Bridging Support: Examining the Effectiveness of Online Peer Mentors in an Adult Learner Precollege Program

By

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ABSTRACT

As the adult learner population in higher education continues to increase, there has been a renewed focus on how to best serve this student population in recent years. While adult learners are more likely to take online classes and to enroll part-time, engagement and retention efforts have not heavily focused on part-time online adult learners, particularly when it comes to how best to engage these learners virtually. Utilizing retrospective data from an adult learner corporate partnership program at a four-year public research university, this study examines the effectiveness of online peer mentoring on course completion among part-time adult learners in an online precollege program. Part-time adult learners who received online peer mentoring in a precollege program for corporate partnership students were compared to part-time adult learners who did not receive online peer mentoring in a precollege program for corporate partnership students. Chi-square analyses were performed to determine the association between online peer mentoring and course completion for part-time adult learners overall as well as for part-time adult learners of color and male and female part-time adult learners. Results indicate that there is a statistically significant association between online peer mentoring for part-time adult learners, part-time adult learners of color, and male part-time adult learners. Based on the findings of this study, it is recommended that institutions consider ways to further engage part-time online adult learners to better meet and support their specific learning needs.

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CHAPTER I.

INTRODUCTION

Online learning has become an important focus in higher education in recent years, with the number of students enrolled in online coursework continuing to increase (Seaman, 2018). In particular, online learning has given adult learners the flexibility to enroll in postsecondary education while balancing work and family responsibilities. As the number of both full-time and part-time adult students is projected to grow at a larger rate than that of traditionally-aged students (National Center for Education Statistics, 2016), the number of online programs aimed at working adults has expanded.

The adult learner population, however, has a unique set of needs from that of traditionally-aged students, with work and family commitments serving as important factors in defining these needs (Wuebker, 2013). Adult learners are less likely to persist when faced with perceived conflicts between work and school (Bergman et al., 2014). Additionally, older adult students are more likely than younger adult students to select a fully online program, with older learners often having a greater need for flexibility due to professional and family obligations (Gardner, 2022). However, while online courses are a convenient way for adult learners to enroll in higher education, low persistence rates among online learners continue to be a concern (Deschacht & Goeman, 2015; Levy, 2007; Park & Choi, 2009).

Problem Statement

Research shows that adult learners are more likely to persist when they receive support from family and/or organizations (such as an employer), when they feel their coursework is relevant to their jobs or experiences, and when they are satisfied with the structure and content of their online coursework (Park & Choi, 2009). Adult learners are also more likely to complete online coursework when they are enrolled in a higher number of online courses, suggesting that full-time students have an advantage over those who are enrolled part-time (Aragon & Johnson, 2008). Additionally, evidence suggests that adult learners have similar expectations of face-to-face and online courses when it comes to collaborative learning and knowledge-sharing (King-Spezzo et al., 2020). It is therefore important for adult learners to feel they are part of a learning community, especially those who are enrolled part-time and online.

Online peer mentoring is one potential solution to achieving a sense of belonging among part-time adult learners enrolled in online coursework. While relatively little research has been conducted regarding online peer mentoring, early findings suggest that it may assist with creating community in the online classroom (Fraenza & Rye, 2021) while also producing positive outcomes with student motivation and study behavior (Hardt et al., 2022). This study will examine the effects of engagement through online peer mentoring on part-time adult learners in an online precollege program.

Adult Learners and College Readiness

Adult learners, generally defined as students 25 and older who have never previously attended college (Gardner et al., 2022), form 38% of the postsecondary learner population, with that percentage continuing to rise each year (Lumina Foundation,

2019). Adult learners who are employed full-time are more likely to be part-time and enroll in fully online degree programs, as are adult learners who are married, divorced, or have children (Gardner et al., 2022). Research suggests that online adult learners are more likely to find success when they receive adequate feedback from instructors, when their individual learning styles are considered, and when a sense of community is developed in the online classroom (Wuebker, 2013).

One additional factor in adult learner student success is college readiness, though the majority of research on college readiness focuses on traditionally-aged learners. Conley (2012) defines college readiness as a student's ability to successfully complete entry-level postsecondary coursework without the need for developmental coursework or other interventions. Historically, students lacking college readiness are placed into developmental coursework before they are allowed to move on to entry-level coursework for degree credit, resulting in time added to degree completion as well as additional money spent on tuition. However, developmental coursework has not been found to increase persistence and graduation rates, calling into question how best to serve learners in need of college readiness support (Brower et al., 2021). Precollege programs can be one way to address this issue with adult learners.

Precollege Programs

Higher education institutions increasingly rely on precollege "bridge" programs for newly admitted postsecondary students to assist with the transition to college, with many also aiming to provide academic and study skills support for students who are at-risk or lacking in college readiness (Wathington et al., 2016; Howard & Flora, 2015). Supplemental instruction in the summer before a student's first semester as a college

student is a common way to address college readiness for at-risk student populations, with many precollege programs focusing on innovative teaching and meaningful interactions between students and faculty (Howard-Vital, 2007).

Precollege programs also promote positive social transitions for college students, with early arrival to the college campus not only allowing students to get a head start on academics but on making connections socially, as well (Wathington et al., 2016). However, most precollege programs exist in the form of early arrival programs that are residential, with a focus on the traditional college freshman who will be enrolled full-time in mostly in-person classes (Howard & Flora, 2015). With little focus on non-residential bridge programs in the available literature, there is a need for additional research on precollege programs that center online students as well as part-time adult learners.

Prep Academy

UofM Global's Prep Academy is an online precollege, earned admission program at the University of Memphis. Part of UofM Global's corporate partnership program that assists employees of corporate partners in fully utilizing their tuition benefits to earn a degree, Prep Academy is a precollege program designed for adult learners not eligible for admission to a degree program. With a focus on college readiness, writing and communication skills, and career and professional development, Prep Academy is a self-paced, competency-based program that allows learners to earn admission to a degree program while also preparing them to be successful college students. Unlike developmental coursework, however, Prep Academy awards

successful completers of the program college credit that can be applied to their degrees.

Divided into four credit hours each, Prep Academy has three units that learners complete in sequence:

Unit 1: Academic Success

Unit 2: Career Planning and Development

Unit 3: Personal and Career Success

Prep Academy units are not bound by semester dates, enabling learners to begin at any point during the year. Prep Academy course sections remain open for two full academic semesters, allowing learners to take as long as they need to complete each unit; if a student does not complete a unit by the closing date of their course section, students are provided the opportunity to move their work to a new section and begin where they last left off.

Students are automatically placed into the next unit upon successful completion of the current unit. Prep Academy students work closely with instructors as they complete each assignment. Learners receive feedback from instructors and are given the opportunity to revise assignments or retake tests as many times as needed until they have met assignment competencies by scoring 80% or higher on each assignment. Prep Academy students also have access to a 24/7 online tutoring service and can utilize online services such as writing consultations with the university's writing center.

Prep Academy serves a diverse population of adult learners. Between 2018 and 2022, the average age of Prep Academy students was 36, with 37% being first-

generation students, and 73% being students of color. In the 2021-2022 academic year, there were 520 total learners enrolled in Prep Academy across five corporate partnerships. One of the larger corporate partnerships (referred to as CP1), a large, multi-site company with 11,000 eligible employees from across the United States, had the following Prep Academy demographics for spring 2022:

Table 1

Demographic Characteristics of CP1 Prep Academy Students Enrolled in Spring 2022

Unit	Course	Total Enrollment	Average Age	Female Student %	First Generation %	Students of Color %
Unit 1	Academic Success	161	34	47.20%	29.19%	65.84%
Unit 2	Career Planning and Development	58	34	47.16%	36.2%	56.89%
Unit 3	Personal and Career Success	22	37	50%	36.36%	50%

The demographics data shows that overall enrollment decreases with each subsequent unit, suggesting that many learners in Unit 1 are not completing the unit and moving on to Unit 2. One reason for this large enrollment drop off between units 1 and 2 could be attributed to the open enrollment, low-stakes design of Unit 1: any student who wishes to enroll in the course is automatically admitted as a continuing education student; additionally, the corporate partner is not billed for the student's enrollment

unless they complete the course. This open enrollment policy allows students to explore the lessons and assignments with no negative financial or academic repercussions should they choose to stop working in the course. Additionally, the percentage of students of color decreases with each subsequent unit, suggesting that students of color may need more personalized intervention in the first Prep Academy unit.

Upon completion of all three units of Prep Academy, learners are guaranteed admission to the University of Memphis and awarded 12 hours of course credit that can be applied to their degree programs. Between 2018 and 2022, 228 students earned admission to the University of Memphis through the completion of Prep Academy. Prep Academy completers have a record of success once admitted to the university, having a 92% course success rate and averaging a 3.2 GPA in coursework completed post-Prep Academy.

While those who complete Prep Academy are well-prepared for college and find success in their coursework once admitted, there is still a need to address completion rates within Prep Academy. The CP1 Prep Academy had the following completion percentages in the spring 2022 course sections:

Table 2

Completion Percentages for CP1 Prep Academy Students Enrolled in Spring 2022

Unit	Course	Total Enrollment	Completion Percentage for All Students	Completion Percentage for Students of Color
1	Academic Success	161	28.57%	27.35%
2	Career Planning and Development	58	48.27%	51.51%
3	Personal and Career Success	22	72.72%	81.81%

While the Unit 1 completion percentages are particularly low, the completion percentage increases with each subsequent unit, with only 28.57% of students completing Unit 1 while 72.72% of students completed Unit 3. Interestingly, students of color completed Unit 1 in slightly lower numbers (27.35%) than students overall (28.57%), though they completed Unit 3 at higher rates (81.81%) than students overall (72.72%). This suggests that all students—particularly students of color—might benefit from additional help and support services in Unit 1 to increase the likelihood of moving on to Unit 2 and Unit 3.

Peer Mentoring

One way to provide additional support for Prep Academy students is to utilize peer mentoring targeted to online adult learners. Mentoring is generally accepted to be "a relatively stable dyadic relationship between an experienced mentor and his or her less

experienced mentee" (Hopp et al., 2020, p. 2). With peer mentoring in the higher education setting, however, the mentor is closer in age to the mentee and still also enrolled as a student alongside their mentees. Research often shows that peer mentoring increases confidence, academic participation, and provides a sense of belonging for mentees (Fayram et al., 2018). Additionally, studies suggest that high-touch, personalized peer mentoring initiatives improve academic outcomes (Oreopoulos & Petronijevic, 2018).

Online peer mentoring has not been researched as extensively as in-person mentoring programs, but recent findings show that online peer mentoring aids in building a sense of community in the online classroom (Fraenza & Rye, 2021). Online peer mentoring has also been found to positively influence motivation and study behavior in mentees (Hardt et al., 2022).

Studies have also found that online students who are engaged with the learning process are more likely to complete their programs (Hensley et al., 2021). Given the link between peer mentoring and motivation and study behavior in mentees, online peer mentoring has the potential to enhance engagement in the online classroom, particularly in populations who are less likely to be engaged such as part-time adult learners.

Michael G. Moore's transactional distance theory provides additional context to the ways that online peer mentoring can potentially engage learners. In transactional distance theory, the geographic distance between learners and instructors is deemphasized, with a focus instead on the psychological distance that is influenced by course structure, dialogue, and learner autonomy (Reyes, 2013). In transactional distance, the autonomy that learners need to be successful increases as distance does

(Moore, 2018). Additionally, the interactions between dialogue and structure influence transactional distance, with transactional distance decreasing as dialogue increases, but increasing as structure increases (Reyes, 2013). Transactional distance theory can offer clarification to the goals of online peer mentoring through its focus on structure, dialogue, and autonomy: dialogue between learners and peer mentors can aid in decreasing transactional distance while allowing increased autonomy as learners navigate the distance education course structures.

Statement of Purpose

Student engagement has been found to be an important predictor of persistence and degree completion, but online students are much more likely to feel distanced from the learning process (Bigatel & Williams, 2015). Peer mentoring has been associated with increased levels of academic engagement (Ellis & Helaire, 2021), with students who receive peer mentoring possessing increased confidence and motivation and experiencing a greater sense of belonging (Fayram et al., 2018). Considering the need of online students to establish a greater sense of connection to their learning as well as the documented benefits of peer mentoring, the purpose of this study is to assess whether engaging part-time adult learners through online peer mentoring is associated with course completion in online precollege coursework.

Research Questions

Q_1: Is online peer mentoring associated with course completion for part-time adult learners?

Q_2: Is online peer mentoring associated with course completion for part-time adult learners of color?

Q_3: Is online peer mentoring associated with course completion among male and female part-time adult learners?

Research Hypotheses

H_1: Participation in an online peer mentoring program is associated with course completion among part-time adult learners.

H_2: Participation in an online peer mentoring program is associated with course completion among part-time adult learners of color.

H_3: Participation in an online peer mentoring program is associated with course completion among male and female part-time adult learners.

Assumptions

1. The subjects are only included once in the study.
2. The subjects will remain constant throughout the study.
3. The subjects included in the study are employed by the same company, eligible to participate in a corporate partnership tuition benefit program, and enrolled part-time in an online precollege program.

