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Exploring the Effects of Pacing in Community College Courses

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EXPLORING THE EFFECTS OF PACING IN COMMUNITY COLLEGE COURSES

by

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B.S. May 2002, Radford University

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ABSTRACT

EXPLORING THE EFFECTS OF PACING IN COMMUNITY COLLEGE COURSES

Robin Shepherd
Old Dominion University, 2018
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For-profit colleges are threatening community college enrollments by recruiting low-income and minority students with the appeal of quick degree and certificate program completion rates. To remain competitive, community colleges are creating guided pathways for student success. A guided pathway is a clear road map to certificate or degree completion. Community colleges that offer guided pathways challenge students to choose an academic program in their first semester and no later than their second semester. Once students choose their academic program they begin taking specific classes in pursuit of certificate and degree completion, which offer students flexibility in format (face-to-face, hybrid, and distance learning sections) and flexibility in pacing (self-paced vs. teacher-paced). This study investigated whether differences exist in course completion rates, preferences in pacing, and performance between non-traditional students and traditional students in either a teacher-paced or self-paced instructional environment at the community college level. Achievement and course completion outcomes, similar outcomes in a guided pathway, were two dependent variables in this study. Two covariates for this study were Pell Grant eligibility and grade point average (GPA). Also of interest was student preference in navigating either a teacher-paced or self-paced community college course.

This study found performance differences along the following participant attributes: age, pacing environment, GPA and grant-funding status. Student preferences did differ between non-traditional students and traditional students completing a self-paced course and a teacher-paced course. Traditional students in a self-paced course were balanced initially in their thoughts toward a self-paced course, but by the end of the semester the traditional students preferred the self-paced course. The majority of non-traditional students preferred the self-paced course from the beginning of the semester and through the end of the semester. Performance also differed between students when considering grade point average (GPA) and Pell Grant eligibility. Student age and course completion rates were also tracked, but were shown to have no significance to student performance in this study.

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I dedicate my dissertation to my biggest cheerleaders:

My parents who provided me with the best education possible.

My husband, who for the majority of the last 17 years, has only known me as a student.

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CHAPTER 1

INTRODUCTION

For-profit colleges have become a popular choice in the past decade with a postsecondary growth rate of 42 percent (Deming, Yuchtman, Abulafi, Goldin, & Katz, 2016). For-profit colleges are similar to community colleges, both offering certificate and degree programs. Students sometimes find for-profit colleges attractive because the for-profit colleges offer an accelerated path to degree completion. While for-profit colleges tend to be more expensive than community colleges, for-profit colleges offer what students want: flexible scheduling, focused technical programs, high-quality student (personal phone calls, coaching, and emails), and a four-year degree.

While for-profit colleges are growing, community colleges are feeling the pressure of decreased student enrollment and completion rates (National Center for Educational Statistics, 2016). To keep up with the competition from for-profit colleges and changes in federal financial aid, community colleges are restructuring their programs into common core curriculums with guided pathways, which has restricted the community college's ability to offer flexibility, self-service, and convenience. Community colleges are recognizing that students struggle to complete a degree in two years because they are juggling employment and household responsibilities leading to part-time enrollment (National Center for Educational Statistics, 2016). The community college student, often economically disadvantaged and least prepared for college, needs clear guidance and structure (Hulbert, 2014). A guided pathway aims to guide students through the maze of courses, prevent enrollment in multiple programs (more than four), and provide more meaningful support services that lead to decreased student attrition rates. In a guided pathway, community college students may be successful by choosing a program and developing a plan early. These pathways are structured and use curriculum mapping to align the

student's educational and career goals. An additional benefit of the guided pathway, student guidance and support can be obtained from within each program, which helps to reduce the load on generalized academic advising. Decision-making on the part of the student is reduced due to less course options in his or her program.

Community colleges offer an open-door admission policy, less expensive educational alternative, and familial flexibility; an attractive choice for a diverse student population (Schudde & Goldrick-Rab, 2015). Students who choose to attend community colleges are categorized into one of two groups: traditional students (recent high school graduates 18 to 21 years old) or non-traditional students (adult learners returning to school later in life who are 22 years old or older). Tradition within the community college system tends to influence the way we reach and educate these two very diverse populations. Community colleges currently offer courses using a semester calendar: fall, spring, and summer. Courses are available in varying formats from weekend courses to full 16-week sessions.

Both formal and informal learning environments are attractive course formats. Educators refer to formal learning environments as teacher-led face-to-face courses. In contrast, educators refer to informal learning environments as being internally self-motivated and taking place outside of a formal classroom (Koran, Koran, Foster, & Dierking, 1988). This study focuses on informal distance learning environments that offer both self-paced and teacher-paced settings. Many studies report there is no difference in learning between formal and informal learning environments (Cassens, 2010; Mills, Knezek, & Khaddage, 2014; Straub, 2009), but there may be differences in learning performance between traditional students and non-traditional students in a community college setting (DesLauriers, Hohn, & Clark, 1980) enrolled in these formats. Little research is available that discusses learning performance or outcomes in a community

college setting between traditional students and non-traditional students who share the same classroom environments. The lack of research is especially evident when considering the potential effects of pacing on achievement and completion rates among traditional students and non-traditional students in a community college setting.

Definition of Terms

The definition of the terms used in the context of the study are below.

Formal Learning Environment. A classroom space where students meet face-to-face, with equally balanced symmetrical interaction (lecture or discussion) between both instructors and students (Holden & Westfall, 2006).

Informal Learning Environment. An online learning community with a learning management system (e.g. Blackboard, Moodle, Desire2Learn) that students access as their schedules permit, with asymmetrical interaction (one-way communication) with content, and symmetrical interaction (email communication, discussion boards, audio/video chat) with instructors, and other students (Holden & Westfall, 2006).

Instructional pacing. The rate (self-paced or teacher-paced) at which instruction occurs.

Self-Paced. An asynchronous environment where students set the pace and the instructor provides benchmarks for progress and achievement (Rhode, 2009). Collaborative activities are a challenge in this environment as learners are constantly progressing through the course at varying times relative to peer learners (Anderson, Annand, & Wark, 2005).

Teacher-Paced. A teacher dependent environment with clear-cut course parameters where students engage in course content at specified times (Rhode, 2009). The teacher sets the pace and the pace may be determined by content difficulty, teacher expertise, student ability, and college calendars (Allday & Allday, 2011).

Non-traditional Students. Students 22 years old or older sharing common characteristics such as elevated educational motivation, enjoyment, achievement, and completion rates that are considered discrete from traditional students (Eastmond, 1998; Remedios & Richardson, 2013). Non-traditional students are different from traditional students in that they usually work either full-time or part-time while enrolled in classes (Katz et al., 1999), are highly motivated to be successful (Huang, 2002), and bring life experiences to the classroom (Merriam & Caffarella, 1991).

Traditional Students. Students ranging in age from 18 to 21 years old (Kasworm, 1990; Katz et al., 1999). Traditional students may work part-time while enrolled in classes, but very few work full-time (U.S. Department of Commerce, 2015). Traditional students' living situations vary between living at home with parents and living independently. These students are often motivated by a goal to transfer to a four-year college or university (National Center for Educational Statistics, 2016).

Achievement. A measurement of student performance assessed by an end of course multiple choice final exam.

Completion Rates. A measurement of finality (i.e. assignment, unit test, or final course grade), assessed by the number of students who complete the measurement with a transferable grade of C or better.

Grade Point Average (GPA). A measurement of course letter grades calculated on a scale from 0 to 4.0. Overall student GPA for this research study was gathered at the beginning of the semester. Students new to the community college did not have a GPA.

Pell Grant Eligibility. A measurement of financial need. A Pell Grant is a needs-based grant available to low-income students at the community college who have not earned a Bachelor's degree or a professional degree.

Literature Review

Prior research regarding pacing of instruction in community college settings is sparse, and that which is available could be considered dated at 35 years old (Brown, 1983). Within the pacing context, most studies focus on four-year college and university classes, or K-12 settings. DesLauriers, Hohn, and Clark (1980), Adelman (2005), and Hagedorn (2009) suggest that community college students differ from a four-year college or university student population along the basis of five key traits that make community college learners different: age, socioeconomic status, the need for steady employment, family obligations, and time available to focus on coursework. These traits may influence achievement and completion rates of community college students enrolled in both formal and informal learning environments. Informal learning environments are a popular choice due to the flexibility of the learning environment and will be the focus of this study. The literature review includes two areas focusing on the student and two areas focusing on theory: (a) non-traditional students, (b) traditional students, (c) early instructional theory to include mastery learning, personalized system of instruction, and a model of school learning and (d) instructional pacing.

A Comparison of Non-Traditional to Traditional College Students

Non-traditional students have many options when returning to school. Among these options are public two-year community colleges, four-year non-profit public and private colleges and universities, private for-profit colleges and universities, and vocational schools. While the non-traditional student chooses the best option to meet his or her needs, the college also should

consider the learner's schedule and the need for flexible pacing options and distance learning formats when guiding students. Distance learning courses with flexible pacing options may offer the convenience and flexibility the non-traditional student needs while juggling work, family, and school. The non-traditional student has often been absent from the classroom for many years and may have lost confidence in their ability to succeed when returning to school (Peterson & Pellegrini, 2006). This absence and loss of confidence make the non-traditional student different than their traditional counterpart, who is likely a recent high school graduate (Sutton, 2016). The non-traditional student has obtained life and professional skills, but often views note-taking, assignment completion, and passing tests as a new challenge (O'Keefe, 1993).

