Setting the stage: Adults in higher education. *New directions for student services*, *2003*(102), 3-10.

Kazis, R., Callahan, A., Davidson, C., McLeod, A., Bosworth, B., Choitz, V., & Hoops, J. (2007). Adult Learners in Higher Education: Barriers to Success and Strategies to Improve Results. Employment and Training Administration. Occasional Paper 2007-03. *Jobs for the Future*.

Keen, J., & CITY, M. (2009). After layoffs, many workers go back to school. *USA Today*, 1A.

Keith, P. M. (2007). Barriers and nontraditional students' use of academic and social services. *College Student Journal*, *41*(4), 1123-1128.

Kemp, W. C. (2002). Persistence of adult learners in distance education. *The American Journal of Distance Education*, *16*(2), 65-81.

Kenner, C., & Weinerman, J. (2011). Adult learning theory: Applications to non-traditional college students. *Journal of College Reading and Learning*, *41*(2), 87-96.

Kerka, S. (1995). Adult Learner Retention Revisited. ERIC Digest No. 166.

Kimmel, S. B., Gaylor, K. P., Grubbs, M. R., & Hayes, J. B. (2012). Good times to hard times: An examination of adult learners' enrollment from 2004-2010. *Journal of Behavioral and Applied Management*, *14*(1), 18.

Knowles, M. (1973). The adult learner: a neglected species. American Society for Training and Development.

Knowles, M. S., Holton III, E. F., & Swanson, R. A. (2014). The adult learner: The definitive classic in adult education and human resource development. Routledge.

Lane, P. (2012). Strategies for Success: Promising Ideas in Adult College Completion. Policy Exchanges. *Western Interstate Commission for Higher Education*.

Lareau, A. (1987). Social Class Differences in Family-School Relationships: The Importance of Cultural Capital. Sociology of Education, Vol. 60, pp. 73-85.

Ma, J. & Baum, S. (2016). Trends in Community Colleges: Enrollment, Prices, Student Debt, and Completion. College Board Research Brief. Retrieved from:

https://trends.collegeboard.org/sites/default/files/trends-in-community-colleges-research-brief.pdf.

MacAri, D. P., Maples, M. F., & D'Andrea, L. (2005). A comparative study of psychosocial development in nontraditional and traditional college students. *Journal of College Student Retention: Research, Theory & Practice*, *7*(3), 283-302.

MacKinnon-Slaney, F. (1994). The adult persistence in learning model: A road map to counseling services for adult learners. *Journal of Counseling & development*, *72*(3), 268-275.

El Mansour, B., & Mupinga, D. M. (2007). Students' positive and negative experiences in hybrid and online classes. *College student journal*, *41*(1), 242.

McPhail, C. (2011). The Completion Agenda: A Call to Action. Summary report from the November 10-11, 2010, meeting of the American Association of Community Colleges Commissions and Board of Directors. Retrieved from: https://files.eric.ed.gov/fulltext/ED532208.pdf.

Mercer, D. L. (1993). Older Coeds: Predicting Who Will Stay This Time. *Journal of Research and Development in Education*, *26*(3), 153-63.

Mullin, C. M. (2010). Rebalancing the Mission: The Community College Completion Challenge. AACC Policy Brief 2010-02PBL. *American Association of Community Colleges (NJ1)*.

Muse, H. E. (2003). The web-based community college student: An examination of factors that lead to success and risk. *The Internet and Higher Education*, *6*(3), 241-261.

National Center for Education Statistics (NCES). (2002). The Condition of Education 2002. Retrieved from: https://nces.ed.gov/pubs2002/2002025.pdf.

National Center for Education Statistics (NCES). (2015). Digest of Educational Statistics 2015. Table 303.40. Total fall enrollment in degree-granting post-secondary institutions, by attendance status, sex, and age: Selected years, 1970 through 2026. Retrieved from: https://nces.ed.gov/programs/digest/d16/tables/dt16_303.40.asp?current=yes.

National Center for Education Statistics (NCES). (2017). The Condition of Education 2017. Retrieved from: https://nces.ed.gov/pubs2017/2017144.pdf.

NextTennessee. One Pager: Tennessee Reconnect. Retrieved from: https://www.tn.gov/nexttennessee/topic/nt-one-pagertennessee-reconnect.

Noel-Levitz (2000). Adult Student Priorities Survey. Noel-Levitz, Inc. Retrieved from: https://www.ruffalonl.com/complete-enrollment-management/student-success/student-satisfaction-assessment/adult-student-priorities-survey.

Oblinger, D. (2003). Boomers gen-xers millennials. *EDUCAUSE review*, *500*(4), 37-47.

Park, J. H., & Choi, H. J. (2009). Factors influencing adult learners' decision to drop out or persist in online learning. *Journal of Educational Technology & Society*, *12*(4).

Patton, M. (2002). Qualitative Research and Evaluation Methods. *California EU: Sage Publications Inc*.

Pelletier, S. (2010). Success for Adult Students. American Association for State Colleges and Universities. Retrieved from: http://www.aascu.org/uploadedFiles/AASCU/Content/Root/MediaAndPublications/PublicPurposeMagazines/Issue/10fall_adultstudents.pdf.

Pennington, K. L., McGinty, D., & Williams, M. R. (2002). Community college enrollment as a function of economic indicators. *Community College Journal of Research & Practice*, *26*(5), 431-437.