Definition of Terms

1. Adult learners – students who are "25 or older, have delayed entry into higher education after completing high school, did not earn a traditional high school diploma, are married, attend part-time, work full-time, or have children" (Eckel & King, 2004, p. 7); for the purpose of this study, learners between 19 and 24 will be included in the study as adult learners if they are employed full-time and eligible to participate in a part-time corporate partnership tuition benefit

program, as aside from age, Prep Academy students otherwise match three or more components of Eckel & King's adult learner definition

2. Conditional admission – an admission offer for students who do not meet admission requirements and/or may need additional support that requires students to meet pre-determined requirements to maintain enrollment (Adebayo, 2008; Johnson, 2000; Stewart & Heaney, 2013)
3. Course completion – for the purpose of this study, course completion refers to successfully completing one four-credit unit of Prep Academy scoring an 80% or higher on each assignment
4. Earned admission – for the purpose of this study, earned admission refers to successfully completing all three units of Prep Academy, being awarded 12 credit hours of college credit, and receiving a guaranteed admission offer as a degree-seeking student to the University of Memphis
5. Full-time learners – students enrolling in 12 or more credit hours per semester (National Center for Education Statistics, n.d.)
6. Part-time learners – students enrolling in less than 12 credit hours per semester (National Center for Education Statistics, n.d.)
7. Peer mentoring – mentoring refers to "a relatively stable dyadic relationship between an experienced mentor and his or her less experienced mentee" (Hopp et al., 2020, p. 2); for the purpose of this study, participants are considered to be peers through their current student status as well as their status as working adult learners employed by the same company, with prior Prep Academy completers serving in the mentor role and current Prep Academy students as mentees

8. Persistence – refers to a student who enrolls in the following term (Bettinger et al., 2017)
9. Precollege program – for the purpose of this study, precollege program refers to a program run directly by higher education institutions that offers supplementary instruction with the aim of increasing student success in college (Wathington et al., 2016; Howard & Flora, 2015)
10. Student engagement – the extent to which a student puts forth the effort "to study a subject, to practice, to obtain feedback, to analyze, and to solve problems" (Bigatel & Williams, 2015, p. 1)
11. Student of color – non-White student; for the purposes of this study, a student of color is considered to be any student who self-identifies as Alaska Native, American Indian, Native American, Indigenous, or Native, Asian, Black or African-American, Hispanic or Latinx, or two or more races (National Center for Statistics, n.d.)
12. Traditionally-aged student – a student who is between 18 and 24 years old (Gardner et al., 2022)

Limitations

This study is limited by its collection of data from one public research university in the southeastern United States. The results may not be representative of all adult learners, in particular those from minority serving institutions (MSIs) or community colleges. Additionally, subjects were selected from a population of learners who are 19 or older, are eligible to participate in a corporate partnership tuition benefit program, and are employed by the same national employer. By

including corporate partnership students who are between the ages of 19 and 24 in this study on adult learners, the results may not be generalizable for all adult learners. All subjects are also enrolled part-time in an online precollege program with the aim of gaining college readiness skills and earning admission to a degree program. Due to the specifics of this population of students, the results of the study may vary for other populations.

Delimitations

This study selected participants from an online program with students located across 40+ states, making the results more generalizable by having adult learner representation from around the country. The study also divided participants into treatment and control groups, making it possible to compare outcomes for learners who received peer mentoring with learners who did not receive peer mentoring.

CHAPTER II.

REVIEW OF LITERATURE

Introduction

Before evaluating an online peer mentorship program for part-time adult learners, it is necessary to first develop an understanding of adult learners' persistence and how the needs of adult learners intersect with college readiness. This literature review discusses Moore's (2018) transactional distance theory and its applicability to online learning as well as the importance of some of the populations served by online learning: adult learners, adult learners of color, and part-time learners. Additionally, this chapter examines how these populations are served by summarizing the research on gender and adult learning, college readiness, conditional admission, and precollege programs. Finally, this chapter provides an overview of the relevant research on student engagement, peer mentoring, and online peer mentoring initiatives.

Transactional Distance Theory

Transactional distance theory was introduced by Michael G. Moore in 1980 to define the field of distance learning (largely correspondence courses during this time) in consideration of the teaching and learning that happens outside of the traditional classroom (Moore, 2018). Transactional distance "refers to the online learning gap associated with communication and understanding due to the physical distance between students and teachers" (Chen, 2023, p. 2086). Moore (1991) describes transactional distance as "the distance of understandings and perceptions, caused in part by the geographic distance, that has to be overcome by teachers, learners and educational

organizations if effective, deliberate, planned learning is to occur" (p. 2). Moore (2018) further defines transactional distance in relation to distance education, emphasizing that the distance education course structure should focus on navigating dialogue between teachers and learners. Moore's theory asserts that rather than focus on the geographic distance between learners and instructors, distance should be considered as a psychological separation shaped by structure, dialogue, and autonomy (Reyes, 2013).

According to Moore (2018), "since structure expresses the rigidity or flexibility of the course's educational objectives, teaching strategies, and evaluation methods, it describes the extent to which a course can accommodate or be responsive to each learner's individual needs and preferences" (p. 35). Courses can have high or low degrees of structure depending on how flexible the course requirements and objectives are, as well as how responsive the course design is to a student's needs. Structuring course content according to learners' needs requires communication—or dialogue—between instructor and student (Moore, 2018).

Moore (2018) described dialogue as being distinctly different from interaction, as "the latter term includes relationships that are manipulative and negative, and that a better term would define the solely constructive exchanges that are essential in a teaching-learning relationship" (p. 33). Dialogue, therefore, involves both learner and instructor in the learning process, with each participant asked to be both an active listener and contributor to the conversation.

Autonomy refers to the extent to which the learner takes ownership of the learning experience in the learner/teacher relationship. Moore (2018) emphasizes the importance that learner autonomy plays within transactional distance:

> In other words, managing transactional distance requires more than deciding the structure of the lesson and skillful management of dialogue in presenting it, but also requires knowledge about the ability of each student to manage [their] engagement with varying degrees of those teaching procedures. (p. 36)

Ultimately, as transactional distance increases, the autonomy that learners need increases. Autonomy also influences dialogue, with more autonomous learners requiring less dialogue, while less autonomous learners require higher levels of dialogue (Moore, 2018).

In transactional distance theory, transactional distance hinges upon the interactions between dialogue and structure, with transactional distance decreasing as dialogue increases, and transactional distance increasing as structure increases (Reyes, 2013). Additionally, creating connection and understanding in the distance learning setting is the goal in the relationship between structure and dialogue:

> In both creating the right structure and determining the appropriate form of dialogue for any specific student, group of students and subject matter, the aim is to build a bridge across what might be conceived as a psychological distance—a distance or gap in what a student understands about a reality, and the understanding of that same reality by the person or persons charged with helping that student in the development of [their] knowledge. (Moore, 2018, pp. 33-34)

In the context of adult learners and online learning, transactional distance theory can contextualize the goals of online peer mentoring, with dialogue between adult learners and peer mentors serving to decrease transactional distance and allow increased autonomy for learners navigating the structure of distance education.

Adult Learners

Traditionally-aged students are generally accepted to be between the ages of 18 and 24, while adult learners are typically defined as students 25 and older who have never previously attended college (Gardner et al., 2022). Eckel and King (2004) further define adult learners as students who are "25 or older, have delayed entry into higher education after completing high school, did not earn a traditional high school diploma, are married, attend part-time, work full-time, or have children" (p. 7). Adult learners currently make up 38% of the college student population, with that number expected to rise in the future (Lumina Foundation, 2019).

With demand for employees with postsecondary degrees now outpacing the number of traditionally-aged college students, adults without postsecondary credentials are increasingly being engaged in higher education (Gardner et al., 2022; Merisotis, 2016). Adult learners may be motivated by the career and employment benefits associated with postsecondary degrees: workers holding a bachelor's degree have been shown to earn 82% more on average than those who hold only a high school diploma (Carnevale et al., 2013).

However, adult learners vary in their learning needs and preferences. Gardner et al. (2022) found that younger adult students are less likely to enroll in a fully online program than older adult students. Additionally, work status highly influences enrollment choices, with adult learners working full-time more likely to choose online courses; adult learners are also more likely to choose online programs while earning a degree in pursuit of career advancement with their current company, whereas adult learners seeking a degree for personal fulfillment are more likely to choose in-person programs (Gardner et

al., 2022). Career development is an important motivator for online adult learners, with the prospects of career enhancement a driving force behind online enrollment for many adult learners as well as a primary factor in their persistence (Wuebker, 2013).

Irrespective of college preparedness, adult learners are less likely to persist in online courses if they do not have support from family or an organization (Park & Choi, 2009). Adult learners are also at greater risk of dropping out when they perceive there is a conflict between work and school (Bergman et al., 2014). Additionally, research found that adult learners are less likely to drop out "when they are satisfied with the courses, and when the courses are relevant to their own lives" (Park & Choi, 2009, p. 215). Park & Choi (2009) propose that not only should instructional designers consider adult learners' motivations to keep them engaged, but instructors should also consider the external factors that adult learners encounter and offer additional strategies and support throughout the course.

Wuebker (2013) argues that the following three requirements are essential to online adult student success: "(1) accounting for the individual learning styles of adult students, (2) promoting the formation of community in online classes, and (3) expanding adult learners' information technology skills." (p. 39) When designing online courses aimed at adult learners, it is important to consider ways to accommodate a variety of learning styles while also allowing for self-directed learning (Wuebker, 2013). Flexibility in both course access, learning materials, and content influences student engagement and performance in the online classroom (Turan et al., 2022).

Instructor feedback is also important to adult learners; it has been found that students who receive inadequate feedback are more likely to withdraw from a course

(Wuebker, 2013). Instructor presence also influences student performance in online courses, with interpersonal interactions between instructors and students linked to increased student engagement (Dixson, 2012). In addition to instructor presence, building social community is also vital for adult learners in online courses, with dialogue and discussion between peers increasing the likelihood of course success (Song & Hill, 2009).

The importance of information technology skills also cannot be understated: adult learners with sufficient IT skills have a better chance of success in online courses than learners who do not (Wuebker, 2013). Prior literature suggests that students are more satisfied with online learning when they feel they have the ability to appropriately use the technology needed (Sahin & Shelley, 2008). To address these challenges, Wuebker (2013) recommends that institutions work with adult learners to prepare them ahead of enrolling in online coursework using techniques such as assessments of learning needs or technology orientations.

Ultimately, as the adult learner population continues to increase, it is vital to consider how best to support adult learners as well as the unique and complex challenges that this population faces. Adult learner persistence cannot be addressed without acknowledgment and consideration of the varied needs that adult learners have.

Adult Learners of Color

Learners of color now make up 42% of the overall postsecondary student population, with Latinx student enrollment growing threefold in 15 years and Black student enrollment increasing by 72% (Lumina Foundation, 2019). While we know that 38% of students are adult learners, relatively little literature has focused specifically on adult learners of color.

Historically, Black students have made up a larger proportion of adult learners than White students (Ross-Gordon, 2005). An explanation for this can be found in the disproportionately larger numbers of students of color who delay college enrollment following high school. For instance, 45% of Black and Native American students from low-income families postpone college compared to 32% of White students from low-income families (Lumina Foundation, 2019). Overall, Black and Latinx college participation rates have been lower than White participation rates; Black and Latinx secondary students complete high school at lower rates than White students, as well (Kuh et al., 2006).

Currently, nearly 40% of adults never completed high school or only completed high school and never earned college credits (National Center for Education Statistics, 2020). When broken down by race/ethnicity, this percentage is 34.9% for White adults, 46% for Black adults, and 60.8% for Latinx adults. Clearly, there is a larger pool of potential adult learners of color for colleges to serve in the future, but it is crucial that institutions recognize the unique challenges that students of color experience if they are to serve them well.

Research shows that adult learners of color have higher rates of financial insecurity and are more likely to have dependents to support; adult learners of color are also more likely to work part-time or full-time (Community College Research Center, 2021). In addition to external challenges that adult learners face outside of school, they also face internal challenges within their institutions. In comparison to White and Asian students, Black, Latinx, and Native American students are placed into developmental education courses in higher numbers (Community College Research Center, 2021). This

placement not only stigmatizes students of color but also impedes degree progress by increasing the number of courses needed for degree completion (Bettinger & Long, 2009). Additionally, many students of color encounter implicit biases within the university setting, which can impact their engagement and sense of belonging both inside and outside of the classroom (Banks & Bohy, 2019). It is imperative that institutions understand the external and internal challenges that students of color encounter to provide effective course and program design, teaching methods, and advising and support services aimed at increasing the retention and completion of adult learners of color.

Part-Time Learners

Part-time learners—those taking less than 12 credit hours per semester—in higher education often return to school after time away from education due to a life transition such as seeking career advancement, searching for a career change or a new position after a job loss, divorce or loss of a spouse, and children starting school or leaving the house (Jacoby, 2015). Additionally, many of these part-time learners returning to school will also be classified as adult learners; with 64% of learners 25 and older enrolled part-time, it is important to recognize that these students will have different and unique needs than full-time, traditionally-aged learners (Complete College America, 2022).