Community colleges compete mostly with other commutable private for-profit colleges when recruiting non-traditional students (Deming & Goldin, 2012). Non-traditional students often choose to commute to a private for-profit college and finish their degree quicker, but at a higher monetary price (Deming & Goldin, 2012). Community colleges offer similar services in comparison to private for-profit colleges but at a reasonable price. Historically, community colleges with open door admission policies serve diverse segments of society, such as non-traditional students (Schudde & Goldrick-Rab, 2014; Vaughn, 1999). An open door admission policy means that community college educational access is noncompetitive whereby the only requirement for admission is an earned high school diploma or home-school verification, or general education diploma (GED). Once enrolled, the student completes placement tests to determine if remedial coursework will be necessary before registering for college level courses. The non-traditional student enrolls in a community college for various reasons such as improving his or her education, obtaining an advanced degree, earning more money, or meeting new job requirements (Bradburn & Hurst, 2001). Researchers have found that confident non-traditional

students who set aside time to study possess cognitive abilities that are the same or even better than their traditional college classmates (Astin, 1993) when measuring intellectual growth and problem-solving (Graham & Gisi, 2000). The more time non-traditional students devote to a course the greater the learning outcome, similar to traditional students (Kuh, Pace, & Vesper 1997).

Traditional Students

The traditional student, with cognitive abilities similar to the non-traditional student, also has many options when choosing a path to higher education. Traditional students who enroll in a community college vary in age and their reasons for enrolling. The traditional student can be categorized as under 22 years of age and, generally dependent on their parents (40% were dependent on their parents in 2004) (Horn & Neville, 2006). The majority of traditional students enroll in community college with a goal of transferring to a 4-year college or university, receiving an Associate's degree, seeking job skills, and for personal interest (Provasnik & Planty, 2008).

Community College Student Demographics

According to the American Association of Community Colleges (2016), ethnicity, age, and student population in community colleges vary (see Table 1). Women are more likely to attend a community college in the United States compared to men (American Association of Community Colleges, 2016). Socioeconomic status (SES) also plays an important role in directing students into the community college system (Provasnik & Planty, 2008).

Table 1.

<i>Community College Student Demographics</i>	
Demographics	
Ethnicity	White (49%)
	Hispanic (22%)
	Black (14%)
	Asian/Pacific Islander (6%)
	Native American (1%)
	Two or More Races (3%)
	Other/Unknown (4%)
	Nonresident Alien (1%)
Age	Average Age (28)
	Students 22 – 39 (49%)
	Students 21 and Under (37%)
	Students 40 and Older (14%)
Socioeconomic Status (SES)	High SES Families (17%)
	Low SES Families (44%)
Population	Single Parents (17%)
	Non-US citizens (7%)
	Veterans (4%)
	Students with Disabilities (12%)
	First Generation Students (36%)

According to the American Association of Community Colleges (2016) during the 2013-2014 school year, 77% of students received federal aid in the form of Pell Grants, federal work study grants, or federal supplemental educational opportunity grants. Factors that can be controlled are grade point average (GPA), standardized test scores, and placement into advanced high school courses. GPA is calculated on a 4.0 scale at the community college level. In Virginia, a 4.0 is a perfect GPA and a 2.0 is the lowest GPA acceptable to graduate with an associate degree, certificate or career studies certificate. Standardized test scores (SAT or ACT) are used as an indicator of college readiness, but not a deterrent for admission. Once enrolled at the community college, students complete entrance exams to determine whether a student will need to complete remedial courses (math and English).

Pell Grant Eligibility

Both traditional and non-traditional students are eligible to receive Pell Grant eligibility, which are part of the federal student aid program and aim to increase access to postsecondary education for low income students (U.S. Department of Education, 2015). Community college students receive more federal funds than four-year students (Katsinas, Hagedorn, Mensel, & Friedel, 2011). Pell Grant eligible recipients' exhibit characteristics that may be considered detrimental to college success: delayed community college enrollment post high school, part-time or full-time employment alongside coursework, and family responsibilities (Wei, Horn, & Weko, 2009). These students are often pursuing a high demand education at a low cost, and availability of the Pell Grant is the determining factor of whether or not these students pursue a postsecondary education (Mendoza, Mendez, & Malcolm, 2009). Pell Grant eligibility allows researchers' access to a unique community college population.

Grade Point Average (GPA)

Grade Point Average (GPA) is considered a measurement of academic achievement and a student's motivation to learn (Strenze, 2007). Both traditional and non-traditional students earn a grade point average after completing their first for-credit course in college (not a remediation course). GPA is a reliable assessment tool for future academic success and determines a student's track in a guided pathway. For example a student who is following a guided pathway to Associate of Applied Science in Nursing with a GPA of 2.0 will be redirected to another medical program with lowered demand. This redirection occurs along the pathway to promote student success. When considering GPA, obtaining data from both a self-paced environment and teacher-paced environment could lead to very different performance levels depending on the age of the student. Traditional students could be disciplined in their preparation for college, or suffer with the independence that college can afford (i.e., no parental contact from teachers). Nontraditional students may be motivated to succeed in college, or hindered by family responsibilities and work obligations.

Theoretical Foundations

This study is grounded in early instructional theory, specifically, The Carroll Model of School Learning (Carroll, 1963). To first understand this model, Mastery Learning and Personalized System of Instruction (PSI) should be explored.

Mastery Learning. Mastery learning did not gain popularity until the 1960s (Kulik, 1983) with the work of John Carroll. John Carroll (1963) proposed that all students could learn, or master subject matter, if the right amount of time is allotted for optimal learning gains to occur. One theory that blossomed from mastery learning is Bloom's Learning for Mastery (LFM). LFM cites time allowed for instruction (Block, 1980; Bloom, 1968; Carroll, 1963) as a

criterion and also of importance is the quality of both instruction and help received (Block & Burns 1976; Guskey & Pigott, 1988; Kulik, Kulik, & Bangert-Drowns, 1990; Lysakowski & Wallberg, 1982). In mastery learning students are introduced to a unit of instruction and complete a formative assessment. If students achieve mastery on the formative assessment, they complete an enrichment activity and move on to the next unit. If students do not achieve mastery on the formative assessment, they receive remedial instruction and another formative assessment before proceeding to the next unit of instruction. The mastery learning approach is teacher-paced similar to formal learning environments but conducive to informal learning environments. Specifically, Bloom (1971) claims that time set aside for learning should be flexible as a ratio of appropriate instruction and ample time to achieve optimal learning gains. The challenge is determining how much time is enough time to promote achievement, motivation, and perseverance in this teacher-paced informal learning environment.

While prominent in elementary and secondary school classrooms (Block & Burns, 1976), college and university classrooms are also conducive to a mastery learning environment. Mastery learning programs have shown an improvement in test scores in the college setting (Guskey & Gates, 1986; Kulik & Kulik, 1986; Willett, Yamashita, & Anderson, 1983).

Kulik, Kulik, and Bangert-Drowns (1990) conducted a meta-analysis of 108 studies' findings and concluded that weaker students do better in a mastery learning environment, course satisfaction increases, and time on task is higher. However, self-paced mastery learning programs in college settings may lead to decreased course completion rates. Research trends may have changed over the last 25 years with advances in technology. Students are enrolling in distance learning courses at an increasing rate of over 9% each year (Cavanaugh & Jacquemin, 2015) with at least 6.7 million students enrolled in at least one distance learning course (Allen &

Seaman, 2013). With this shift, may come a change in attitudes. Some students enrolled in distance learning courses at the college level may prefer a structured pace of learning, while other students may prefer to work ahead of the teacher's pace; or at their own pace (Koper, 2015). Colleges and universities want to meet the changing pacing preferences (Twigg, 2003) of their students. Institutions of higher education are exploring ways to develop flexible self-paced models, similar to personalized system of instruction, providing students the ability to customize their learning experience (Dron, 2007; Kahn, 2007).

Personalized System of Instruction. A second theory that blossomed from the premise of mastery learning is Fred Keller's Personalized System of Instruction (PSI). The PSI approach is student-paced (Tatum & Lenel, 2012). The student works his or her way through the text-based subject matter (Hattie, 2009) followed by completing an assessment to demonstrate mastery (Bloom, 1968; Keller, 1968). The student must show mastery of each unit of instruction before moving to the next unit of instruction. The teacher is considered a guide or a coach motivating students to complete instruction without specific deadlines. A high level of skill is needed to master the coursework (Naumes, 1977); retention of material is greater (McGaw, 1975) and motivation to continue in courses of this kind (self-paced) increases (Taber, 1974). Additionally, Kulik, Kulik, and Cohen (1980) conducted a meta-analysis of college classes that were self-paced computer-based (74 studies relating to PSI) and found that students completed self-paced computer-based instruction quicker than conventional teaching approaches receiving higher grades and reporting higher satisfaction rates than students in teacher-paced courses over a 25 year period with PSI having the highest effect on student achievement. These studies align with PSI because they use programmed instruction that aligned with self-paced student mastery. Other PSI researchers noted that students find the autonomy of PSI courses enjoyable

(Fernald, Chiseri, Lawson, Scroggs, & Riddell, 1975). The classroom environment and technology options have changed since the 1970s and 1980s. In recent years, PSI has become less common due to various reasons. For example, some instructors do not want to transition from a teacher-centered approach (sage on the stage) to a student-centered approach (Keller, 1968). Lecture-based teaching was popular in the 1970s and 1980s and teachers resisted change (Buskist, Cush, & DeGrandpre, 1991; Sherman, 1992). Another reason PSI has become less common is due to the time required to develop a PSI course (Cracolice & Roth, 1996; Lloyd & Lloyd, 1986).

The Carroll Model of School Learning

The Carroll Model of School Learning dates back to 1963 and explores variations in school learning based on time and achievement (Carroll, 1989). Carroll's Model has influenced educational psychologists and instructional designers for more than 50 years (Block & Anderson, 1975; Bloom, 1971; Clark, 1987; Cooley & Lohnes, 1976; McIlrath & Huitt, 1995; Slavin, 2006). As shown in Figure 1, the basis of the Carroll Model of School Learning is that learning is a function of time (Carroll, 1963). Learning occurs when the time needed to acquire knowledge or a skill is in parity with time on task. These variables are dependent on aptitude, opportunity to learn, and perseverance (Carroll, 1963). Two other variables in Carroll's (1963) Model are related to achievement: quality of instruction and ability to understand instruction.