Pierce, T. & Albright, A.D. (1957). Public Higher Education in- Tennessee, A Report to The Education Survey Subcommittee of the Tennessee Legislative Council.

Pingel, S., Parker, E., & Sisneros, L. (2016). Free Community College: An Approach to Increase Adult Student Success in Postsecondary Education. Special Report. *Education Commission of the States*.

Putnam, R. (1995). Bowling Alone: America's Declining Social Capital, Journal of Democracy, 6(1), pp. 65-78

Quick Facts, Population. United States Census Bureau. Retrieved from: https://www.census.gov/quickfacts/fact/table/dyercountytennessee/PST045216.

Quick Facts, Population. United States Census Bureau. Retrieved from: https://www.census.gov/quickfacts/fact/table/lakecountytennessee,gibsoncountytennessee,crockettcountytennessee/PST045216.

Quick Facts, Population. United States Census Bureau. Retrieved from: https://www.census.gov/quickfacts/TN.

Radford, A., Cominole, M., & Skomsvold, P. National Center for Education Statistics (NCES). (2015). Demographic and Enrollment Characteristics of Nontraditional Undergraduates: 2011-12. Retrieved from: https://nces.ed.gov/pubs2015/2015025.pdf

Richardson, J. T., & King, E. (1998). Adult students in higher education: burden or boon?. *The Journal of Higher Education*, *69*(1), 65-88.

Ritt, E. (2008). Redefining tradition: Adult learners and higher education. *Adult Learning*, *19*(1-2), 12-16.

Ross-Gordon, J. M. (2003). Adult learners in the classroom. *New directions for student services*, *2003*(102), 43-52.

Ross-Gordon, J. M. (2011). Research on adult learners: Supporting the needs of a student population that is no longer nontraditional. *Peer Review*, *13*(1), 26.

Ruffalo Noel-Levitz. 2015-16 National Adult Learners Satisfaction-Priorities Report. Retrieved from: http://cdn2.hubspot.net/hubfs/617695/2015-16_RNL_AdultLearners_Report_Final.pdf?submissionGuid=d5ebc3a1-35ef-4e87-91e7-cff44a624ada.

Sissel, P. A., Hansman, C. A., & Kasworm, C. E. (2001). The politics of neglect: Adult learners in higher education. *New Directions for Adult and Continuing Education*, *2001*(91), 17-28.

Smith, G., & Bailey, V. (1993). Staying the Course. Business and Technology Education Council. London, England.

Spellman, N. (2007). Enrollment and retention barriers adult students encounter. *The Community College Enterprise*, *13*(1), 63.

Strengthening America's Economy by Expanding Educational Opportunities for Working Adults. National Adult Learner Coalition. Retrieved from: file:///C:/Users/mcroberts/Downloads/Strengthening%20America's%20Economy%20-%20National%20Adult%20Learning%20Coalition%20White%20Paper%20Final.pdf

Tamburin, A. (Jul 24, 2017). How Tennessee plans to use its winning FAFSA strategy to boost college graduation rates. USA Today Network - Tennessee. Retrieved from: http://www.tennessean.com/story/news/education/2017/07/25/how-tennessee-plans-use-its-winning-fafsa-strategy-boost-college-graduation-rates/503655001/.

Tennessee Office of the Governor. Community College Reconnect Grant. Retrieved from: https://www.tn.gov/governor/article/community-college-reconnect-grant.

Turner, S. E., Breneman, D. W., Milam, J. H., Levin, J. S., Kohl, K., Gansneder, B. M., & Pusser, B. (2007). Returning to learning: Adults' success in college is key to America's future.

United States Department of Labor, Bureau of Labor Statistics. Local Area Unemployment Statistics. Retrieved from: https://www.bls.gov/lau/#tables.

University of Texas at Austin. Community College Survey of Student Engagement (2017). Retrieved from: http://www.ccsse.org/refresh/CCSSE_Refresh_Sample.pdf.

Valadez, J. (1993). Cultural capital and its impact on the aspirations of nontraditional community college students. *Community College Review*, 21(3), 30.

Van Noy, M., & Heidkamp, M. (2013). Working for adults: State policies and community college practices to better serve adult learners at community colleges during the great recession and beyond. *Heldrich Center for Workforce Development, Rutgers University*.

Vaughan, N. (2007). Perspectives on blended learning in higher education. *International Journal on ELearning, 6*(1), 81-94. Retrieved from http://login.proxy.library.vanderbilt.edu/login?url=https://search-proquest-com.proxy.library.vanderbilt.edu/docview/210364938?accountid=14816

Wells, R. (2008). The effects of social and cultural capital on student persistence: Are community colleges more meritocratic?. *Community College Review*, *36*(1), 25-46.

Wlodkowski, R. J., Mauldin, J. E., & Gahn, S. W. (2001) The Adult Learning Survey. Learning in the Fast Lane: Adult Learners' Persistence and Success in Accelerated College Programs. New Agenda Series [TM]. Volume 4, Number 1.

Wlodkowski, R. J., Mauldin, J. E., & Gahn, S. W. (2001). Learning in the Fast Lane: Adult Learners' Persistence and Success in Accelerated College Programs. New Agenda Series [TM]. Volume 4, Number 1.

Wyatt, L. G. (2011). Nontraditional student engagement: Increasing adult student success and retention. *The Journal of Continuing Higher Education*, *59*(1), 10-20.