Part-time learners make up 40% of the student population in higher education, yet this population of students is often overlooked when it comes to student success and retention efforts (Lumina Foundation, 2019). Part-time learners have been found to be at greater risk of dropping out of school as well as being less engaged on campus; part-time learners also tend to be less integrated into the college community than full-time learners (Lee, 2018). Literature suggests that students who develop a strong sense of belonging

within the college community have a greater likelihood of persisting to graduation (Kember et al., 2001; O'Keeffe, 2013). These findings suggest that the importance of identifying ways to develop a sense of belonging in part-time learners cannot be understated.

Compared to 46% of full-time students, less than 20% of part-time students graduate from the institution where they first enrolled within eight years (Complete College America, 2022). In a study aimed at addressing attrition among part-time learners, Lee (2018) established that many part-time learners who return to school after an extended break find themselves unfamiliar with technology requirements, as well as essay writing and reference style requirements. Part-time students also identified that managing their academic commitments with work and personal obligations was more challenging than they expected; time constraints also prevented them from seeking help or taking advantage of support services (Lee, 2018).

However, despite the time constraints, part-time learners had a higher likelihood to persist if they developed a sense of belonging at their institution; additionally, this sense of belonging was more likely to develop among students who had positive social interactions with peers as well as positive interactions with faculty and staff (Lee, 2018). These results highlight the need for part-time learners to be offered outlets to establish these positive connections in ways that take their time constraints into consideration.

Gender and Adult Learning

Gender and family status has also been found to influence learning preferences among adult learners: women are more likely to pursue online programs than men, learners who are married or divorced have a higher rate of online enrollment, and learners

with children are more likely to choose online coursework (Gardner et al., 2022). Prior research has also shown differences between genders in how adult learners experience online learning: King-Spezzo (2020) found that "female adult learners expect higher levels of task orientation and teacher support in online courses than male adult learners" (p. 7). Additionally, Müeller (2008) determined that engagement and community-building in the online classroom positively affected female student persistence, suggesting that online courses designed with engagement in mind can be of significant value to female learners.

The effect of gender on the performance of online students has not produced consistent findings in recent years. Zhang et al. (2021) determined that among graduates, men performed better than women in online programs. However, Tosuntaş et al. (2015) found that women's willingness to utilize technology resulted in stronger academic performances when compared to men. Additionally, Aragon and Johnson (2008) reported that women completed their online coursework at a significantly higher rate than men, while Levy (2007) and Yu (2021) suggested that gender did not affect distance learning. The lack of agreement in prior research studies suggests that more research on the role of gender in distance education is needed.

College Readiness

College readiness refers to a student's preparedness to enter and succeed in entry-level postsecondary coursework without the need for developmental courses (Conley, 2012). Conley also contends that incoming college students

> must possess and master problem-solving skills (i.e., key cognitive strategies), demonstrate proficiency in college-level coursework (i.e., key content

> knowledge), and exhibit ownership of their own learning (i.e., academic behaviors). They must also have knowledge of academic and funding requirements and awareness of the cultural norms of the colleges and universities they seek to attend (i.e., contextual skills and awareness). (Ellis & Helaire, 2021, p. 166)

College readiness is also strongly tied to student engagement, with the quality of student learning influenced by the time and effort students put into their learning as well as the high expectations set by faculty and students themselves (Kuh et al., 2006). The importance of a student's ability to be highly engaged in their learning can also impact educational outcomes: "when students' expectations and experiences are appropriately aligned and match the reality they encounter, students are more likely to be satisfied with their college experience and to persist to graduation" (Ellis & Helaire, 2021, p. 166).

College readiness factors into not only a student's preparedness for college-level work but into degree completion, as well. Students who are not considered ready for postsecondary coursework are placed into noncredit developmental education courses, adding to the number of courses required for degree completion and increasing the length of time it takes to graduate (Bettinger & Long, 2009). Research also finds that not enough students move on from developmental to college-level coursework, resulting in the need for college readiness initiatives to reexamine their approaches (Wathington et al., 2016). In particular, developmental coursework enrollment "has been shown to decrease the likelihood that community college students will transfer to a four-year institution and earn a four-year degree" (Brower et al., 2021). Additionally, enrollment in developmental education courses has been found to increase the likelihood that students will drop out

(Bettinger & Long, 2005). This research suggests that developmental coursework has not increased persistence and graduation rates among students identified as needing additional college readiness support, many of whom are from marginalized and underserved communities (Brower et al., 2021).

Prior research asserts that barriers exist to college readiness development for marginalized and underserved secondary students (Deil-Amen & DeLuca, 2010; Kanno, 2018; Ellis & Helaire, 2021; Lindstrom et al., 2022). For marginalized youth, "developing ideas and plans about the world of postsecondary education and work may be restricted by low expectations from teachers and limited opportunities to engage in rigorous academic coursework" (Lindstrom et al., 2022). In a study of high school English language learners, Kanno (2018) found that college preparation opportunities were not made available to all students, with teachers not cognizant of the structural inequities in their school. Kanno (2018) also discovered that teachers at the school viewed the underachievement of marginalized students as a direct result of student deficits rather than a lack of opportunities and resources made available to them. It is therefore necessary to look at the barriers that marginalized and underserved students face in secondary education when considering the role of college readiness in higher education.

Conditional Admission

Increases to college enrollment have meant that many colleges and universities are seeing more students who are not academically prepared for college-level work and are considered at-risk of failure. Conditional admission policies are used in higher education to provide learning opportunities for students who either do not meet admission

requirements or whose test scores and academic record suggests they may need additional support once admitted (Stewart & Heaney, 2013). Conditional admission policies have proven especially useful in helping institutions increase college access for underrepresented groups. At many schools, conditionally admitted students are more likely to be low income, first-generation, and/or students of color (Stewart & Heaney, 2013).

The implementation of conditional admission programs varies widely by institution. Some universities require conditionally admitted students to achieve a specific GPA in their first semester or academic year before they can be fully admitted, effectively giving students a chance to prove that they can be successful college students (Adebayo, 2008). Other conditional admissions policies provide supplemental coursework or programming that reinforces academic skills needed for college, aiming to fill in any skills gaps that may still exist after high school (Johnson, 2000). Supplemental coursework offered to conditional admits often focuses on developmental support in reading, writing, or math, and is sometimes combined with additional tutoring or advising support (Stewart & Heaney, 2013).

Although low high school GPA and test scores have long been linked to lower student retention in the first year of college, more recent studies have shown that admissions criteria do not accurately predict persistence for the conditional admit population:

> Based on this case study, it appears that raising admissions criteria in GPA…may not have the intended result of radically changing overall success of the at-risk population. Rather than focusing on entry characteristics, our study revealed that

> students' academic and social behavior patterns—as well as their ability to develop meaningful goals for college—proved to be notably more influential than high school scores. (Heaney & Fisher, 2011, p. 72)

Another case study indicated similar results, with conditionally admitted students at Purdue University who attended a five-week summer bridge program performing better than their at-risk status suggested they should (Nemelka et al., 2017). This suggests that conditional admission programs have the potential to positively shape outcomes by focusing on student development through targeted extra support directly before and during the first year of college.

Learning communities are one way that conditionally admitted students can be positively impacted while enrolled in college. Learning communities at four-year institutions have resulted in many positive outcomes for students such as increased interaction with faculty, as well as increased levels of academic effort and integration (Zhao & Kuh, 2004). Additionally, learning communities have also proven to increase student engagement and persistence among at-risk student populations (Engstrom, 2008). One learning community targeted towards conditional admits found that students experienced higher levels of social integration when placed into a learning community at the time of their conditional admission (Heaney & Fisher, 2011).

Prior research also suggests that support from faculty positively influence GPA and persistence rates for conditional admit students (Schreiner et al., 2011); conditionally admitted students have also persisted at higher levels when they participated in an early arrival supplemental instruction program (Hensley & Davis, 2016). Additionally, offering support and instruction that focuses on a student's development of realistic self-appraisal

may also positively support the academic success of conditionally admitted students (Adebayo, 2008).

Few studies have been conducted to determine how the conditional admit label influences student performance. In a 2020 study, Zilvinskis et al. measured how being identified as a conditional admit student affected academic performance during the first year by looking at GPA, credits completed, and persistence. The findings showed that while GPA and persistence were not affected, credits completed decreased by 16% (Zilvinskis et al., 2020). These results suggest that a conditional admission policy is not helpful to students when no additional support is offered while they are enrolled. The support from peer mentors for conditionally admitted students has not been thoroughly explored, but the research findings of the need for a focus on student support and development for conditional admits suggests that a peer mentor program could have a place in the success of this student population.

Precollege Programs

An increased focus on improving access to postsecondary education over the past several decades has resulted in a renewed interest in precollege programs. Much of the literature in existence on precollege programs can be divided into two categories: precollege “access” programs for secondary education students, and precollege “summer bridge” programs for incoming college students. While the majority of precollege programs are targeted towards underrepresented and/or at-risk student populations, not all limit their population served in this way (Wathington et al., 2016).

Some of the oldest and more well-known precollege programs for secondary students include Upward Bound, Talent Search, and Gaining Early Awareness and

Readiness for Undergraduate Program (GEAR UP). In general, these types of precollege programs have similar aims:

> All these precollege access programs include services specifically designed to increase the number of students who apply for and attend college ready to succeed. Also, each program tailors its services to meet the specific needs of students in targeted schools and grades. These programs may provide tutoring and mentoring, take students to visit colleges, encourage students to apply to college, ensure that students enroll in high school courses required for college admissions, and help students complete college applications and financial aid forms. (Glennie et al., 2015, p. 964)

Tracking higher education outcomes for the secondary students served in these precollege programs has proven difficult. While research suggests little association between precollege programs and standardized test scores, a connection has been found between participation in precollege programs and a higher high school grade point average (Yampolskaya et al., 2006). Some positive outcomes have been noted for precollege access program participants, such as a positive association between college enrollment and earning a bachelor's degree for Upward Bound participants (Cahalan, 2009).

Additionally, students in these programs are more likely to apply for admission to college as well as for financial aid (Glennie et al., 2015). However, even with the higher rate of applying to college and for financial aid, a study by Glennie et al. (2015) determined that precollege access program participation did not increase college attendance rates in comparison to non-participants. The study also found that participants in precollege access programs persisted in college at lower rates than non-participants

(Glennie et al., 2015). The mixed higher education findings for precollege program participants suggest the need to better track outcomes as well as examine the potential needs of students as they matriculate to postsecondary education.

Precollege programs also exist in the form of summer bridge programs for incoming postsecondary students. The majority of these are run directly by colleges and universities with the aim of assisting with the adjustment to college as well as increasing the likelihood of success in college (Kuh et al., 2006). Many precollege programs also focus on improving academic and study skills gaps for at-risk students (Wathington et al., 2016).

One commonality in many summer bridge programs is the focus on providing supplemental instruction ahead of a student's first year of higher education, with many programs implementing research-based teaching strategies to deliver content:

> Not surprisingly, learning strategies in these precollege bridge programs are the same ones identified by some researchers as the most successful for supporting the learning of African-American students. They include: 1) more contact with professors, counselors, and other support staff, 2) hands-on or problem-based instruction, and 3) positive, heightened teacher-student interactions and learning climate. Needless to say, supplemental instructional programs might not be necessary if the traditional K-12 continuum evolved to match the learning styles, expectations, and skills of 21st-century students. (Howard-Vital, 2007, p. 6)

The recognition that many at-risk students are arriving unprepared for college is a hallmark of precollege summer bridge programs. For many of these programs, the focus on innovative teaching and positive student-instructor interactions aims to engage and

motivate students ahead of the formal instruction they will receive as first-year college students (Howard-Vital, 2007).

Precollege summer bridge programs also play an important role in not only the academic transition to college, but the social transition, as well. The Precollege Initiative for Minorities in Engineering (PRIME) program at Tennessee Technological University (TTU) provides a six-week summer program for African-American college-bound high school graduates who are interested in pursuing a career in engineering. Using academic coursework, tutorials, and peer mentor relationships, TTU assists students in the development of their career goals as well as prepares them for the challenges of college life both academically and socially. Past participants in the program have reported that they felt better prepared for engineering coursework and had a better understanding of what a major in engineering entailed (Marable, 1999).

Improving college readiness is the goal of many precollege summer bridge programs, though outcomes have been mixed when formally tracked. A study of a 2009 summer bridge program targeted at incoming students who placed into developmental coursework at eight open access Texas postsecondary institutions indicated that the program increased first-year course completion in math and writing courses (Wathington et al., 2016). However, the results also suggested that course completion in reading was not affected; there was also no indication that the program increased student persistence in the first year (Wathington et al., 2016). The City University of New York (CUNY) developed a semester-long program with similar aims, providing developmental courses in a pre-matriculation program for students who were not prepared for college-level coursework. Upon tracking students in the program across three years, researchers found

that program participants experienced significant increases in college readiness, with modest increases in graduation rates recorded, as well (Weiss et al., 2021).

The lack of consistency when it comes to observing positive impacts indicates the need for further research on the short-term and long-term effects of precollege programs. The mixed results also suggest that students may need further support during their time enrolled in postsecondary education. Additionally, there is very little research available for online precollege programs; online precollege programs may serve a different student population and the measurements of success may look different for online students than they do for traditional students. In particular, there is a need for further research on precollege programs aimed at part-time adult learners.