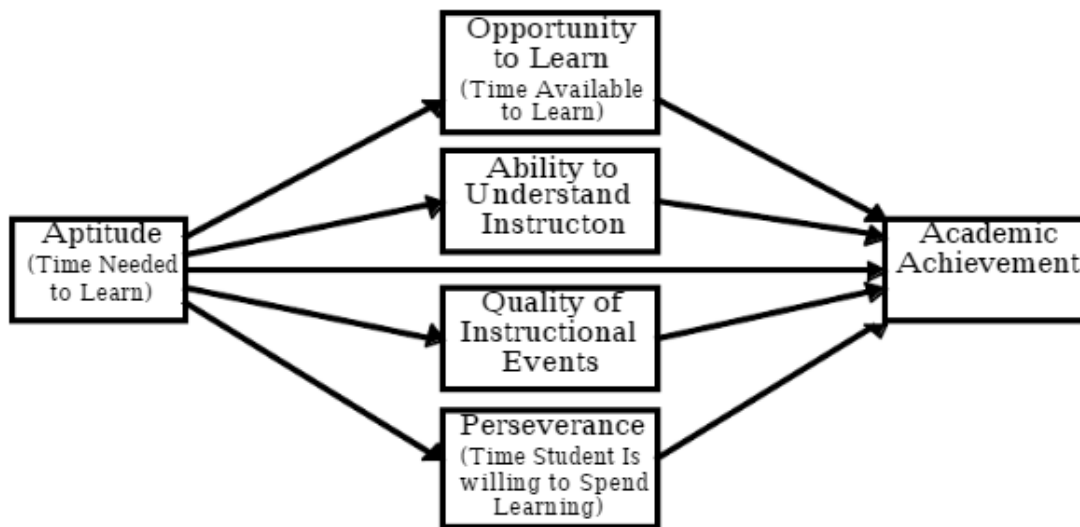


Figure 1. This figure illustrates Carroll's (1963, 1989) Model of School Learning (Reeves, n.d.).

Carroll's (1963) Model of School Learning, a synthesis of learning theory research, can be applied to any subject or learning task. In terms of time, aptitude refers to the student's general ability to learn when instruction and student motivation are optimal (Carroll, 1963; Carroll 1989). Aptitude relates to the time each student needs to learn a task, where opportunity to learn is the time available to learn a task (Carroll, 1963). Perseverance can be tied to motivation and in terms of time is the amount of time a student is willing to spend on the learning task (Carroll, 1963; Carroll 1989). Students with similar abilities may achieve at the same learning task in the same amount of time. Students' with increased motivation regarding effort will achieve even more. If a student does not have the time or take additional time to learn, under the model, perseverance will have little impact on learning achievement (Carroll, 1989). Regarding achievement, ability to understand instruction includes both the learning task and a student's language comprehension (Carroll & Spearritt, 1967). The student should have enough

time to determine the learning task expectation and plan a path to successful comprehension (Carroll, 1989). If necessary and the course schedule allows, learning time can be increased until task mastery is achieved. Time also can be increased if the quality of instruction is not optimal. Students should be able to identify what is to be learned, have access to learning materials (i.e. textbook), and be able to identify the steps to learning task completion (Carroll, 1989). Time is an important factor in the Carroll Model of School Learning as time is the strategy that leads to completion. Achievement is considered a function of time actually spent learning (opportunity, perseverance, and aptitude) and time needed for learning (quality of instruction and ability to understand instruction) (Carroll, 1963; Carroll 1989).

$$\text{Degree of learning} = f \left(\frac{\text{time actually spent}}{\text{time needed}} \right)$$

Figure 2. This figure illustrates Carroll's (1963, 1989) Degree of Learning Variable.

Time has been referred to as an empty concept (Shulman, 1986). That is to say that instructional time, in a general sense, does not lead to learning achievement on its own. Rather certain researchers argue that it is learner engagement (Gage, 1978) in terms of time on task (Karweit, 1983) is the critical factor for achievement, not just exposure time. In other words, learning requires time (Carroll, 1989), but the learner needs to be actively engaged in the process. Time is also critical when examining instructional pacing.

Instructional Pacing

Distance learning courses in a guided pathway program offer students the chance to learn from anywhere at their own pace or the pace of their professor. Defining ideal instructional pacing for a distance learning environment is complicated by conflicting research. Some researchers suggest that learning gains are increased in self-paced environments when learners are in control of their learning (Betrancourt, 2005; Bloom, 1968; Burton, Moore, Magliaro, 2004; Campanizzi, 1978; Carroll, 1963; Fernald et al., 1975; Gray, 1987; Keller, 1974; Kinzie, Sullivan, & Berdel, 1988; Kulik et al., 1980; Mayer, 2005; Merrill, 1983; Newkirk, 1973; Reigeluth & Stein, 1983; van Merriënboer & Kester, 2005), while other researchers suggest that learning gains decrease in teacher-paced environments when learners are not in control (Chall, 2000; Fisher, Blackwell, Garcia, & Greene, 1975; Fry, 1972; Klahr & Nigram, 2004; Kulik et al., 1990; McKeough, Lupart, & Mariani, 1995; Moreno, 2004; Morrison, Ross, & Baldwin, 1992; Schauble, 1990; Singley & Anderson, 1989; Steinberg, 1977; Wooyong & Reiser, 2000). To further complicate matters, researchers have also found no differences between self-paced and teacher-paced environments in terms of learning outcomes (Arnone & Graboski, 1992; Balson, Manning, Ebner, & Brooks, 1985; Carrier, Davidson, Higson, & Williams, 1984; Kinzie & Sullivan, 1989; Klein & Keller, 1990). These mixed findings may be due to an uncontrollable factor such as learner age (Hannafin, 1984), or uncontrollable factors such as motivation (Kinzie et al., 1988) or ability (Klein & Keller, 1990). Another confounding factor is the inconsistent results of the research studies. Older research studies focusing on pacing have inconsistent results (Niemic, Sikorski, & Walberg, 1996; Reeves, 1993; Stiller, Petzold, Zinnbauer, 2011; Williams, 1996) and older programming modalities (Williams, 1996).

This study focuses on distance learning community college courses with two varying paces and two varying categories of students: self-paced and teacher-paced; traditional students and non-traditional students.

Self-paced instruction. Self-paced instruction can be defined as instruction that is flexible and independent, centering on the driving force of learner motivation. Self-paced instruction (objectives are set by the instructor for all students) is different from self-directed instruction (objectives are set by the instructor and vary for each student) (DesLauriers, Hohn, & Clark, 1980). Self-paced learning works well for some students, but not for others (Felder & Brent, 1996). Researchers have found that self-paced instruction allows students to spend the time needed to comprehend information (Stiller, Petzold, & Zinnbauer, 2011; Tabbers, 2002). Students in control of course pacing may have an increased motivation to learn (Stiller, Petzold, & Zinnbauer, 2011) leading to greater learning achievement as measured by test scores (Schnotz, Fries, & Horz, 2009). Older literature using interactive computer instructions resulted in the same findings (Keller, 1983, Milheim & Martin, 1991; Steinberg, 1989), but researchers in the 1970s found that self-paced learning that spanned more than one semester for a single course was detrimental to student degree completion due to procrastination (Roueche & Snow, 1978). More recent research studies found that more instructional time is not always advantageous and may decrease performance (Canelos et al., 1989; Stiller et al., 2009).

Teacher-paced instruction. Teacher-paced instruction can be defined as instruction that is firm, dependent and centered on instructor's conception and observation of learner progression through instruction. The teacher often takes center stage and guides students through regularly scheduled content and due dates throughout the semester. The time to learn relevant information is limited by the due dates set in place for the course (Hasler, Kersten, & Sweller, 2007; Mayer

& Chandler, 2001; Moreno, 2007; Schwan & Riempp, 2004; Stiller et al., 2011). Within a limited time-frame, motivation may increase (Stiller et al., 2011) and procrastination decrease (Hess, 1971; Sherman, 1972) as long as the presentation of instructional materials does not in itself hinder learning due to poor design. At the community college level, DesLauriers et al. (1980) found that community college students prefer to learn with an instructor. These findings may have changed in the last 26 years due to increased availability of distance learning, though additional research studies on learning setting preference are rare after approximately 1980.

Research findings vary among which pacing strategy is best to increase achievement, attitudes, and perseverance between traditional students and non-traditional students in a community college setting. Some researchers cite age (DesLauriers et al., 1980; Smith, 2000) and learning experience (Brillhart, 1981; Canfield, 1980) as a major predictor of student pacing when enrolling and continuing in a teacher-paced or self-paced course. DesLauriers et al., (1980) suggested that older students can function independently without an instructor, but prefer a teacher-paced environment. This study's result further inform the discussions regarding the design of community college courses for traditional students and non-traditional students.

Purpose of the Study

The purpose of the study is to investigate whether a significant difference exists between non-traditional students and traditional students in either a teacher-paced or self-paced instructional environment in terms of two dependent variables: achievement and course completion outcomes. Also under consideration is whether a significant difference exists between student preference in completing either a self-paced course or teacher-paced course in a community college setting.

Research Questions

1. In a self-paced instructional environment, do non-traditional students receive a higher midterm and final grade compared with traditional students who receive self-paced instruction?
2. In a teacher-paced instructional environment, do non-traditional students receive a higher midterm and final grade compared with traditional students who receive teacher-paced instruction?
3. What is the difference, if any, in course completion rates between non-traditional students and traditional students enrolled in either a teacher-paced instructional environment or a self-paced instructional environment?
4. What is the difference, if any, between non-traditional students and traditional students' preferences in completing either a self-paced course or a teacher-paced course?
5. What is the difference in performance, if any, between students enrolled in a self-paced or teacher-paced instructional environment when considering current grade point average and Pell Grant funding eligibility?

CHAPTER 2

METHODS

This study employs a quasi-experimental research design examining the relationship between pacing, achievement, course completion rates, federal financial aid funding (Pell Grant), grade point average (GPA), and student preferences among non-traditional students and traditional students enrolled in a distance learning course at a community college in the Mid-Atlantic region of the United States. In this quasi-experimental study, a multiple time-series design occurs. This section describes the participants, research design, treatments, instructional materials, data collection instruments, and the procedures for this study.

Participants

Participants, between the ages of 18 and 65, included non-traditional and traditional students enrolled in six distance learning courses at a community college in the mid-Atlantic region of the United States. The courses focused on varying topics: public speaking, drug use and abuse, human sexuality, medical terminology, first aid, and nutrition. Each course in this research study consisted of two sections, one self-paced and one teacher-paced. Assignment of students to either a self-paced or teacher-paced course occurred depending on the section of the course the student enrolled. The majority of the students in this research study are pursuing either a certificate program or are completing the courses as part of a two-year Associate's degree. The courses were offered over two semesters (spring and summer). Five course sections were offered during the 16-week spring semester January 9 – May 8, 2017. Eight course sections were offered during the 10-week summer semester May 22 – August 2, 2017. Two of the courses, four sections (two spring and two summer), were instructed by the researcher. 115 students participated in the spring semester research study and 171 students participated in the summer

semester research study (N = 286). 187 of research study participants were nontraditional students (Spring Semester: 71, Summer Semester: 116) and 99 were traditional students (Spring Semester: 44, Summer Semester: 55). All courses were offered in an asynchronous format. Participant distribution in this research study can be found in Table 2.

Table 2.

Participant Distribution per Course and Section

Course Number	Course Name	Section	Students	Total Students
1 HLT 143	Medical Terminology	Teacher-Paced	Traditional: 11 Non-Traditional: 17	28
		Self-Paced	Traditional: 9 Non-Traditional: 24	33
2 HLT 230	Principles of Nutrition/Human Development	Teacher-Paced	Traditional: 9 Non-Traditional: 7	16
		Self-Paced	Traditional: 2 Non-Traditional: 11	13
3 CST 110	Intro to Speech Communication	Teacher-Paced	Traditional: 8 Non-Traditional: 14	22
		Teacher-Paced	Traditional: 4 Non-Traditional: 14	18
		Self-Paced	Traditional: 6 Non-Traditional: 2	8
4 HLT 121	Drug Use and Abuse	Teacher-Paced	Traditional: 3 Non-Traditional: 24	27
		Self-Paced	Traditional: 7 Non-Traditional: 25	32
5 HLT 200	Human Sexuality	Teacher-Paced	Traditional: 6 Non-Traditional: 5	11

		Self-Paced	Traditional: 9 Non-Traditional: 8	17
6 HLT 106	First Aid and Safety	Teacher-Paced	Traditional: 12 Non-Traditional: 22	34
		Self-Paced	Traditional: 13 Non-Traditional: 14	27
		Total Students	Teacher-Paced Self-Paced	156 130

Research Design

The study employed a quasi-experimental research design using a multiple-time series design. Measurements were taken periodically from 6 community college courses consisting of 12 course sections. The independent variable was age (nontraditional students and traditional students). The dependent variables were midterm and final grades and course completion rates. Two covariates were Pell Grant eligibility and GPA.

Quantitative Data. The collection of quantitative data occurred using midterm letter grades (included all assignments up to and including midterm) and final letter grades (included all assignments for the entire semester) to assess achievement and completion rates. Other factors of importance were federal financial aid funding in the form of Pell Grants and student grade point average (GPA). Comparing midterm and final exam test scores throughout the semester determined if a statistically significant difference in achievement rates occurred between non-traditional students and traditional students participating in either a teacher-paced or self-paced course. The comparison of course completion rates occurred at the mid-term and final grading period to determine if statistically significant differences were present between non-traditional

students and traditional students enrolled in either a teacher-paced instructional environment or a self-paced instructional environment.

Qualitative Data. The collection of qualitative data occurred through the distribution of preference surveys and an invitation to participate in an interview. The pacing preferences survey used open-ended questions and was administered at the midterm and end of the semester. Three colleagues and two students (one traditional student and one non-traditional student) not in the research study reviewed the pacing survey prior to administration. Students also were invited to participate in an interview at the end of the semester to further validate student preferences in participating in either a teacher-paced or self-paced course. The interview questions were also reviewed by three colleagues and two students (one traditional student and one non-traditional student) not in the research study prior to administration. The interview took place using Blackboard Collaborate and participants responded to eight initial questions. The questions were setup in categories by engagement, exploration, and exit (Guidelines for Conducting a Focus Group, 2005). Transcriptions of the interviews occurred. As such, interview questions were reviewed for the identification of a thematic analysis of student preferences. Using a phenomenological tradition, the researcher explored the classroom pacing environment through the eyes of community college students searching for a common theme among traditional students and non-traditional students. According to Hays and Singh (2012), the use of a phenomenological tradition can describe a phenomenon, such as if students experiencing either a self-paced or teacher-paced environment benefitted academically based on their perceptions.

Treatments

Online Instruction. Students participating in this study receive the same instruction within the specific course whether completing the teacher-paced section of a course, or the self-

paced section of a course. In the teacher-paced section of the course, availability of instructional materials occurred using adaptive-release technology, whereas in the self-paced section of the course availability of instructional materials did not occur using adaptive release (meaning the entire course was open and could be completed in any amount of time with minimal guidance). Minimal guidance, meaning a suggested timeline for assignment completion, is available and checkpoints that coincide with federal financial aid requirements were necessary. For example students must be dropped from a course by the college when the student has stopped attending classes, or for the purpose of distance learning courses, stopped participating in class assignments or class/online activities for 15% of the course between the last date to drop with a refund (Spring Semester: January 25, 2017, Summer Semester: June 1, 2017) and the last date to withdraw (Spring Semester: March 23, 2017, Summer Semester: July 5, 2017) from the course.

Teacher-paced Treatment. The teacher-paced treatment group completed assignments by specific due dates and were penalized for not completing assignments on time. The teacher-paced treatment group had a strict completion schedule and adhered to attendance reporting guidelines. The first attendance certification dropped students who have not completed one assignment by the 15% point of the course. The second attendance certification dropped students failing to complete assignments for at least three weeks leading up to the 60% point of the course. Attendance certifications were a federal financial aid requirement at the community college level.

Self-paced Treatment. The self-paced treatment group completed assignments on their own, with a timeline offering suggestions for assignment completion throughout the semester, and penalization did not occur throughout the course. The self-paced treatment group had the option to complete the entire course early, or complete one assignment for attendance purposes

by the 15% point of the course (or be dropped from the course) and complete assignments leading up to and including the midterm by the 60% point of the course (or be dropped from the course).

Data Collection Instruments

Below is the description of instruments to measure achievement, completion rates, and pacing preferences.

Midterm Exam. Administration of a midterm test to students before the 60% point of the semester in both the teacher-paced course and self-paced course (to meet federal financial aid requirement) occurred. The course instructor created the midterm tests, which consisted of a variety of question formats (multiple choice questions, true or false questions, fill-in-the-blank, short answer, and essay). Each question was worth varying points depending on instructor discretion. Students were required to complete the midterm test in the proctored testing center on campus.

Mid-Term Grade. Students in both sections of each course received a midterm letter grade after completing the first half of the course. The midterm grade included all assignments up to and including the midterm exam.

Final Exam. Administration of a final exam to students at the end of the semester during exam week in both the teacher-paced course and self-paced course occurred. The final exams were password-protected and students were required to visit the community college campus and complete the exam in the testing center.

Self-paced students had the option of completing the exam early if course completion was before exam week. The course instructor created each final exam, which consisted of a variety of question formats (multiple choice questions, true or false questions, fill-in-the-blank,

short answer, and essay). Each question was worth varying points depending on instructor discretion.

Final Grade. Students in both sections of each course received a final letter grade once course completion or the last day of the semester occurred, whichever came first. The final grade included all assignments (before and after midterm) up to and including the final exam. A description of the quantitative analysis variables are listed in Table 3.

Table 3.

Quantitative Analysis Variables

Variable	Description	Value
Age	Student age at start of course	1 = Traditional 2= Non-Traditional
Midterm Grade/Final Grade	Grade halfway through course/Grade at end of course	1 = A 2 = B 3 = C 4 = D 5 = F 6 = W
Type of Instruction	Pace for entire course	1 = Teacher-Paced 2= Self-Paced
Course Completion	Student completion of course measured at end of course	1 = Pass 2 = Fail 3 = Withdrawn
Grade Point Average (GPA)	Student GPA at start of course	Varies 0 to 4.0
Pell Grant Eligibility	Students eligible to receive a Pell Grant at start of course	1 = Yes 2 = No

Pacing Preferences Surveys: Students in both sections of each course received an identical 5-question pacing preferences survey at the midterm and end of the semester (Appendix C). Example questions include:

- What were your initial thoughts this semester when you learned you would be completing a (self-paced/teacher-paced) course.
- Reflect on the positive experiences of completing a (self-paced/teacher paced) course.
- Reflect on the negative experiences of completing a (self-paced/teacher paced) course.
- Did your preferences for completing a (self-paced/teacher paced) change as the semester progressed?
- If given a choice when completing future distance learning courses, would you choose a self-paced or teacher paced course? Explain.

Interview. Interviews occurred at the end of the semester, before exam week. Each interview used an online platform in the LMS to meet from a distance but in real time. The interviews were recorded. Each interview included an identical series of open-ended questions to assess student preferences as they move through the course. The following prompts were used:

Engagement Questions:

1. What is your favorite aspect of taking an online course?
2. Why do you think someone would choose to take an online course instead of a face-to-face course?