Student Engagement

Student engagement "involves the student's efforts to study a subject, to practice, to obtain feedback, to analyze, and to solve problems" (Bigatel & Williams, 2015, p. 1). With student engagement being an important predictor of persistence and degree completion (Bigatel & Williams, 2015), recent student success efforts have attempted to determine how to increase student engagement in the classroom.

Factors such as intentional student-faculty interactions and active and collaborative learning have been shown to contribute to student engagement (Kuh et al., 2006). However, much of the prior research on student engagement focused on a traditional student population taking in-person courses. Common student engagement practices may not be applicable to all student populations or in online learning platforms.

While there is wide acceptance that student engagement plays a strong role in degree completion, not all engagement practices indicate a positive correlation. In a

research study of high impact practices implemented at four-year public universities, Johnson and Stage (2018) found that there was a "missing link between academically engaging activities and college completion at large public universities" (p. 777). However, the high impact practices examined all involved instructor-led or university-led initiatives, with peer engagement not included in the study's focus.

Peer Mentoring

The influence of peers in student success efforts must not be overlooked. In some cases, the expectation of peers is the crucial factor in student academic engagement. In a study on GEAR UP, a precollege program designed to address racial and class disparities that focused on boosting college readiness in middle and high school students, Ellis and Helaire (2021) determined that "students sought academic support from peers when they believed peers expected them [to] do so" (p. 187). Establishing the expectation that students seek help from academic peers, therefore, creates a mentoring relationship that hinges upon buy-in from the mentee in the peer mentorship relationship.

Mentoring can be defined as "a relatively stable dyadic relationship between an experienced mentor and [their] less experienced mentee" (Hopp et al., 2020, p. 2). In college peer mentoring, the mentor is often closer in experience, having recently completed or accomplished what the mentee is currently attempting, but still participating in the student experience themselves. The peer mentor-mentee relationship has many benefits in the educational setting:

> The benefits of peer support for students are generally documented in terms of improved confidence and motivation, increased social and academic participation and a greater sense of belonging. For mentors, benefits have been described in

> terms of the development of deeper subject knowledge and enhanced employability skills. (Fayram et al., 2018, p. 314)

Peer mentoring also assists with transitions within the educational environment. Research shows that students who struggle with transition to a degree program or college life in general are more likely to struggle academically and be less engaged in their studies (Lowe & Cook, 2003). The peer mentor relationship enables mentors to guide mentees through the needed transitions, which promotes more successful learning for mentees while also reinforcing skillsets for mentors.

In terms of outcomes, the type of peer mentoring undertaken matters. Low-touch coaching interventions have not proven effective in increasing academic outcomes, though it did show to increase student understanding of the effort required to achieve high grades (Oreopoulos & Petronijevic, 2019). However, more personalized, one-on-one peer mentoring efforts were determined to be helpful in increasing academic outcomes (Oreopoulos & Petronijevic, 2018).

One prior study determined that peer-assisted learning and mentoring used in translanguage higher education instruction significantly improved student academic performance, with the relationship developed between non-native English students and English proficient students playing a vital role in the academic success documented by researchers (Meletiadou, 2022). Benefits of close, personalized interactions between high-achieving and low-achieving students were evident:

> The current research reveals that these practices enhance learners' emotional well-being alleviating language learning anxiety, reducing negative behavior, and promoting social justice through equity in education. These two practices have

> resulted in giving back voice to multilingual, multicultural, and low-achieving students, transforming cognitive structures by fostering language fluidity, raising well-being and attainment levels, and eventually transforming an unequal classroom into a more just educational space. (Meletiadou, 2022, p. 147)

The connections formed during these mentorship opportunities exemplify emotional engagement in the classroom, which relates to a student's motivation and expectations of learning and the sense of community found within the learning environment (Lee et al., 2019).

Peer mentor programs also provide social capital to participants (Ashtiani & Feliciano, 2018; Gibbs Grey, 2018). In a peer mentoring program focused on college access for Black and Latinx high school students, the relationship-building formed through the peer mentor program contributed to the development of social capital for mentees, whose mentors were recent peers now enrolled in college (Cavendish et al., 2022). The sense of community formed between mentors and mentees "foster[ed] the development of college going academic identities" (Cavendish et al., 2022, p. 20) and allowed mentees to envision themselves as future college students.

Although the literature on peer mentoring is extensive, further research is needed on how peer mentoring impacts student retention as well as degree completion. While one prior study showed that first-year peer mentoring programs improved course grades and retention, the findings were not statistically significant (Sharp, 2021). More quantitative studies that confirm the retention benefits of peer mentoring are needed, as well as further research on peer mentoring as it relates to adult learners and online students.

Online Peer Mentoring

Online learners have a unique set of needs and experience the learning environment differently than in-person learners. Online students "have a greater chance of becoming psychologically distanced from the learning experience than do students in face-to-face contexts" (Bigatel & Williams, 2015, p. 1). Student engagement has become an important focus of student success efforts in recent years. Engaging students in an online learning environment is an even larger point of focus and concern for faculty and higher education administrators in a post-pandemic world. Compared to traditional, in-person learning, both faculty and staff report lower levels of satisfaction and engagement with online learning (Passyn, 2021). Additionally, dropout rates have been shown to be two times higher in online courses compared to in-person courses (Passyn, 2021). Student retention and course completion are essential considerations when considering overall program completion in higher education. Recent studies affirm that engaged online learners are more satisfied with their learning experience and thus more likely to complete their programs (Hensley et al., 2021). While engagement with discussion forum posts and course materials have been shown to be predictors of success on final exams, the main predictor for course completion is submission of assignments (Soffer & Cohen, 2019). When considering student engagement to be the time and effort given to academic coursework (Ma et al., 2015), the task of engaging online learners involves creating an online environment that motivates students to consistently schedule time to learn as well as to follow through with completing assignments.

Previous attempts to engage online students have proven successful for some student populations, but not for all. In a research study designed to measure student

engagement using a gamification-based scavenger hunt embedded into the course shell, Passyn (2021) found that "although the scavenger hunt didn't significantly engage low-performing students, it did motivate and deepen top-performing students' engagement" (p. 1). Despite the study's success with engaging high-performing students, the need to address student engagement with low-performing students in online courses still exists.

A study of nursing students from Hensley et al. (2021) found engagement to be strongly linked to course satisfaction, with high levels of course satisfaction resulting in student retention and successful course completion. However, their study determined that interaction with classmates was not important to course engagement and satisfaction (Hensley et al., 2021). This finding seems in opposition to earlier research that found social isolation to have a direct impact on student attrition in online programs, with online students experiencing higher rates of social isolation and withdrawing from coursework in higher numbers than on campus students (Ali & Smith, 2015). An earlier study by Schaeffer and Konetes (2010) also determined that social isolation played a strong role in students' dissatisfaction in their online coursework. While other studies suggest that interaction with classmates is not an important factor in course satisfaction (Gray & DiLoreto, 2016), more research is needed on the impact of current students' interactions with peer mentors further along in the same program of study. The interaction of peer mentors may serve a different purpose from that of current classmates and may also help to address the issue of social isolation of online students.

Establishing a sense of community in online learning environments is an essential step in improving student outcomes. Hutton and Robson (2019) highlight presence as an essential element of community building, stating that "interpersonal contact is required to

establish presence and promote participant interaction, leading to feeling a sense of belonging" (p. 2). In online courses, a lower sense of community has been found to correlate with a higher level of frustration; additionally, online students are more likely to perceive that they will be unsuccessful in their coursework (Moore, 2014).

Initial research shows that a perceived sense of community aligns with improved retention and success in online courses (Moore, 2014). The implementation of peer mentorship programming, therefore, may provide online students the chance to develop a sense of community that guides them in changing their perception of the likelihood of success in the online learning environment. However, more research is needed to explore this connection:

> there has been little research into the nature and impact of peer support on student motivation and confidence in online contexts. This might be partly explained by the fact that the dominant view has been that a sense of community, allied to developing confidence and motivation, is confined to traditional settings. (Fayram et al., 2018, p. 314)

Initial studies support the idea that peer mentors can successfully engage students through community building. Hutton and Robson (2019) implemented online peer mentoring using successful prior students from the same science module not to provide academic support but to "answer student questions covering diverse topics including practical and digital study skills, emotional and moral support, navigation of online resources, confidence building and community building" (p. 3). Their findings determined that students were more likely to engage with peer mentors than course instructors, particularly when asking questions; additionally, course withdrawals within the first two weeks decreased by 2%

once peer mentors were integrated into the online course (Hutton & Robson, 2019). The use of prior students from this online course as peer mentors provided current students with a successful completion model to follow, potentially altering their perception of the likelihood of success in the course.

Community building has proven helpful in graduate education, as well. Fraenza and Rye (2021) established an online doctoral peer mentor program that aimed to help mentees "make social connections, adapt to their new identities as scholar-practitioners, and build academic and noncognitive skills necessary for success" (p. 140). Online graduate learners may be especially in need of this type of support, with prior studies establishing that online graduate learners experience increased stress while attempting to maintain a manageable balance between school, work, and personal life (Martinak, 2012; Ramos 2011). The peer mentor program created by Fraenza and Rye aimed to create a space for more informal interactions between students with the goal of increasing social integration in their online graduate courses. Using a Facebook group where mentors and mentees could hold casual conversations outside of the online learning platform, the program saw improved retention, with most mentees providing positive feedback on their experiences, though some noted that they did not have time to participate in mentee-mentor interactions; mentees also expressed that they would have liked to form a more personal connection with their mentor (Fraenza & Rye, 2021). The overall positive response for this online graduate peer mentorship program suggests that a similar program could be useful for online adult undergraduate learners.

Identity formation also plays an important role in the learning process, with students developing "a sense of who they are, and are becoming, in a process of dynamic

formation and redefinition of self in response to the social context" (Delahunty et al., 2014, p. 246). Online learning provides a platform for identity formation in similar ways:

> When a student contributes to the online class in some way, they engage in a process of portraying something of themselves to the group, with unfolding clues about who they are, what they know, what they value and how they think. (Delahunty et al., 2014, p. 246)

Peer mentoring may provide additional means for students to develop their identities in an academic context. With the identification of socio-emotional support as important for online students (Delahunty et al., 2014), finding ways to provide this type of support is crucial in creating a learning environment that encourages students to reflect on their learning process through the sharing of details about themselves. Building a sense of community through the use of peer mentors is one way that this sharing can be encouraged. In a qualitative analysis of peer mentoring discussion forums, Fayram et al. (2018) suggest that interaction with online peer mentors had a positive impact on student confidence. In addition to providing moral support, peer mentors also created a sense of community in the online forums through "the sharing of personal information by mentors, such as their own background and experience of studying" (Fayram et al., 2018, p. 322). These types of interactions between mentors and mentees allow students to continue to develop their sense of self and further refine their academic identities.

Online peer mentoring programs have also previously been shown to have a positive impact on students' motivation and study behavior (Hardt et al., 2022). During the spring of 2020, Hardt et al. (2022) implemented an online peer mentoring program that utilized one-on-one remote meetings to discuss study skills, goal-setting, time

management, and exam preparation. Study results showed an increase in motivation and effective study behavior, though students' earned credit hours and GPAs were not affected; moreover, high performing students were positively affected, with low-performing students not affected by the peer mentoring intervention (Hardt et al., 2022). With previous research showing that students with low GPAs are less successful in online courses (Bettinger et al., 2017), the need for intervention with low-performing online students remains. There is not a wealth of literature exploring online peer mentoring interventions, especially with regards to low-performing students and earned admissions programs, and further research is needed to widen the scope of what prior research addressed.

Conclusion

As demand for college graduates increases, the number of traditionally-aged college students continues to decline and higher education has focused new efforts on enrolling adult learners in degree programs (Gardner et al., 2022; Merisotis, 2016). Adult learners are more likely to enroll part-time and take online courses, as well as balance work with school. Part-time learners are particularly at risk of dropping out of school and also have lower levels of engagement on campus (Lee, 2018). As student engagement has been found to be an important predictor of persistence (Bigatel & Williams, 2015), higher education institutions are increasingly looking to expand student engagement in both the traditional classroom as well as the online classroom. Student engagement in online learning is of particular concern in a post-pandemic world where online enrollment has increased, with dropout rates found to be two times higher in online courses versus traditional, in-person courses (Passyn, 2021). Peer mentoring initiatives are one way that

institutions are engaging postsecondary students, though little is known about the applicability of these initiatives to online learning. Prior studies examining online peer mentoring initiatives have focused less on academic outcomes that can be quantified and more on student feedback and observations through qualitative methodological approaches. Additionally, there is limited research on the impact that peer mentoring has on adult learners. These gaps in research suggest a need for further investigation on the relationship between adult learners and online peer mentoring. The information gathered in this study will speak to the influence of online peer mentoring on adult learner persistence as well as consider how adult peer interactions influence engagement within college readiness and precollege programs.

CHAPTER III.