Exploration Questions:

3. Who in particular has influenced your study habits? Please explain.

4. Do you prefer to participate in a course where the professor determines the pace at which you learn? Please explain.
5. Do you prefer to participate in a course where you determine the pace at which you learn? Please explain.
6. Did you find that the pacing of the course used in this study helped you in other courses that you were taking this semester?
7. How do you recover when you fall behind in a course?

Exit Question:

8. What else should I have asked you?"

Procedures

The research study was approved by the Executive Vice President's team at the community college after IRB approval (997901-1) was obtained through Old Dominion University. Before the spring semester of 2017, 45 professors received an email explaining the research study and inviting their participation (Appendix A). Before the semester started, four professors agreed to include their courses in the research study. A follow-up email was sent the first week of classes to the four participating professors. Professors also received a JPG file to upload into their course announcements section promoting the research study. The four professors allowed the researcher to be a teaching assistant in their class so the researcher could monitor the pacing of each course (self-paced vs. teacher-paced), validate self-paced course design, collect data, and contact students directly from the LMS. Validation of the self-paced courses were completed using a nationally recognized rubric for higher education course development. Courses in this study were taught for multiple semesters, building upon student evaluations each semester, and a course review by an instructional designer occurred the first

semester of the course offering and again as distance learning courses are continually audited by department on a rolling basis.

Each professor prepared the course materials for their specific courses to include at a minimum a syllabus, assignments leading up to a midterm exam, the midterm exam, assignments leading up to a final exam, and the final exam. The assignments are identical for both sections of each distance learning course. The courses that were selected for this study have been taught at the community college for many years as these courses are both electives and program specific requirements. The instructional materials are continually validated by program heads and deans of each school on a rolling basis. The textbooks for these courses have also remained relatively consistent; textbook editions are updated every one to two years.

The courses that were selected for this research study have elements of the Carroll Model for School Learning. These courses use scores on tests, including midterm and final exams, to assess performance. Also achievement is a function of time. Each course had a matching section that was offered for the same amount of time (i.e. 16-weeks, 10-weeks, 5-weeks). The researcher, as a teaching assistant, monitored the courses for consistency with research design. Academic achievement in each course, the output of Carroll's model, was measured using assignments, quizzes, tests, projects, a midterm exam, and a final exam. Aptitude, the explanatory variable, or the amount of time a student is given to learn varies by the type of class, teacher-paced or self-paced, and the student's own time needed to master the material. Opportunity to learn for the courses in this study was 16-weeks, 10-weeks, and 5-weeks. Ability to understand instruction in these courses was supplemented with a course syllabus, instructor office hours, and an expectation that students complete self-paced, two hour long orientation course for online learning. Perseverance is left to the student, but encouraged through the

college's early alert system which requires a minimum of two points of contact (progress surveys) each semester. The student receives a progress survey email, which flags the student with positive or negative progress. Subsequently, the student is contacted by student services to discuss the flag if negative progress occurred.

Learners in the self-paced course section completed each unit at their own pace. The pace gave students the decision to complete the course at the beginning of the semester, mid-semester, or at the end of the semester. Learners in the teacher-paced group had specific deadlines to meet throughout the semester. A pacing preferences survey using open-ended questions was administered in each course at the midterm and end of the semester. An invitation to both groups to participate in an interview sharing their experiences and preferences of the course they completed occurred at the end of the semester.

The study was conducted with students registered in five health classes (10 sections) and one communications course (three sections). A learning management system (LMS) was used for all courses. Course design varies between each class (not each section) but uses the same LMS. Instructors posted a course syllabus, assignments, and tracked grades using grade center. Each course syllabus, has at a minimum, course due dates, or suggested due dates.

Research study participants received an email explaining the research study including an information sheet (Appendix B). Students in each course, whether teacher-paced or student-paced, were encouraged to read the syllabus and complete at least one assignment, so they were not dropped the first week of classes due to non-attendance. After one assignment was submitted, students were encouraged to follow the schedule of learning events for their course. The teacher-paced sections had strict due dates and the self-paced sections could work on their own schedule to complete assignments. Once students completed assignments up to and including the

midterm, students were given the opportunity to complete one pacing preference survey. The surveys were embedded in their courses with the midterm exam. After students completed assignments after the midterm, up to and including the final exam, the second pacing preference survey was available. The second survey was also embedded in the student's course with the final exam. During exam week, an email was sent to the participating students using class roster information in the Student Information System (SIS). The email encouraged students to participate in an interview about their pacing preferences in a distance learning course. Four students participated in an interview (two during spring semester and two during summer semester). The four students who participated in the interview at the end of the study received a follow-up information sheet including an informed consent.

Course data were collected multiple times throughout the semester. Access to the community college Student Information System (SIS) provided class roster, student age, financial aid status, and grade point average (GPA) information initially. Participants in each section of the course were divided into one of two groups with age as the independent variable (non-traditional students or traditional students). Midterm grades were collected from the LMS directly and verified by each instructor. Preference survey data was collected using Google Forms and was downloaded at the end of the study. The four interviews were recorded using a program offered through the LMS. The interviews were downloaded at the end of the semester and transcribed. Final grades were pulled from SIS after the admission and records office approved the grades. A random drawing for one of four \$50 gift cards to local merchants was the incentive to participate. Two students from self-paced sections of a course and two students from teacher-paced sections of a course (one from each age group) won a gift card.

Data Analysis

A one-way independent Analysis of Variance (ANOVA) was used to analyze research questions one, two, and three, where the use of an ANOVA test assessed the difference between the treatment groups. Further, a one-way analysis of covariance (ANCOVA) was used to analyze research question five where GPA was a covariate. ANCOVA was used to examine differences between the treatment groups while controlling for the effects of GPA. Finally, a chi-square test of homogeneity was used to analyze research question five where Pell Grant eligibility was a covariate. The chi-square test of homogeneity was chosen to determine if there is an association between the treatment groups and Pell Grant eligibility (See Table 4). The chi-square test of homogeneity was chosen to determine if there is a difference between the treatment groups and Pell Grant eligibility. The chi-square test of homogeneity was used instead of the ANCOVA because the covariate, Pell Grant eligibility, is a dichotomous or nominal variable (Yes/No) not a continuous variable (assumption violation) and the independent variable did not have three or more categorical, independent groups.

Analysis of the fourth research question occurred using a phenomenological tradition using thematic analysis. A phenomenological tradition focuses on the experience of the research study participant through dialogue (first-person point of view). This dialogue is in the form of a survey and interview for this research question. A phenomenological tradition is the research design of choice because the researcher can understand the distance learning classroom environment of community college students and search for a common theme among students; specifically, how their experiences in either a teacher-paced or student-paced course shaped their preferences for taking future distance education courses. Chunking and managing data until the phenomenon emerges is the goal of the phenomenological data analysis. Coding of interview

data occurred through horizontalization, reduction, and elimination (Hays & Singh, 2011). Data review began with the researcher viewing the text from the interview and grouping the data into categories, horizontalization (Hays & Singh, 2011). Non-essential data is managed, reduced, and eliminated at this point. Identification of themes and patterns occurred through structural and textual descriptions (Hays & Singh, 2011). The researcher then placed the data into categories, or textual descriptions (Hays & Singh, 2011). Multiple meanings may exist within the text, identification of relationships within the text, and what these relationships mean is the structural description (Hays & Singh, 2011). In creating a codebook, the use of individualized structural-textural descriptions occurred (Hays & Singh, 2011). Phenomenological data analysis sorts the experience from the redundancy of the text. The essence of the phenomenon was apparent through the use of a composite description (Hays & Singh, 2011). The result is the phenomenon that the student experiences in the distance learning classroom.

Table 4.

Research Questions with Analysis.

Research Questions	Dependent Variables	Analysis
In a self-paced instructional environment, do non-traditional students receive a higher midterm and final grade compared with traditional students who receive self-paced instruction?	DV1 – Midterm Grade DV2 – Final Grade	One-way independent ANOVA with age as the Independent Variable
In a teacher-paced instructional environment, do non-traditional students receive a higher midterm and final grade compared with traditional students who	DV1 – Midterm Grade DV2 – Final Grade	One-way independent ANOVA with age as the Independent Variable

receive teacher-paced instruction?

What is the difference, if any, in course completion rates between non-traditional students and traditional students enrolled in either a teacher-paced instructional environment or a self-paced instructional environment?

DV1 – Course Completion Rates in a teacher-paced instructional environment

DV2 – Course Completion Rates in a self-paced instructional environment

One-way independent ANOVA with non-traditional students and traditional students as the Independent Variable

What is the difference, if any, between non-traditional students' and traditional students' preferences in completing either a self-paced course or a teacher-paced course?

Talley Survey Results

Talley Interview Results

What is the difference in performance, if any, between students enrolled in a self-paced or teacher-paced instructional environment when considering current grade point average and Pell Grant funding eligibility?

DV1 – Final Grade

One-way analysis of covariance (ANCOVA) with non-traditional students and traditional students as the Independent Variable and grade point average (GPA) as a covariate

Chi-square test of homogeneity with non-traditional students and traditional students as the Independent Variable and Pell Grant funding eligibility as a covariate

CHAPTER 3

RESULTS

The results of this research study are identified in two sections. The first section explains the results of the quantitative analyses of research questions one, two, three, and five. The second section summarizes the results of the qualitative analyses of research question four.

Quantitative Analysis

Research Question #1

A one-way independent ANOVA were calculated to assess the measure of performance in a self-paced instructional environment between non-traditional students and traditional students. In Table 5, mean and standard deviation (SD) of midterm and final grades by age are listed.

Table 5.