METHODOLOGY

The literature suggests that online peer mentoring may have a positive effect on course outcomes, though there is a need for further investigation on how adult learners experience online peer mentoring. With part-time adult learners at particular risk of dropping out and less likely to be engaged in their coursework (Lee, 2018), a peer mentoring section of Unit 1 of Prep Academy was launched to encourage persistence for its part-time adult learners.

Subjects

This cross-sectional study focused on part-time adult learners in an online precollege program at a four-year public research university. The investigator collected data from UofM Global's Prep Academy, part of the corporate partnership online program offerings from the University of Memphis in Memphis, Tennessee. One of the larger corporate partnerships (referred to as CP1) is with a large, multi-site company with 11,000 eligible employees from across the United States. This study used data from the Fall 2022 course sections—which the investigator set up in advance of the data collection phase—comparing completion percentages of two sections of CP1 Prep Academy's Unit 1.

A total of 101 students were enrolled in the Fall 2022 Unit 1 CP1 Prep Academy course sections between August and December 2022 and included in the analysis. All students enrolled in the CP1 Unit 1 course sections were employed by CP1 and worked at one of the company's US sites. Due to the nature of Prep Academy's corporate

partnership, a small percentage of students enrolled are between the ages of 19 and 24 and fall into the age range of what would typically be defined as traditionally-aged students. Of the 101 students included in the study, 25 students—or 24.8% of students—were traditionally-aged. However, because these students were employed full-time and eligible to participate in a part-time corporate partnership tuition benefit program, they shared many characteristics with adult learners, including meeting three or more components from the Eckel and King (2004) adult learner definition (delayed college matriculation, did not earn a traditional high school diploma, enrolled in school part-time, work full-time, are married, or have children); for this reason, they were included in the results.

Before analyzing data, the investigator submitted an exempt review application to MTSU's Institutional Review Board (IRB). Upon approval, the investigator submitted an additional exempt review application to the University of Memphis's IRB and received confirmation that the study was exempt. This study did not use any identifiable personal information from students, and therefore, did not use informed consent, disclosure, or confidentiality agreements.

Research Design

In this quantitative study, the effectiveness of online peer mentoring in part-time adult learners was assessed using a quasi-experimental research design prior to data collection, with a retrospective, non-experimental research design used during data collection. According to Johnson and Christensen (2020), a quasi-experimental design is "an experimental research design that does not provide for full control of potential confounding variables primarily because it does not randomly assign

participants to comparison groups" (Johnson & Christensen, 2020, p. 340). When random assignment is not possible, a quasi-experimental research design is preferable to a weak experimental research design (Johnson & Christensen, 2020).

Threats to internal validity do exist with quasi-experimental designs, however. As confounding variables are not controlled for in quasi-experimental designs, causal conclusions are harder to determine:

> To make a causal inference from a quasi-experiment, you must meet the same basic requirements that are needed for any causal relationship: *Cause must covary with effect, cause must precede effect, and rival hypotheses or alternative explanations must be implausible.* The first two of these requirements are easy to handle because quasi-experiments, like strong or randomized experiments, manipulate conditions so that the cause is forced to precede the effect and covariation between cause and effect is tested, typically through statistical analysis. (Johnson & Christensen, 2020, p. 342)

Without random assignment, it is difficult to eliminate rival hypotheses. In quasi-experimental designs, implausible rival hypotheses must be dismissed before making causal inferences (Gopalan et al., 2020). In this study, causal conclusions were not reached since no determination was made regarding rival hypotheses.

According to Johnson and Christensen (2020), in non-experimental design, "the researcher does not manipulate the independent variable…; the researcher can look back at what naturally happened in the past, or [they] can move forward and observe what happens over time…; and the researcher observes how variables relate to one another" (pp. 368-369). By definition, non-experimental research cannot contain

manipulation of an independent variable or random group assignments (Johnson & Christensen, 2020). Unlike experimental research, non-experimental designs cannot determine causality, with non-experimental studies being "more tentative, more exploratory, and less conclusive" (Johnson & Christensen, 2020, p. 369). By using existing, retrospective data from the Fall 2022 Prep Academy courses, the data collection for this study used a non-experimental research approach.

In this study, the dependent variable is course completion percentage, the independent variable is online peer mentoring, and the control variables are race/ethnicity and biological sex. Student information was converted into data consisting of White or student of color for race/ethnicity and male or female for biological sex. As described in Chapter One, the Prep Academy consists of a sequence of three online courses (Unit 1, Unit 2, and Unit 3). Unit 1 of Prep Academy had a control group section and a treatment group section. The control section of Unit 1 was taught as in previous semesters while the treatment section had three peer mentors assigned to the course. Students beginning Unit 1 were assigned to the control or treatment section based on the first letter of their last names, with A-L last names assigned to the control group and M-Z last names assigned to the treatment group.

As discussed in Chapter One, students are automatically placed into the next unit upon completion of their current unit. Additionally, students earn admission to the university upon completion of the third and final unit of Prep Academy. For this reason, the best measure of persistence for this study is to look at the rate of completion by unit. This was done by calculating completion percentages for each section of Unit 1.

Peer Mentor Selection and Role

Three current adult learners were hired by UofM Global in summer 2022 to serve as peer mentors in Prep Academy, with each mentor assigned to the first unit of Prep Academy. The investigator identified a list of ten former Prep Academy completers who were 25 or older, currently enrolled in a degree program through UofM Global's corporate partnership program with CP1, who had cumulative GPAs of 3.5 or higher, and who were learners of color. From this list, advisors for UofM Global provided recommendations of students who they would recommend for the peer mentor role, with three students identified as having previously expressed interest in leadership roles and coursework. These three students were invited to apply for the peer mentor roles; after brief online interviews, all three were offered a peer mentor position for the 2022-2023 academic year, with all three accepting the offer.

Each of the peer mentors was provided with a $3,000 stipend funded by a Partnerships for Adult Learner Success (PALS) grant from the Association of Public and Land-grant Universities (APLU) and the Coalition of Urban Serving Universities (USU). Each mentor was paid $1,000 after completing training in summer 2022, $1,000 in fall 2022, and a final $1,000 in spring 2023. Each mentor was assigned to the treatment section of Unit 1 of Prep Academy and provided with ten hours of training spread throughout July 2022. Training was conducted remotely, with a focus on asynchronous content where possible. Mentors were also placed as observers in current sections of their assigned Prep Academy unit so they could refamiliarize themselves with course content.

Peer mentors were placed into the Fall 2022 treatment section of Unit 1 under the tutor role in Canvas, the learning management system used by the University of

Memphis. The tutor role allows students who are not taking the course to view all content and participate in discussion posts but does not allow students to see the instructor's gradebook. Within Unit 1, each mentor was assigned a group of students they would serve as primary mentor for throughout the course. Mentee assignments continued to be made as new students enrolled in Unit 1 between August 2022 and December 2022.

At the beginning of Unit 1, students were provided with an overview of what peer mentoring is and encouraged to stay in contact with their peer mentor throughout their time in the course. Students were also able to view a welcome message written by their peer mentor that included an overview of their own time in Prep Academy and what they gained from it, a short biography and photograph, and information about their current role at CP1 as well as their future plans once they graduate with their degree.

The peer mentoring experience was embedded into the Unit 1 course shell via a series of discussion posts that asked students to reflect on their self-concept and experiences as a learner, as well as to articulate how they felt about their current learning experience as a working adult learner. Mentors responded to all student posts, offering words of encouragement, providing advice, and sharing stories of how they previously balanced work with Prep Academy. Additionally, mentors created their own responses in each discussion topic, further reflecting on their own learning experiences in more depth. In addition to interactions through the discussion boards in the course shell, mentors also performed monthly outreach to each of their assigned students, contacting them through email and text messages to check in and provide encouragement.

Analysis of the Data

Data from the Fall 2022 cohort of students enrolled in both the control and treatment sections of Unit 1 of Prep Academy was deidentified and analyzed using IBM SPSS Statistics 27 in July 2023. Because students enrolled in and began units at various start dates across the Fall 2022 semester, and because course sections stayed open for two academic semesters, student completion was determined by whether a student had completed an individual unit by the course section closing date. This means that students had between five and nine months to complete the unit depending on when they enrolled. Students who did not complete the course by the closing date were considered non-completers of the Fall 2022 section, though per Prep Academy policy they were provided the opportunity to move their work to a new course section and continue working where they left off. The study's hypotheses were analyzed using chi square tests of independence to determine if there was an association between online peer mentoring and course completion for part-time adult learners and part-time adult learners of color, as well as an association between online peer mentoring and course completion among male and female part-time adult learners.

Chi-Square Test of Independence

This study utilized chi-square tests of independence to analyze the Fall 2022 completion percentage data and test the study's hypotheses. The chi-square test of independence, also commonly known as the Pearson chi-square test, "measures an overall discrepancy between a set of observed frequencies and expected frequencies" (Loisel & Takane, 2016). In other words, a chi-square test of independence compares "the frequencies you observe in certain categories to the frequencies you might expect

to get in those categories by chance" (Field, 2018, p. 838). Highly useful in statistical testing when the variables are nominal, the chi-square test "can provide information not only on the significance of any observed differences, but also provides detailed information on exactly which categories account for any differences found" (McHugh, 2013, p. 143). Additionally, a chi-square test can be advantageous to use because of "the detailed information that can be derived from the test, its use in studies for which parametric assumptions cannot be met, and its flexibility in handling data from both two groups and multiple group studies" (McHugh, 2013, p. 143). However, a chi-square test can be limited in its effectiveness for smaller sample sizes (Field, 2018).

In using chi-square tests of independence for hypotheses testing, this study used course completion as the dependent variable, online peer mentoring as an independent variable, and race/ethnicity and biological sex as control variables. The study utilized two distinct groups of students, one that received peer mentoring (treatment) and one that did not receive peer mentoring (control). Due to some overlap in enrollment between units as students progress to new units throughout the semester, only data from Unit 1 of Prep Academy was analyzed.

A 2x2 contingency table was used for analysis of the information. According to Field (2018), a contingency table "is a table representing the cross-classification of two or more categorical variables" (p. 118). In a contingency table, "the levels of each variable are arranged in a grid, and the number of observations falling into each category is contained in the cells of the table" (Field, 2018, p. 118). For the contingency table used in this study, independent and control variables were included in the rows and the dependent variable was included in the columns.

The first hypothesis analyzed was:

H_1: Participation in an online peer mentoring program is associated with course completion among part-time adult learners.

For this hypothesis, the dependent variable was course completion (coded 0 = completion and 1 = no completion) and the independent variable was online peer mentoring (coded 0 = received online peer mentoring and 1 = did not receive online peer mentoring). In addition to creating a 2x2 contingency table, chi-square was used to consider the frequency of each variable alongside how likely they were to occur by chance (Field, 2018). The alpha level—or significance level—used in this study's chi-square tests was 0.05.

The final two hypotheses analyzed were:

H_2: Participation in an online peer mentoring program is associated with course completion among part-time adult learners of color.

H_3: Participation in an online peer mentoring program is associated with course completion among male and female part-time adult learners.

However, a 2x2 chi-square test will not be able to determine if the control variables of race/ethnicity and biological sex influence the association between the dependent and independent variables. In order to determine if the control variables affected the association between course completion and online peer mentoring, a layered crosstabulation analysis was performed. In a layered crosstabulation analysis, two or more categorical variables are split into further categories, which then allows for a comparison of the relationship between the variables using chi-square (Field, 2018).

This study also used Cramer's V test to measure effect size on all hypotheses. Cramer's V is a strength test commonly used to test the data when a chi-square test produces a significant result (McHugh, 2013). The Cramer's V test statistic ranges from 0 to 1 and can be used to designate low, medium, and high levels of strength (Field, 2018). However, it is important to note that a major limitation of the Cramer's V test is that it can show a weak correlation for results that are significant (Field, 2018).

Field (2018) also suggests calculating an odds ratio to further analyze effect size of categorical data. In addition to calculating Cramer's V, the study also used the following formula to determine an odds ratio for each research question:

$$\text{Odds completion} = \frac{\text{yes completion / number of students}}{\text{no completion / number of students}}$$

This formula was used to calculate an effect size for the treatment group as well as the control group, with the two odds ratios then divided to establish an odds ratio between groups. The following formula was used to calculate the odds ratios between the two groups:

$$\text{Odds} = \frac{\text{Odds ratio results group 1}}{\text{Odds ratio results group 2}}$$

This calculation determined the degree to which each group is more likely to complete Unit 1 of Prep Academy.

Assumptions

This study assumes that the subjects are only included once in the study and that the subjects will remain constant throughout the study. Additionally, the study assumes that the subjects included in the study are employed by the same company, eligible to participate in a corporate partnership tuition benefit program, and enrolled part-time in an online precollege program.

All hypotheses will be analyzed using chi-square tests of independence to determine if there are associations between variables. According to Field (2018), a chi-square test of independence has the following assumptions:

1. Each person, item, or entity must contribute to only one cell of the contingency table.
2. All *Expected Counts* should be greater than 1, and no more than 20% of the expected counts should be less than 5.