Mean and Standard Deviation of Midterm and Final Grades by Age in a Self-Paced Instructional Environment

		<i>N</i>	<i>M</i>	<i>SD</i>
Midterm Grade	Traditional	46	2.96	1.632
	Non-traditional	84	3.29	1.719
	Total	130	3.17	1.690
Final Grade	Traditional	46	2.76	1.779
	Non-traditional	84	2.75	1.855
	Total	130	2.75	1.822

There were no statistically significant differences in midterm grades between traditional and non-traditional students in a self-paced course, $F(1, 128) = 1.129, p = .290$. There were also no statistically significant differences in final grades between traditional and non-traditional students in a self-paced course, $F(1, 128) = .001, p = .974$. Performance on the midterm grade was higher for traditional students ($N = 46, M = 2.96, SD = 1.632$) compared to non-traditional students ($N = 84, M = 3.29, SD = 1.719$). A 2.96 is a low B letter grade and a 3.29 is a mid C letter grade. Performance on the final grade was almost even for traditional students ($N = 46, M = 2.76, SD = 1.779$) compared to non-traditional students ($N = 84, M = 2.75, SD = 1.855$). 2.76 and 2.75 are low B letter grades. Performance scores were normally distributed for traditional students at the midterm with a skewness of 0.393 ($SE = 0.350$) and kurtosis of -1.110 ($SE = 0.688$) and for non-traditional students with a skewness of 0.155 ($SE = 0.263$) and kurtosis of -1.421 ($SE = .520$). Performance scores were normally distributed for traditional students at the end of the semester with a skewness of 0.527 ($SE = 0.350$) and kurtosis of -1.318 ($SE = 0.688$) and for non-traditional students with a skewness of 0.619 ($SE = 0.263$) and kurtosis of -1.236 ($SE = 0.520$).

An examination of the Means of Plots for performance among traditional and non-traditional students had interesting results. The non-traditional students went from on average a letter grade of C ($M = 3.29$) through the midterm (See Table 6) to performing a letter grade higher after the midterm ($M = 2.75$) (See Table 7). The traditional students did not show much of a change in performance from midterm letter grade to final letter grade on average ($M = 2.96, 2.76$).

Table 6.

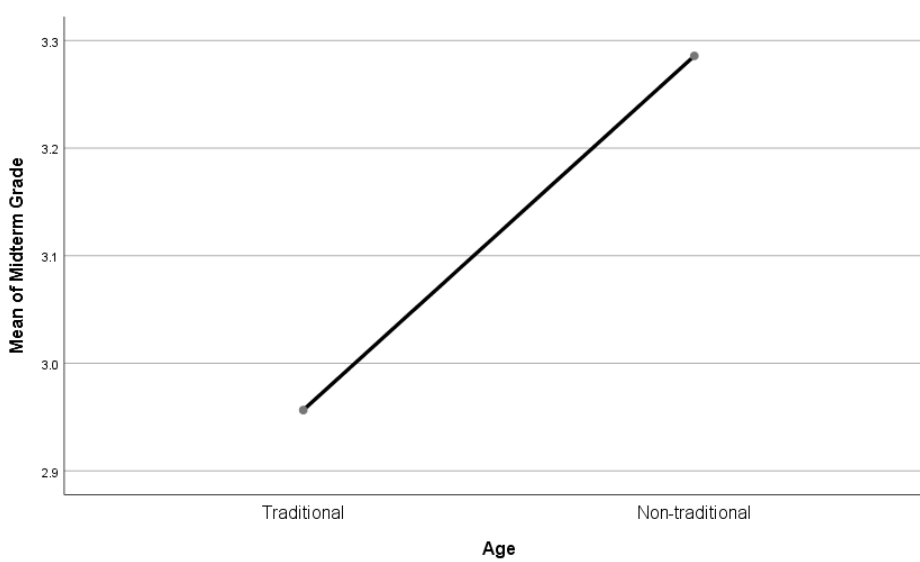
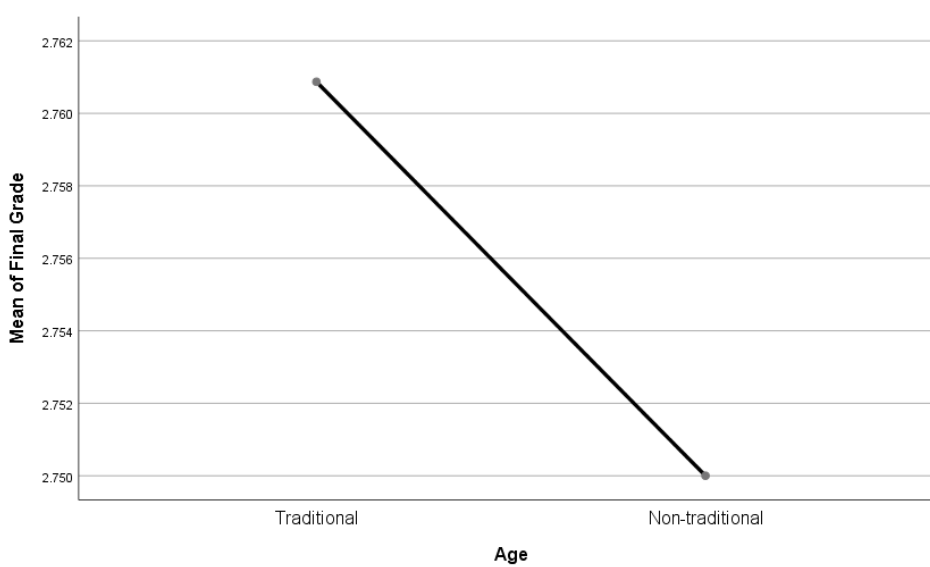
Means of Plots Midterm Grade

Table 7.

Means of Plots Final Grade

Research Question #2

A one-way independent ANOVA were calculated to assess the measure of performance in a teacher-paced instructional environment between non-traditional students and traditional students. As shown in Table 7, performance on the midterm grade was higher for traditional students ($N = 53$, $M = 2.43$, $SD = 1.611$) compared to non-traditional students ($N = 103$, $M = 2.52$, $SD = 1.614$). 2.43 and 2.52 are middle range B letter grades. Performance on the final grade was almost even for traditional students ($N = 53$, $M = 2.40$, $SD = 1.536$) compared to non-traditional students ($N = 103$, $M = 2.51$, $SD = 1.771$). A 2.40 and 2.51 are middle range B letter grades.

Table 8.

Mean and Standard Deviation of Midterm and Final Grades by Age in a Teacher-Paced Instructional Environment

		<i>N</i>	<i>M</i>	<i>SD</i>
Midterm Grade	Traditional	53	2.43	1.611
	Non-traditional	103	2.52	1.614
	Total	156	2.49	1.608
Final Grade	Traditional	53	2.40	1.536
	Non-traditional	103	2.51	1.771
	Total	156	2.47	1.690

There were no statistically significant differences in midterm grades between traditional and non-traditional students in a self-paced course, $F(1, 154) = .110, p = .741$. There were also no statistically significant differences in final grades between traditional and non-traditional students in a self-paced course, $F(1, 154) = .144, p = .705$. Performance scores were normally distributed for traditional students at the midterm with a skewness of 0.940 ($SE = 0.327$) and kurtosis of -0.349 ($SE = 0.644$) and for non-traditional students with a skewness of 0.769 ($SE = 0.238$) and kurtosis of -0.739 ($SE = .472$). Performance scores were normally distributed for traditional students at the end of the semester with a skewness of 1.146 ($SE = 0.327$) and kurtosis of 0.342 ($SE = 0.644$) and for non-traditional students with a skewness of 0.905 ($SE = 0.238$) and kurtosis of -0.640 ($SE = 0.472$).

Research Question #3

A one-way independent ANOVA were calculated to assess course completion rates between non-traditional students and traditional students enrolled in either a self-paced instructional environment or a teacher-paced instructional environment. As affirmed in Table 8, completion rates were higher for teacher-paced courses ($N = 156, M = 2.47, SD = 1.690$) compared to self-paced courses ($N = 130, M = 2.75, SD = 1.822$). Students in the self-paced course were closer to failing and/or withdrawing compared to students in the teacher-paced course, but in both situations both classes were closer to failing and/or withdrawing.

Table 9.

<i>Descriptive Statistics: Course Completion</i>			
	<i>N</i>	<i>M</i>	<i>SD</i>
Teacher-Paced	156	2.47	1.690
Self-Paced	130	2.75	1.822

Total	286	2.60	1.754
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A one-way Welch ANOVA was conducted to determine if course completion rates were different for teacher-paced courses or self-paced courses. Participants were classified into two groups: teacher-paced ($N = 156$) and self-paced ($N = 130$) courses. Course completion rates were not normally distributed for both teacher-paced courses with a skewness of 0.973 ($SE = 0.194$) and kurtosis of -0.393 ($SE = 0.386$) and for self-paced courses with a skewness of 0.584 ($SE = 0.212$) and kurtosis of -1.256 ($SE = .422$). Differences between the pacing groups was not statistically significant, Welch's $F(1, 284) = 4.511, p = .035$. There were no statistically significant differences in course completion rates between the teacher-paced and self-paced courses, Welch's $F(1, 284) = 4.511, p = .035$.

A Mann-Whitney U test was also run to determine if there were differences in course completion rates (1 = Complete, 2 = Not Complete) between teacher-paced and self-paced courses. Distributions of the course completion rates for teacher-paced and self-paced courses were similar, as assessed by visual inspection. Course completion rates were not statistically significantly different between teacher-paced ($Mdn = 1.0$) and self-paced ($Mdn = 1.0$) courses, $U = 11,089, z = -1.753, p = .080$.

Research Question #5

A one-way analysis of covariance (ANCOVA) were calculated to assess the measure of performance between students enrolled in either a self-paced or teacher-paced instructional environment when considering current GPA. There was not a linear relationship between the covariate, GPA, and the dependent variable (final grade) as assessed by visual inspection of a

scatterplot. Data were transformed using a square root (SQRT). Applying a square root transformation inflates smaller numbers, but stabilizes larger numbers. The final grade was greater in the self-paced course ($M = 4.744$, $SD = 2.44$) compared to the teacher-paced group ($M = 4.11$, $SD = 1.80$) (Table 9).