Summary

This chapter described the methodology used for this study. The investigator set up control and treatment sections of the Fall 2022 sections of Prep Academy in advance of data collection. A total of 101 students enrolled in one of the two sections of Unit 1 between August and December 2022 and had between five and nine months to complete the course. The investigator analyzed data retrospectively in July 2023, using course completion percentage as the dependent variable, online peer mentoring as the independent variable, and race/ethnicity and biological sex as control variables. Chi-square tests of independence were used to analyze each research question and a 2x2 contingency table was created to analyze the data in hypothesis one. For hypotheses two

and three, layered crosstabulation analyses were performed to examine the effect of the control variables. Further analysis of each research question was performed using Cramer's V tests and odds ratios calculations. The results of these tests will be discussed in Chapter IV.

CHAPTER IV.

RESULTS

In response to the unique needs of part-time adult learners in an online learning environment, as well as the need to increase engagement and persistence in an online precollege program, this study aimed to assess whether there was an association between online peer mentoring and course completion for part-time adult learners as well as part-time adult learners of color. Additionally, the study investigated whether there was an association between online peer mentoring and course completion among male and female part-time adult learners.

A dataset containing a grade of satisfactory or no credit, race/ethnicity, biological sex, and age for the two CP1 Unit 1 sections of Prep Academy from Fall 2022 was requested by the researcher and provided by the university. The university provided the data in two separate sets, one being the control course section and one being the treatment course section, which the researcher then combined into one dataset. In preparation for performing a chi-square analysis in SPSS, the researcher categorized the control course section as "0 = Did not receive peer mentoring" and the treatment section as "1 = Received peer mentoring" and a no credit grade as "0 = Not completed course" and a satisfactory grade as "1 = Completed course." Race/ethnicity was categorized as "0 = White" and "1 = Student of Color" and biological sex was categorized as "0 = Female" and "1 = Male." Additionally, age was categorized into the following three groups: "0 = 19-24," "1 = 25-35," and "2 = 36 and Older."

This chapter will provide the results of the data analysis using statistical methods in SPSS. In addition to describing the participant population using descriptive statistics, chi-square analysis results for each research question will be presented. Additionally, results from Cramer's V tests and odds ratios calculations for each research question will also be presented.

Descriptive Statistics

Table 3 presents the demographic characteristics of 101 CP1 students enrolled in two Fall 2022 sections of Prep Academy's Unit 1. The total number of students included in the study from both control and treatment sections was (n = 101). The data was categorized by race/ethnicity as White (n = 30) or Students of Color (n = 71); by biological sex as Female (n = 55) or Male (n = 46); by age as 19-24 (n = 25), 25-35 (n = 37), or 36 and Older (n = 39); and by Completion status as yes (n = 39) or no (n = 62). As demonstrated in Table 3, a greater percentage of students of color (70.30%) were enrolled in Unit 1, which is typical for the program and closely aligned with the Spring 2022 CP1 Unit 1 percentage of students of color (65.84%). Additionally, the percentage of females enrolled (54.50%) was slightly higher than the percentage of males enrolled (45.50%). These percentages were similar to the Spring 2022 CP1 Unit 1 demographics, though male enrollment during the Spring 2022 semester was slightly higher (52.8%) than female enrollment (47.20%). A small percentage of students enrolled were under 25 (24.80%) while the majority of students enrolled were 25 and older (75.20%). Overall, the completion rate for CP1 Unit 1 students was 38.60% for the Fall 2022 semester.

Table 3

Demographic Characteristics of Participants that are Enrolled in the Fall 2022 CP1 Sections of Prep Academy's Unit 1 (N = 101)

Characteristic	*n*	*%*
Race/Ethnicity		
White	30	29.70%
Students of Color	71	70.30%
Biological Sex		
Female	55	54.50%
Male	46	45.50%
Age		
19-24	25	24.80%
25-35	37	36.60%
36 and Older	39	38.60%
Completion		
Yes	39	38.60%
No	62	61.40%

Chi-Square Tests of Independence

Analysis of Research Question One

Q_1: Is online peer mentoring associated with course completion for part-time adult learners?

H_1: Participation in an online peer mentoring program is associated with course completion among part-time adult learners.

$H_0$1: Participation in an online peer mentoring program is not associated with course completion among part-time adult learners.

Table 4 provides the results from the contingency table used to analyze the frequencies of online peer mentoring and course completion for CP1 Unit 1 Prep Academy students from Fall 2022. The contingency table had no subject contribute to more than one cell of the table and no expected counts were less than 5, meaning that all chi-square test assumptions were met and the chi-square results could be used to determine whether there was an association between online peer mentoring and course completion.

As shown in Table 4, part-time adult learners who did not receive online peer mentoring completed the course at a rate of 29.8% while part-time adult learners who did receive online peer mentoring completed the course at a rate of 50%. Results indicated a significant association between online peer mentoring and course completion for part-time adult learners ($X^2(1) = 4.264$, $p = .039$). The Cramer's V test demonstrated a moderate association between the two variables (*Cramer's V* = .205, $p = .039$). Additionally, the odds ratio calculation determined that students who received online peer mentoring were 2.35 times more likely to complete the course than students

who did not receive peer mentoring. As a significant association was found, H_01 was rejected.

Table 4

Frequencies of Peer Mentoring and Completion among CP1 Unit 1 Students (N = 101)

			Completion		
			Yes	No	Total
Peer Mentoring	No	Count	17	40	57
		Expected Count	22	35	57.0
		% within Peer Mentoring	29.8%	70.2%	100.0%
		% within Completion	43.6%	64.5%	56.4%
		% of Total	16.8%	39.6%	56.4%
		Standardized Residuals	0.8	-1.1	
	Yes	Count	22	22	44
		Expected Count	17	27	44.0
		% within Peer Mentoring	50.0%	50.0%	100.0%
		% within Completion	56.4%	35.5%	43.6%
		% of Total	21.8%	21.8%	43.6%
		Standardized Residuals	1.2	-1.0	
Total		Count	39	62	101
		Expected Count	39.0	62.0	101.0
		% within Peer Mentoring	38.6%	61.4%	100.0%
		% within Completion	100.0%	100.0%	100.0%
		% of Total	38.6%	61.4%	100.0%

Pearson Chi Square: X2(1) = 4.264, p =.039
Cramer's V = .205, *p* = .039*; OR =2.35*

Analysis of Research Question Two

Q_2: Is online peer mentoring associated with course completion for part-time adult learners of color?

H_2: Participation in an online peer mentoring program is associated with course completion among part-time adult learners of color.

H_02: Participation in an online peer mentoring program is not associated with course completion among part-time adult learners of color.

Table 5 displays the contingency table used to analyze the frequencies of online peer mentoring and course completion for part-time White adult learners. The contingency table met the chi-square test assumptions, with all subjects contributing to only one cell of the table and no expected counts that were less than 5. Since all assumptions were met, the chi-square results were used to analyze the association between the variables for this population.

As indicated in Table 5, part-time White adult learners who did not receive online peer mentoring completed the course at a rate of 42.9% while part-time White adult learners who did receive online peer mentoring completed the course at a rate of 37.5%. Results suggested that there was not a significant association between the independent and dependent variables among part-time White adult learners ($X^2(1) = .089$, $p = .765$). Additionally, the Cramer's V test did not indicate an association between online peer mentoring and course completion for White students (*Cramer's V* = .055, $p = .765$). As there was no significant association found between the two variables among part-time White adult learners, an odds ratio was not calculated for this population.

Table 5

Frequencies of Peer Mentoring and Completion among CP1 Unit 1 White Students (N = 30)

			Completion		
			Yes	No	Total
Peer Mentoring	No	Count	6	8	14
		Expected Count	5.6	8.4	14.0
		% within Peer Mentoring	42.9%	57.1%	100.0%
		% within Completion	50.0%	44.4%	46.7%
		% of Total	20.0%	26.7%	46.7%
		Standardized Residuals	0.2	-0.1	
	Yes	Count	6	10	16
		Expected Count	6.4	9.6	16.0
		% within Peer Mentoring	37.5%	62.5%	100.0%
		% within Completion	50.0%	55.6%	53.3%
		% of Total	20.0%	33.3%	53.3%
		Standardized Residuals	-0.2	0.1	
Total		Count	12	18	30
		Expected Count	12.0	18.0	30.0
		% within Peer Mentoring	40.0%	60.0%	100.0%
		% within Completion	100.0%	100.0%	100.0%
		% of Total	40.0%	60.0%	100.0%

Pearson Chi Square: X2(1) = .089, p =.765
Cramer's V = .055, *p* = .765

Table 6 displays the contingency table used to analyze the frequencies of online peer mentoring and course completion for part-time adult learners of color. With all subjects contributing to only one cell of the table and no expected counts less than 5, the chi-square test assumptions were met and the results were used to analyze the association between the variables for this population.

As shown in Table 6, part-time adult learners of color who did not receive online peer mentoring completed the course at a rate of 25.6% while part-time adult learners of color who did receive online peer mentoring completed the course at a rate of 57.1%. Results indicated that there was a significant association between online peer mentoring and course completion for part-time adult learners of color ($X^2(1) = 7.168$, $p = .007$). The Cramer's V test demonstrated a moderate association between the independent and dependent variables for students of color (*Cramer's V* = .318, $p = .007$). Additionally, an odds ratio was calculated for this population and determined that part-time adult learners of color who received online peer mentoring were 3.88 times more likely to complete the course than part-time adult learners of color who did not receive peer mentoring.

While there was no significant association found between the variables among part-time White adult learners, there was a significant association found among part-time adult learners of color. With the significance determined among part-time adult learners of color, the null hypothesis for research question two was rejected.

Table 6

Frequencies of Peer Mentoring and Completion among CP1 Unit 1 Students of Color (N = 71)

			Completion		
			Yes	No	Total
Peer Mentoring	No	Count	11	32	43
		Expected Count	16.4	26.6	43.0
		% within Peer Mentoring	25.6%	74.4%	100.0%
		% within Completion	40.7%	72.7%	60.6%
		% of Total	15.5%	45.1%	60.6%
		Standardized Residuals	-1.3	1	
	Yes	Count	16	12	28
		Expected Count	10.6	17.4	28.0
		% within Peer Mentoring	57.1%	42.9%	100.0%
		% within Completion	59.3%	27.3%	39.4%
		% of Total	22.5%	16.9%	39.4%
		Standardized Residuals	1.6	-1.3	
Total		Count	27	44	71
		Expected Count	27.0	44.0	71.0
		% within Peer Mentoring	38.0%	62.0%	100.0%
		% within Completion	100.0%	100.0%	100.0%
		% of Total	38.0%	62.0%	100.0%

Pearson Chi Square: X2(1) = 7.168, p =.007
Cramer's V = .318, *p* = .007*; OR=3.88*

Analysis of Research Question Three

Q_3: Is online peer mentoring associated with course completion among male and female part-time adult learners?

H_3: Participation in an online peer mentoring program is associated with course completion among male and female part-time adult learners.

$H_0$3: Participation in an online peer mentoring program is not associated with course completion among male and female part-time adult learners.

Table 7 provides the contingency table used to analyze the frequencies of online peer mentoring and course completion for part-time female adult learners. The contingency table met the chi-square test assumptions, as all subjects contributed to only one cell of the table and no expected counts were less than 5. With all assumptions met, the chi-square results were used to analyze the association between the independent and dependent variables for this population.

As shown in Table 7, part-time female adult learners who did not receive online peer mentoring had a 28.1% completion rate for the course while part-time female adult learners who received online peer mentoring had a 39.1% course completion rate. Results determined there was not a significant association between online peer mentoring and course completion among part-time female adult learners ($X^2(1) = .736$, $p = .391$). Additionally, the Cramer's V test indicated no association between the two variables for female students (*Cramer's V* = .116, $p = .391$). Since there was no significant association found between online peer mentoring and completion among part-time female adult learners, an odds ratio was not calculated for this population.

Table 7

Frequencies of Peer Mentoring and Completion among CP1 Unit 1 Female Students (N = 55)

			Completion		
			Yes	No	Total
Peer Mentoring	No	Count	9	23	32
		Expected Count	10.5	21.5	32.0
		% within Peer Mentoring	28.1%	71.9%	100.0%
		% within Completion	50.0%	62.2%	58.2%
		% of Total	16.4%	41.8%	58.2%
		Standardized Residuals	-0.5	0.3	
	Yes	Count	9	14	23
		Expected Count	7.5	15.5	23.0
		% within Peer Mentoring	39.1%	60.9%	100.0%
		% within Completion	50.0%	37.8%	41.8%
		% of Total	16.4%	25.5%	41.8%
		Standardized Residuals	0.5	-0.4	
Total		Count	18	37	55
		Expected Count	18.0	37.0	55.0
		% within Peer Mentoring	32.7%	67.3%	100.0%
		% within Completion	100.0%	100.0%	100.0%
		% of Total	32.7%	67.3%	100.0%

Pearson Chi Square: X2(1) = .736, p =.391
Cramer's V = .116, *p* = .391

Table 8 displays the contingency table used to analyze the frequencies of online peer mentoring and course completion for part-time male adult learners. Since all subjects contributed to only one cell of the table and no expected counts were less than 5, the chi-square test assumptions were met and the results were used to analyze the association between the independent and dependent variables for this population.

As presented in Table 8, part-time adult male learners who did not receive online peer mentoring completed the course at a rate of 32% while part-time male adult learners who received online peer mentoring had a course completion rate of 61.9%. Results determined that there was a significant association between online peer mentoring and course completion for part-time male adult learners ($X^2(1) = 4.114$, $p = .043$). Additionally, the Cramer's V test demonstrated a moderate association between the independent and dependent variables for male students (*Cramer's V* = .299, $p = .043$). An odds ratio was also calculated and determined that part-time male adult learners who received online peer mentoring were 3.45 times more likely to complete the course than part-time male adult learners who did not receive online peer mentoring.

No significant association was found between the variables among part-time female adult learners, though a significant association was found among part-time male adult learners. However, since there was only a partial association found, the null hypothesis for research question three was retained.

Table 8

Frequencies of Peer Mentoring and Completion among CP1 Unit 1 Male Students (N = 46)

			Completion		
			Yes	No	Total
Peer Mentoring	No	Count	8	17	25
		Expected Count	11.4	13.6	25.0
		% within Peer Mentoring	32.0%	68.0%	100.0%
		% within Completion	38.1%	68.0%	54.3%
		% of Total	17.4%	37.0%	54.3%
		Standardized Residuals	-1.0	0.9	
	Yes	Count	13	8	21
		Expected Count	9.6	11.4	21.0
		% within Peer Mentoring	61.9%	38.1%	100.0%
		% within Completion	61.9%	32.0%	45.7%
		% of Total	28.3%	17.4%	45.7%
		Standardized Residuals	1.1	-1.0	
Total		Count	21	25	46
		Expected Count	21.0	25.0	46.0
		% within Peer Mentoring	45.7%	54.3%	100.0%
		% within Completion	100.0%	100.0%	100.0%
		% of Total	45.7%	54.3%	100.0%

Pearson Chi Square: X2(1) = 4.114, p =.043
Cramer's V = .299, *p* = .043; OR=3.45

Summary

This chapter presented the results of the chi-square analyses used to determine the association between the dependent variable (course completion) and the independent variable (online peer mentoring), with race/ethnicity and biological sex serving as control variables. As contingency tables for each research question had no

subjects that contributed to more than one cell of the table and no expected counts that were less than 5, all assumptions for the chi-square tests were met and chi-square tests of independence were used to analyze the data. The analysis of each chi-square test, Cramer's V test, and odds ratio calculation for each hypothesis determined the following:

H_1: Participation in an online peer mentoring program is associated with course completion among part-time adult learners.

$H_0$1: Participation in an online peer mentoring program is not associated with course completion among part-time adult learners.

Result: A significant association was found between online peer mentoring and course completion for part-time adult learners and the null hypothesis was rejected.

H_2: Participation in an online peer mentoring program is associated with course completion among part-time adult learners of color.

$H_0$2: Participation in an online peer mentoring program is not associated with course completion among part-time adult learners of color.

Result: A significant association was found between online peer mentoring and course completion for part-time adult learners of color, while there was no significant association found for part-time White adult learners. Since there was significance found among part-time adult learners of color, the null hypothesis was rejected.

H_3: Participation in an online peer mentoring program is associated with course completion among male and female part-time adult learners.

$H_0$3: Participation in an online peer mentoring program is not associated with course completion among male and female part-time adult learners.

Result: No significant association was found between online peer mentoring and course completion among part-time female adult learners; however, there was a significant association found for part-time male adult learners. Since there was only a partial association found, the null hypothesis was retained.

Chapter V will further discuss the results and significance of the study, as well as make recommendations for future research.

CHAPTER V.

DISCUSSION

The purpose of this study was to determine if online peer mentoring was associated with course completion among part-time adult learners in an online precollege program. With the enrollment numbers of adult learners expected to increase at a larger rate than that of traditionally-aged students (National Center for Education Statistics, 2016), it is more important than ever to consider the unique needs and experiences of the adult learner population. As online programs aimed at working adults continue to expand, low persistence rates of online learners remain a concern (Deschacht & Goeman, 2015; Levy, 2007; Park & Choi, 2009). Research shows that adult learners who are enrolled in a higher number of online courses are more likely to complete their coursework, highlighting that part-time adult learners may need additional support when taking online courses (Aragon & Johnson, 2008).

Prior research suggests that online adult learners persist at higher rates when they feel supported by family and/or organizations, when they recognize the relevance of their coursework to their lives, and when they feel satisfied with their coursework (Park & Choi, 2009). While part-time learners make up 64% of the adult learner population (Complete College America, 2022) and 40% of the overall higher education student population, student success and retention initiatives often overlook this population (Lumina Foundation, 2019). Part-time learners have been determined to be at greater risk of not persisting, with prior studies identifying part-time learners as being less likely to engage with and integrate into the college community (Lee, 2018). With sense of

belonging positively associated with student persistence (Kember et al., 2001; O'Keeffe, 2013), building a sense of community within the online classroom may be one approach to increasing persistence in part-time adult learners.

Preliminary research found that online peer mentoring may contribute to the creation of community within the online classroom (Fraenza & Rye, 2021). Additionally, online peer mentoring has been positively linked to student motivation and study behavior for online students (Hardt et al., 2022). With part-time adult learners less likely to be engaged, online peer mentoring may encourage engagement in the online classroom through community building and student motivation.

Findings of the Study

This study examined the effectiveness of online peer mentoring in Prep Academy, the University of Memphis' online precollege program for corporate partnership students. Aimed at part-time adult learners, Prep Academy allows corporate partnership students to earn admission to a degree program through a series of self-paced, competency-based units focused on college readiness, writing and communication skills, and career and professional development. In the summer of 2022, three CP1 corporate partnership students who were adult learners of color and previous Prep Academy completers were hired and trained to serve as online peer mentors in a fall 2022 section of Prep Academy's Unit 1. A fall 2022 section of Unit 1 without the presence of peer mentors was also taught. While both Unit 1 sections contained students from the same corporate partnership (CP1) and were taught online using the same curriculum and assignments, the peer mentor section embedded a series of discussion posts into the course which allowed for interactions between the peer mentors and the Prep Academy learners, with all

mentors and mentees employed by the same company. The total number of learners enrolled in the two CP1 sections of Unit 1 totaled 101, with 57 enrolled in the section without peer mentors (control) and 44 enrolled in the peer mentor section (treatment). The aim of the peer mentors in the treatment section was to connect socially with learners to share their Prep Academy experiences, as well as to provide insight into what balancing school and work has looked like for them. Additionally, the peer mentors sent encouraging messages, checked in with their mentees throughout the semester, and were also available to answer questions and refer students to academic resources as needed.

The study used chi-square analyses to test three hypotheses for significance using retrospective data from the fall 2022 semester. The first hypothesis asserted that participation in an online peer mentoring program is associated with course completion among part-time adult learners. Results of the chi-square analysis indicated that there was a significant association between online peer mentoring and course completion for part-time adult learners, enabling the null hypothesis to be rejected. The Cramer's V results also indicated a moderate association between these two variables, with the odds ratio calculation determining that students who participated in online peer mentoring were 2.35 times more likely to complete the course than students who did not participate in online peer mentoring. While the sample size tested was relatively small, the control section's completion rate (29.8%) aligned closely with the spring 2022 completion rate for all CP1 Prep Academy Unit 1 students (28.57%), further highlighting the importance of the treatment section's increased completion rate (50%). Overall, the analysis results support the argument that online peer mentoring is effective in increasing course completion for

part-time adult learners and may be pertinent when considering retention of this student population in the future.

In addition to examining the effect of online peer mentoring on part-time adult learners overall, the study also aimed to understand how online peer mentoring specifically affects adult learners of color, as well. With learners of color encompassing 42% of the postsecondary student population and that number expected to rise in the coming years (Lumina Foundation, 2019), understanding the needs of learners of color and how to support their retention is crucial. The second hypothesis in the study stated that participation in an online peer mentoring program is associated with course completion for part-time adult learners of color. Results from the chi-square analyses performed indicated that there was no significant association found between the two variables for part-time White adult learners; however, a significant association was found between online peer mentoring and course completion for part-time adult learners of color and the hypothesis was retained. The Cramer's V test also indicated significance, with a moderate association found between the two variables for part-time adult learners of color; additionally, the odds ratio calculation determined that part-time adult learners of color who participated in online peer mentoring were 3.88 times more likely to complete the course than part-time adult learners of color who did not participate in online peer mentoring. When compared to the spring 2022 completion rate for students of color enrolled in CP1 Unit 1 (27.35%), the fall 2022 control completion rate for students of color (25.6%) was similar to the spring 2022 rate, while the treatment completion rate for students of color (57.1%) showed increased course completion by comparison. With the analysis results showing that part-time adult learners of color who receive online peer

mentoring are more likely to complete their course, the implications of these results may be broadly applicable when considering retention for this population in the future.

In addition to examining how race/ethnicity interacted with the variables, the study also aimed to explore whether biological sex impacted outcomes. With women more likely to pursue online programs than men (Gardner et al., 2022) and with prior research finding that "female adult learners expect higher levels of task orientation and teacher support in online courses than male adult learners" (King-Spezzo, 20202, p. 7), it is important to consider how biological sex impacts engagement in the online classroom. Hypothesis three stated that participation in an online peer mentoring program is associated with course completion for male and female part-time adult learners. Results from the chi-square analyses showed there was not a significant association between online peer mentoring and course completion for part-time female adult learners; however, a significant association was found between online peer mentoring and completion for part-time male adult learners. Additionally, the Cramer's V test indicated a moderate association between the variables for part-time male adult learners; an odds ratio calculation also determined that part-time male adult learners who participated in online peer mentoring were 3.45 times more likely to complete the course than part-time male adult learners who did not participate in online peer mentoring. With no significant association found between online peer mentoring and course completion for part-time female adult learners, hypothesis three was rejected. However, there was a partial association found between the variables for part-time male adult learners, with male learners receiving online peer mentoring having a significantly higher completion rate (61.9%) than male learners who did not receive peer mentoring (32%). These results

suggest that male adult learners may benefit from targeted engagement in the online classroom.

Discussion

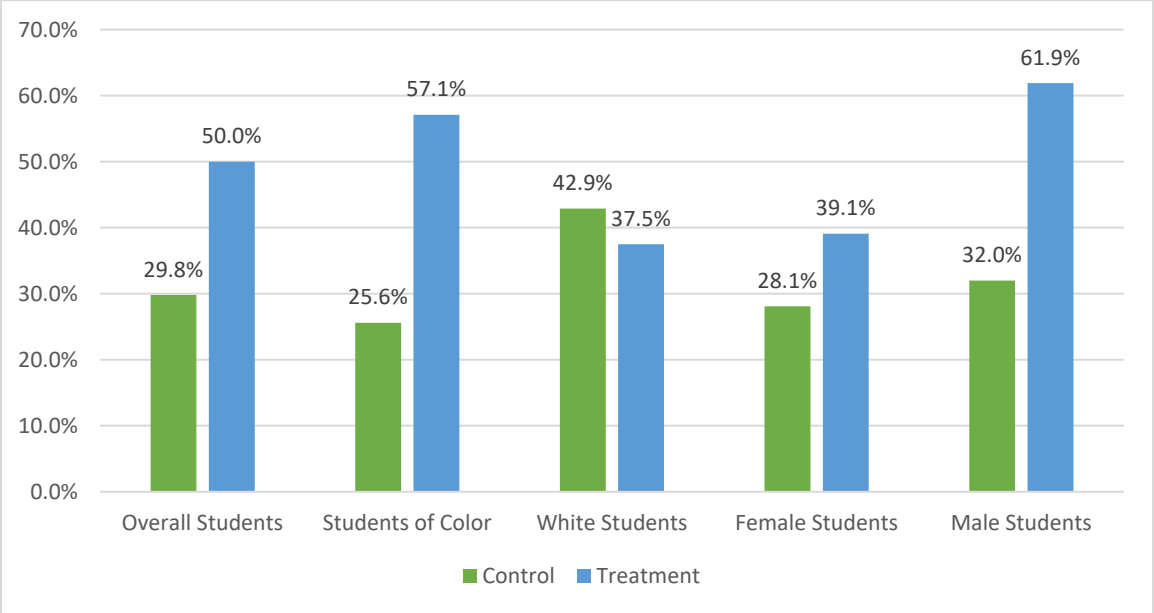
This study examined whether online peer mentoring was associated with course completion for adult learners in an online pre-college program for corporate partnership students at the University of Memphis. Based on the quantitative analysis results, the three major findings of this study were as follows:

1. Online peer mentoring is significantly associated with course completion for part-time adult learners.
2. Online peer mentoring is significantly associated with course completion for part-time adult learners of color.
3. Online peer mentoring is significantly associated with course completion for part-time male adult learners.

As shown in Figure 1, course completion rates were significantly higher for students receiving peer mentoring (treatment) than students not receiving peer mentoring (control) for overall students, students of color, and male students. However, there was no significant difference in completion rates for White students and female students. While the study did not eliminate rival hypotheses and therefore could not prove causation, it did determine there was a significant association between online peer mentoring and course completion for part-time adult learners, providing several key implications when considering institutional retention efforts for part-time adult learners in the online classroom.