Table 10.

Descriptive Statistics Performance

Dependent Variable: SQRT Final Grade

Class Pacing Type	<i>M</i>	<i>SD</i>	<i>N</i>
Teacher-Paced	4.1104	1.79583	118
Self-Paced	4.7441	2.44819	90
Total	4.3846	2.12105	208

There was homogeneity of regression slopes as the interaction term was not statistically significant, $F(1,204) = 2.836$, $p = .094$. The final grade was greater in the self-paced course ($M = 4.744$, $SD = 2.44$) compared to the teacher-paced group ($M = 4.11$, $SD = 1.80$). There was a statistically significant difference in final grades between the two types of courses, $F(1,205) = 3.987$, $p < .05$, $partial \eta^2 = .019$. (Table 10).

Table 11.

Tests of Between-Subjects Effects

Dependent Variable: SQRT Final Grade

Source	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.	Partial Eta Squared
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Corrected Model	250.163 ^a	2	125.082	37.648	.000	.269
Intercept	972.445	1	972.445	292.691	.000	.588
GPA	229.663	1	229.663	69.125	.000	.252
ClassType	13.247	1	13.247	3.987	.047	.019
Error	681.098	205	3.322			
Total	4930.000	208				
Corrected Total	931.262	207				

a. $R^2 = .269$ ($Adjusted\ R^2 = .261$)

The final grade was statistically significantly greater in the self-paced courses ($M = 4.674$, $SE = .192$) compared to the teacher-paced courses ($M = 4.164$, $SE = .168$), a mean difference of .510, 95% CI [.006, 1.014], $p < .05$. When considering students' GPA, performance in self-paced courses increase. The higher the student's GPA the better he or she did in a self-paced course compared to a teacher-paced course.

A chi-square test of homogeneity with weighted cases was conducted between students enrolled in either a self-paced or teacher-paced instructional environment when measuring final grade performance. Weighting cases assigns importance to the cases in the dataset. The weight is the number of occurrences. Weighting controls for over or under reporting of Pell Grant eligibility. All expected cell counts were greater than or equal to five with the lowest expected cell count equal to 21.85. A random weighted sample of 292 teacher-paced students and 288 self-paced students from a community college were included in this analysis, all of whom had received a final grade of A, B, C, D, F. A chi-square test of homogeneity was run. The two multinomial probability distributions were not equal in the population, $\chi^2(3) = 48.419$, $p = .001$.

Observed frequencies and percentages of class pacing type for each final letter grade are presented in Table 11.

Table 12.

Crosstabulation of Class Pacing Type and Final Letter Grade

Final Letter Grade	Class Pacing Type	
	Teacher- Paced	Self-Paced
A	61 (20.9)	48 (16.7)
B	80 (27.4)	58 (20.1)
C	54 (18.5)	30 (10.4)
D	32 (11.0)	12 (4.2)
F	65 (22.3)	140 (48.6)

Post hoc analysis involved pairwise comparisons using multiple z-tests of two proportions with a Bonferroni correction. This correction was necessary to reduce chances of obtaining false positive results (type I errors). Statistical significance was accepted at $p < .01$. There were statistically significant differences in the proportion of teacher-paced students who received a B than self-paced students ($n = 80$, 27.4% versus $n = 58$, 20.1%), as well as teacher-paced students who received a C than self-paced students ($n = 54$, 18.5% versus $n = 30$, 10.4%), and teacher-paced students who received a D than self-paced students ($n = 32$, 11% versus $n = 12$, 4.2%), $p < .01$. There was also a statistically significant difference in the proportion of self-

paced students who received an F than teacher-paced students ($n = 140$, 48.6% versus $n = 65$, 22.3%), $p < .01$. There were no statistically significant differences in the proportion of teacher-paced students who received an A than self-paced students ($n = 61$, 20.9% versus $n = 48$, 16.7%), $p > .01$.

A chi-square test of homogeneity with weighted cases was conducted again between students enrolled in either a self-paced or teacher-paced instructional environment when measuring final grade performance. This time Pell Grant funding eligibility was also considered. All expected cell counts were greater than or equal to five with the lowest expected cell count equal to 11.85 for students receiving Pell Grants and 9.68 for students who did not receive a Pell Grant. A random weighted sample of 292 teacher-paced students and 288 self-paced students from a community college were included in the analysis, all of whom had received a final grade of A, B, C, D, F and had either received a Pell Grant or had not received a Pell Grant. A chi-square test of homogeneity was run again. The two multinomial probability distributions were not equal in the population for students receiving a Pell Grant, $\chi^2(3) = 51.680$, $p = .001$ and were equal for students who did not receive a Pell grant, $\chi^2(3) = 4.961$, $p = .001$. Observed frequencies and percentages of class pacing type for each final letter grade and students who received Pell Grant eligibility are presented in Table 12.

Table 13.

Crosstabulation of Class Pacing Type, Final Letter Grade, and Pell Grant Eligibility

Final Letter Grade		Class Pacing Type	
		Teacher-Paced	Self-Paced
Yes	A	21	13

No		13.0%	7.8%
	B	46	24
		28.4%	14.5%
	C	30	15
		18.5%	9.0%
	D	20	4
		12.3%	2.4%
	F	45	110
		27.8%	66.3%
	A	40	35
		30.8%	28.7%
	B	34	34
		26.2%	27.9%
	C	24	15
		18.5%	12.3%
	D	12	8
		9.2%	6.6%
	F	20	30
		15.4%	24.6%

Post hoc analysis involved pairwise comparisons using multiple z-tests of two proportions with a Bonferroni correction. Statistical significance was accepted at $p < .01$. There were statistically significant differences among students who received Pell Grants. There were statistically significant differences in the proportion of teacher-paced students receiving a Pell Grant who received a B when compared to self-paced students ($n = 46$, 28.4% versus $n = 24$, 14.5%), as well as teacher-paced students who received a C than self-paced students ($n = 30$, 18.5% versus $n = 15$, 9%), and teacher-paced students who received a D than self-paced students ($n = 20$, 12.3% versus $n = 4$, 2.4%), $p < .01$. There was also a statistically significant difference in the proportion of self-paced students who received an F than teacher-paced students ($n = 110$, 66.3% versus $n = 45$, 27.8%), $p < .01$. There were no statistically significant differences in the

proportion of teacher-paced students who received an A than self-paced students ($n = 21$, 13% versus $n = 13$, 7.8%), $p > .01$. There were no statistically significant differences among students who did not receive Pell Grants. Teacher-paced students who did not receive a Pell grant received better grades than self-paced students who did not receive a Pell Grant. Teacher paced students not receiving Pell Grants received more A's ($n = 40$, 30.8% versus $n = 35$, 28.7%), $p > .01$, C's ($n = 24$, 18.5% versus $n = 15$, 12.3%), $p > .01$, and D's ($n = 12$, 9.2% versus $n = 8$, 6.6%), $p > .01$. The teacher-paced and self-paced students not receiving Pell Grants received the same number of B's ($n = 34$, 26.2% versus $n = 34$, 27.9%), $p > .01$. The self-paced students not receiving Pell Grants received more F's ($n = 30$, 24.6% versus $n = 20$, 15.4%), $p > .01$.

Qualitative Analysis

Topic Development

According to Patton (2002), the first step of analysis is developing a coding scheme. The preliminary codes are a product of both the midterm and final surveys and the emergence of perceptions from these surveys in both instructional environments. According to Hays and Singh (2011), the research question should be used as guidance for preliminary codes. The preliminary codes for the pacing surveys were student perceptions, pacing, and student responsibility outside the classroom. When reviewing both the midterm and final surveys for each instructional environment, patterns quickly emerged. Three themes or topics emerged from the surveys: (1) outside obligations, (2) the professor plays a pivotal role in distance learning, and (3) connecting students (social support) is necessary for success. The highlight function in Excel was used to highlight similar topics and excel was also used to group the topics together into categories. The categories are (1.1) work, (1.2) family, (1.3) personal health, (1.4) finances, (2.1) professor availability, (2.2) encouragement, (2.3) forgiving, (2.4) content organization, (3.1) face-to-face

interaction, (3.2) study groups, (3.3) consistency in pacing, and (3.4) responsibility. When the researcher reviewed the topics and categories multiple times, it was evident that some categories appeared in the transcriptions more than others. The topics and categories appearing most often may be of higher importance than the less appearing topics and categories.

The preliminary codes for the interviews were support, pacing, and motivation. When reviewing the interviews multiple patterns were threaded throughout. Four themes stood out: (1) convenience in juggling personal obligations, (2) flexibility in pacing, (3) instructor as guide, and (4) returning to school. The highlight function in word was used to highlight similar topics and group the topics together into categories. The categories are (1.1) family, (1.2) work, (1.3) multiple classes, (2.1) teacher-paced, (2.2) self-paced, (3.1) syllabus, (3.2) reminders, (3.3) organization, (3.4) feedback, (4.1) role-model, (4.2) anxiety, and (4.3) course difficulty. Similar to the pacing surveys some categories appeared more often in the transcriptions. Again these topics and categories may be more important than the less appearing topics and categories.

Analysis Results

The self-paced midterm survey was completed by 51 students and 26 students completed the self-paced final survey (14 students completed both the midterm and final survey). The teacher-paced midterm survey was completed by 51 students and 68 students completed the teacher-paced final survey (13 students completed both the midterm and final survey). Students were asked to categorize their current age by choosing 18 to 21 years old, or 22 years old or older. An overview of the age range is below for both groups of students (Table 13).

Table 14.