Figure 1

Comparison of Completion Percentages among Fall 2022 CP1 Prep Academy Unit 1 Treatment and Control Groups



Low persistence rates of online learners have long been a concern for higher education institutions (Deschacht & Goeman, 2015; Levy, 2007; Park & Choi, 2009). However, when examining persistence in online learning, it is important to consider the varied needs of the online learning population. Compared to traditionally-aged students, adult learners, in particular, have additional needs that center around work and family commitments (Wuebker, 2013), with part-time learners at even greater risk of not persisting and being less likely to engage with the college community (Lee, 2018). Given that sense of belonging has been positively linked to student persistence (Kember et al., 2001; O'Keeffe, 2013), the results of this study suggest that online peer mentoring may be an effective approach in building community and engagement among part-time adult learners.

Previously, completion rates for CP1 Prep Academy students in Unit 1 have been low, with spring 2022 Unit 1 completion at 28.57%. While it is important to consider the unique structure of Prep Academy that offers students a no risk, open enrollment pathway to earning admission to a degree program—and therefore, there are no financial or academic repercussions to students if they choose to stop out—the Unit 1 completion rate is particularly low compared to the second and third units in the program (48.27% and 72.72%, respectively). With persistence increasing with each subsequent unit, it is therefore important to identify ways to increase completion rates in Unit 1.

The positive association between online peer mentoring and course completion for part-time adult learners in Prep Academy's CP1 Unit 1 suggests that peer mentor interactions both within and outside of the course shell may have increased engagement within the course among learners. Additionally, as peer mentors were not only previous Prep Academy completers but also employees of the same company where current CP1 students worked, learners were able to connect with their peer mentor on multiple levels as precollege students and CP1 employees. Peer mentors not only posted discussion board responses summarizing their experiences as Prep Academy students, but also discussed their current job roles and goals for the future, highlighting the ways they have learned to balance school with work and family commitments. This allowed mentees to hear how other students with similar job responsibilities have managed work and school responsibilities, with peer mentors modeling what the Prep Academy program is asking of currently enrolled students. With students who received online peer mentoring 2.35 times more likely to complete the course than students who did not receive peer

mentoring, the implementation of online peer mentoring programs aimed at part-time adult learners is well worth considering at institutions beyond just the precollege level.

Unit 1 completion rates for spring 2022 CP1 Prep Academy students were particularly low for students of color (27.35%). However, while students of color completed Unit 1 at lower rates than students overall, the reverse was true for the second and third Prep Academy units. During the spring 2022 semester, students of color completed Unit 2 at slightly higher rates (51.51%) than students overall (48.27%). Similarly, students of color completed Unit 3 at higher rates (81.81%) than students overall (72.72%). This suggests that students of color are in need of additional support in the first Prep Academy unit, and peer mentors who were students of color were selected with this aim in mind.

The positive association found between online peer mentoring and course completion for part-time adult learners of color was stronger than the association for all learners, with learners of color who participated in peer mentoring 3.88 times more likely to complete the course than learners of color who did not participate in peer mentoring. In addition to the benefits of peer mentorship that all students received, students of color were able to see themselves in their peer mentors; in addition to sharing pictures of themselves and their family, mentors also recorded short videos and participated in discussion board posts where they reflected on their identities as adult learners of color. The significantly higher completion rate for learners of color who received peer mentoring (57.1%) compared to learners of color who did not receive peer mentoring (25.6%) suggests that the part-time adult learners of color in Unit 1 particularly benefitted

from a peer mentorship program and should be considered in future retention efforts for this student population.

Finally, while the study found no significant association between online peer mentoring and course completion for part-time female adult learners, an association was found between the variables for part-time male adult learners. While prior research found that female students had higher rates of persistence when engagement and community-building were focal points in the online classroom (Müeller, 2008), the results of this study suggest the opposite. While female learners who received peer mentoring did complete at higher rates (39.1%) than female students who did not receive peer mentoring (28.1%), no significant association was found during analysis. However, positive associations were found for male learners, with male learners who received peer mentoring completing the course at significantly higher rates (61.9%) than male learners who did not receive peer mentoring (32%). It is important to note that of the three mentors hired, two were male adult learners and one was a female adult learner. While all Unit 1 students had access to the content uploaded by each mentor, mentees were assigned to a specific mentor's caseload based on the first letter of their last name, with no records kept of whether a mentee's biological sex matched that of their mentor. For this reason, it is difficult to determine whether a mentor's sex influenced a mentee's peer mentorship experience. However, the significant association found for part-time male adult learners suggests that male students stand to particularly benefit from community-building within the online classroom.

Overall, the results of the study suggest that the use of online peer mentoring can improve course outcomes for adult learners, but that learners of color and male learners

may especially benefit from an online peer mentoring program. Given the particular effectiveness with currently underperforming groups of learners, the results therefore may have long-term implications for addressing achievement gaps in online higher education.

Limitations

When considering the implications of the study's findings, there are limitations that should be considered. The study was limited by the data collected from one public research university in the southeastern United States and therefore its results may not be representative of all adult learners, especially those from minority serving institutions (MSIs) or community colleges. Additionally, the population of students included precollege adult learners who are earning admission to a degree program through coursework aimed at building college readiness skills; the results of the study may vary for adult learners at different stages of their postsecondary education.

The ages included in the study also provided limitations. Due to the small subject counts available, all CP1 Prep Academy students enrolled in Unit 1 were included in the study, which included students 19 or older who were eligible to participate in a corporate partnership tuition benefit program. By including corporate partnership students who are outside of the traditional age categorization of adult learners, the results of the study may not be broadly applicable to all adult learners.

Additionally, the study was limited by the instructor assignments of the course sections. While the course curriculum and all assignments in each Unit 1 section matched apart from the embedded peer mentor discussion posts, there were different instructors assigned to each section. Both instructors received the same training and had previously

taught Unit 1 in prior semesters, but the possible influence of an instructor's presence cannot be isolated and excluded within the study results.

Finally, the study was limited in its use of retrospective, quantitative data. Because of this, there was no access to the peer mentors' outreach tracking of their efforts, with no possible way to quantitatively measure whether increased effort by a peer mentor influenced mentee engagement with the course. Additionally, as each peer mentor had their own group of mentees assigned specifically to them, it was not possible to quantify the quality of mentorship each student had access to, possibly limiting the generalizability of the study's results.

Recommendations for Future Research

Due to the limitations of the study's sample size, it would be beneficial for future research to expand the number of subjects included by replicating the study using additional sections and courses. Within the Prep Academy precollege program at the University of Memphis, expanding the number of subjects involved to include sections from additional corporate partnerships across multiple semesters would allow for a broader view of the peer mentorship program's influence. Furthermore, expanding the study's reach by including additional institutions who offer similar online precollege coursework would provide an opportunity to generalize the results more so than the current study is able to do.

Additionally, the study's generalizability was limited in its focus on precollege adult learners who were not yet eligible for admission to a degree program. The study was further limited by the flexibility of the precollege program, with a no risk, open enrollment system enabling students to stop out with no academic or financial

repercussions. Future researchers could widen the scope of the study by focusing on admitted, degree-seeking adult learners taking traditional semester-length online courses. A traditional semester-long online course could still embed peer mentors within the course shell, but the data may be more generalizable in courses where students have the same start and end dates and move forward within the course at the same pace. This focus would also enable researchers to examine both part-time and full-time adult learners and consider how the number of credit hours influences the likelihood of course completion when participating in an online peer mentor program.

A further recommendation for future research is to utilize a mixed methods approach, incorporating both quantitative and qualitative data by utilizing surveys and focus groups to seek mentee feedback that considers their personal and academic motivations as well as their experiences with peer mentoring throughout the course. Moreover, it would be useful for future researchers to formally track the outreach efforts of mentors; measuring the number of outreach attempts and responses would provide additional quantitative data to analyze when examining the effects of online peer mentoring.

The study would also benefit from an expanded focus on adult learners of color. Due to the population sample size required to meet the Chi-square assumptions, it was not possible to subdivide the data by race/ethnicity of learners beyond the general adult learner of color identification. Having a larger sample size would enable researchers to look at the percentage breakdown of race/ethnicities of learners, allowing for consideration of learners' specific identities. Additionally, looking at how the

race/ethnicity of peer mentors interacts with that of their mentees would provide further insight into how adult learners of color experience peer mentorship.

Finally, future researchers should consider conducting an expanded examination of the ways that biological sex interacts with the study's variables. While the study determined there was a partial association between the variables and biological sex, with online peer mentoring significantly associated with course completion for part-time male adult learners, this research question was particularly limited by its small subject count. With a lack of consensus on how biological sex affects online student performance (Zhang et al, 2021; Tosuntaş et al., 2015; Aragon and Johnson, 2008; Levy, 2007; Yu, 2021), a larger sample size with a broader scope may add pertinent information to the conversation around biological sex and online learning.

Recommendations for Practice

With the continued enrollment growth of online learning, and the number of full-time and part-time adult learners expected to grow at a faster rate than traditionally-aged learners (Seaman, 2018; National Center for Education Statistics, 2016), the results from this study may be of practical interest to higher education institutions interested in adult learners' persistence. In particular, administrators, program managers, instructional designers, and faculty may find that the study provides applicable information that can be applied to program and course design as well as engagement and retention efforts targeted at online adult learners.

First, the focus on online adult learner retention should start with creating connection and engagement that is easily accessible and integrated into platforms that learners are already using. By embedding more interactions with peers into the course

shell itself, the opportunities for connection can be accessed without any additional logins or steps, which limits the time and effort required from learners to participate in engagement opportunities. Furthermore, by establishing connections within the course shell using peer mentors, learners can build a relationship within the online classroom that evolves in an organized manner as the course moves forward, with the peer mentor assisting in guiding them through the course over the semester. With peer mentor interactions happening within the course itself, learners are able to connect their academic content to their peer mentor interactions, enabling them to progress within the course while building a sense of community.

Additionally, online instructors should be provided with additional training that assists them in actively engaging learners within the online classroom. In particular, as the adult learner population continues to grow, it is vital that instructors receive training that helps them to recognize the unique needs of adult learners as well as an understanding of the common obstacles they may be up against. With this understanding, instructors can better design a course that engages learners as well as establish community within the online classroom. In addition to helping faculty reflect on how they can better engage with adult learners in the online classroom, instructors who will be working with peer mentors should be provided with training that shows them how they can best support the peer mentors in their course. By engaging faculty in the peer mentorship process, the peer mentors can receive support in their mentorship roles as well as have access to a course designed to be the most effective in peer mentorship development between mentors and mentees.

Furthermore, online courses using peer mentoring to engage adult learners should be designed to offer more opportunities for modeling peer mentor successes within the course. Peer mentors have the opportunity to not only guide and support mentees throughout a course, but also to serve as role models. By using a peer mentor who has successfully completed the course in a prior semester, adult learners are able to visualize a place for learners like themselves within the institution and can see what their next steps might look like. The online classroom should therefore be designed to maximize modeling opportunities, with discussion boards and other embedded interactions allowing peer mentors to participate and share their own experiences while also offering advice. Providing the opportunity for peer mentors to complete their own discussion posts, rather than simply responding to those created by the mentees, also allows them to not only model their experiences but to engage with their mentees on their level. Additionally, the peer mentors should be provided opportunities to share their experiences within the course content so that this modeling feels immersed throughout the course and not just limited to interactions solely in discussion boards or chat spaces. Prioritizing peer mentor content within the coursework itself helps to establish the peer mentors' stories, opinions, and experiences as important and encourages mentees to pay attention to what the mentors have to share.

Summary

This study aimed to assess the effect of online peer mentoring on course completion among part-time adult learners in a fully online precollege program. While limited by a small sample size from one institution's precollege program and unable to reach causal conclusions, the results did show an association between online peer

mentoring and course completion for part-time adult learners; additionally, there was also an association between the variables for part-time adult learners of color and part-time male adult learners.

Adult learners make up 38% of the postsecondary student population, with this population expected to increase in the coming years (Lumina Foundation, 2019). Adult learners who are employed full-time are more likely to enroll in online degree programs, as well as enroll part-time (Gardner et al., 2022). With 64% of adult learners enrolled in college part-time, it is important for higher education institutions to acknowledge and aim to address the barriers that this student population faces (Complete College America, 2022).

Research has found that sense of belonging within the college community is strongly linked to student persistence (Kember et al., 2001; O'Keeffe, 2013). However, part-time learners have been found to be less engaged on campus, with an increased risk of dropping out (Lee, 2018). This study's results show that engaging part-time adult learners through online peer mentoring can be effective in increasing course completion. Online peer mentoring not only has the potential to assist in building community among online learners, but the utilization of the online course shell to embed interactions and engagement opportunities offers the potential to bridge connections between learners with classmates as well as between learners and instructors. As the adult learner population—and especially the part-time adult learner population—continues to grow, it is vital that higher education institutions consider how these students will experience online learning in order to best meet their needs and increase their likelihood of persistence. While part-time adult learners enrolled in online coursework may be limited

in their ability to develop community on the college campus, there are ways that institutions can encourage a sense of belonging through engagement with the online classroom that must not be overlooked.

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