Pacing Preferences Surveys: Current age of students

Course Pace	Survey	Age	Totals
Self-Paced	Midterm	18 to 21 years old	13
		22 years or older	38
			51
Self-Paced	Final	18 to 21 years old	9
		22 years or older	17
			26
Teacher-Paced	Midterm	18 to 21 years old	13
		22 years or older	37
			50
Teacher-Paced	Final	18 to 21 years old	23
		22 years or older	45
			68

Students were also asked to choose their highest level of education completed. The results ranged from high school graduate, some college, Associate's Degree, Bachelor's Degree, and Master's Degree. Students did not report less than high school, doctoral degree, or professional development (Appendix D). The next two survey questions focused on Pell Grants. The first question focused on Pell Grant eligibility and the second question focused on Pell Grant current recipients (Appendix D). Pell Grant eligibility when self-reported was balanced between the self-paced surveys with 17 students reporting yes to receiving Pell Grants, 16 reporting no to receiving Pell Grants, and 18 were not sure if they received a Pell Grant at the midterm and nine reported yes to receiving Pell Grants and no to receiving Pell Grants and eight were not sure if they received Pell Grant eligibility when completing the final survey. The majority of the teacher-paced survey responses were yes to receiving Pell Grants at the midterm and no to receiving Pell Grants or not sure about receiving Pell Grants for the final survey. Pell Grants

received data responses were overwhelmingly no for both groups when completing both the midterm and final survey. The survey question that focused on grade point average (GPA) varied. Seven students were unsure of their GPA in the self-paced instructional environment, but the majority self-reported a GPA in the A range. The teacher-paced instructional environment responses were similar with 11 students whom were unsure of their GPA and the majority of students self-reported a GPA in the A to B range.

The interviews were completed by four non-traditional students. Two students completed a teacher-paced course and two students completed a self-paced course. The interview consisted of nine open-ended questions (Appendix E). The first two questions were engagement questions, followed by six exploration questions, and the last question was an exit question. Validity of qualitative data collection was obtained by paying attention to transferability (purposive sampling), dependability, and confirmability (Lincoln & Guba, 1985). Data credibility was obtained through prolonged engagement. The researcher is an employee at the community college. The professors who participated know the researcher and many of the students were in the researcher's classes. The researcher also contacted independent qualified third-parties to examine the research study including the data and the preliminary results of the research study. The research was also triangulated using multiple data sources through the collection of both quantitative and qualitative data (preference surveys and interviews). The findings are also dependable as the responses were recorded over two semesters with similar responses obtained. The classes used in this research study are similar to courses offered at other community colleges. Finally, confirmability was obtained as the researcher kept a reflexive journal detailing decision making, logistics, and reflection.

Research Question #4

Pacing Survey Results

The data were categorized by question and the responses were divided by age (Appendix D). The first question focusing on students thoughts about course pacing were mixed at the beginning of the semester, but a pattern emerged by the final survey. Of the students who completed both the midterm and final survey three of the traditional students were excited and one was nervous. The nervous student stated that “I have to keep up with the work and could not let myself fall behind.” Five of the non-traditional students who completed both surveys were confident in their ability to complete a self-paced course and two were nervous. The two nervous students were less stressed by their placement in the self-paced course when completing the final survey.

Self-Pacing as a Preference

When reviewing all responses, traditional students in the self-paced course were balanced initially in their thoughts toward a self-paced course. By the end of the semester the traditional students preferred the self-paced course. The majority of non-traditional students preferred the self-paced course from the beginning of the semester and through the end of the semester. A self-paced non-traditional student reported “relief at being able to complete coursework at a pace that fits of my need to balance work and school.” Another teacher-paced non-traditional student was looking for flexibility in the course when discussing thoughts about completing a teacher-paced course. The student stated, “Made you accountable but some flexibility would have been nice. People take on line courses because they have responsibilities like work, families, etc.” A non-traditional student who completed a self-paced course as part of this research study the previous semester (spring 2017) and a teacher-paced course the following summer semester preferred the

self-paced course. The teacher-paced traditional student stated, “I was not as excited as I was last semester when I found out I was completing a self-paced course.”

The pace of the course dictated the response categories to a degree. Work as a career was mentioned in the survey response when reflecting on positive experiences in course pacing 13 times by non-traditional students. The non-traditional students mentioned work more positively, not as a burden, in the teacher-paced course survey. Two responses stood out among non-traditional students in a teacher-paced environment. The first response, “I’m learning information that I didn’t know before and I feel it may help me later in my career”. The second response,

I really enjoy the fact that I am learning things that are directly applicable to my current and future professional life. Being at work and seeing words on patient charts and clinical notes that I am familiar with because of this class is extremely exciting.

The non-traditional students also enjoyed the flexibility of a self-paced course. One student stated,

I really like being able to work ahead and do as much as I want. It’s nice because I have weeks where I’m very busy with work and cannot pull myself to do homework, so when I have the extra time, I like to get as much done as possible.

Another self-paced non-traditional student stated, “Relief at being able to complete coursework at a pace that fits my need to balance work and school.” Three non-traditional students in the self-paced course mentioned family as a positive experience. Specifically, one student stated, “I enjoyed that this was a self-paced class. My kids were off from school for the summer and I was able to plan my schoolwork around our travel.” Another student stated, “Currently I have a newborn and being able to complete assignments on my schedule is beneficial.”

Personal health was more of a concern for non-traditional students in all courses. Again, in the self-paced courses student response was more of a burden (stress-related) whereas teacher-paced course responses were related to subject matter improving student health. One self-paced non-traditional student specifically stated “I have loved the experience! It is a lot less stressful on me” while another stated, “I have never felt pressured or rushed.” Neither self-paced students nor teacher-paced students mentioned finances in relation to positive experiences of taking either a self-paced or teacher-paced course. Professor availability was not mentioned in a self-paced class from a positive experience viewpoint. The teacher-paced students noticed the social presence of the instructor. One traditional student stated, “I believe the teacher was very present throughout the semester.” Another non-traditional student stated, “The information I’m learning, the consistency of due dates, Professor is quick in response to email, quick grading and notifications of those being updated to name a few.” Encouragement was mentioned once in both self-pacing and teacher-pacing among non-traditional students. A professor that offered encouragement and empathy was mentioned once by a non-traditional student in a teacher-paced course. Forgiveness may not be a necessity in a self-paced course as the due dates are non-existent to a degree.

Positive Experiences in Course Pacing

Student responses were strong when discussing three aspects of their positive course experience. These three responses were content organization, consistency in pacing, and responsibility. Content organization responses were mentioned 13 times by traditional students and 20 times by non-traditional students when speaking about positive experiences in a teacher-paced course. Specifically, a teacher-paced traditional student stated, “I think this course was well organized. The assignments helped me learn the material and the due dates gave me enough time to complete my assignments.” This response specifically relates to Carroll’s models of

school learning from an instructional design perspective. The time needed for learning is a direct reflection of the quality of instruction. The instructional designers at the community college review all distance learning courses using a Quality Matters Rubric. The researcher in this research study also reviewed the courses and would agree that the courses are organized well. A non-traditional student stated, “This course was very insightful for me. I really enjoyed the content and found myself very interested in each week's reading and even researching topics further.”

Face-to-face interaction in a distance learning course was not mentioned when reflecting on positive experiences in response to course pacing. Study groups and interaction through a discussion board post, was mentioned once as a positive response in a teacher paced course among a non-traditional student. Consistency in pacing and responsibility were the codes that appeared the most in the responses to positive experiences. Consistency in pacing is balanced across both courses, but was mentioned more among non-traditional students (self-paced course 20 times and teacher-paced course 13 times). Specifically, a teacher-paced non-traditional student mentioned, “I enjoyed the flexibility of an online course, self-guided learning with instruction, getting to share with others, virtually.” Two self-paced students specifically mentioned the recommended schedule as being helpful to them when planning their study time. A traditional student mentioned, “Taking this course was a pleasure this summer! I loved that it was a self-paced course, which allowed me to have just the right amount of flexibility. The recommended schedule was also very helpful.” A non-traditional student mentioned “I am able to complete my tasks at times that are suited to my schedule, but also that keep within the general timeframe of the suggested schedule.” This response also specifically relates to Carroll’s model of school learning from an instructional design perspective. By offering a recommended

schedule, the student still has the flexibility of scheduling the time that they feel like they need to complete course assignments.

Responsibility was mentioned the most among traditional students in a self-paced environment (12 times) and non-traditional students (28 times) in a teacher-paced environment. One traditional student in a self-paced environment stated,

Thus far completing a self-paced course has been quite a joy. As long as I stick to the suggested deadlines everything is fine, and in the event that I do not get to an assignment on time it is nice to know that I will not be penalized as long as I get it done as soon as possible.

A self-paced non-traditional student was excited because, “I finished a course two weeks before the semester ended.” Two teacher-paced non-traditional students were more direct in their responses, “taught me to prioritize and be responsible” and “helped me get a handle on time management.”

Negative Experiences in Course Pacing

The pace of the course continued to dictate the response categories again. Professor availability, content organization, and responsibility were also mentioned (Appendix D). Students in the self-paced courses had very little negative responses about balancing work, family, personal health, or finances while the teacher-paced courses had a few negative responses. These responses could be related to any format of distance learning course. For example,

The only negative experience I had was my own fault. I unwrapped my text book before the class became available in blackboard. Not knowing that the two major exams had to

be taken in person, as I have a small child that is not allowed in the testing center and I have no help. So, I feel I may have robbed myself out of an A.

Another student stated, “I wish I had done better with keeping up with the course, but due to circumstances beyond my control I could not purchase a book.” Both accounts were teacher-paced non-traditional students.

The availability of the professor and organization of course content was a recurring pattern in both surveys, but especially in teacher-paced classes. One teacher-paced traditional student stated, “I didn't like how teacher communication was difficult.” Four other non-traditional students in a teacher-paced environment also mentioned the classroom experience in relation to interaction with the instructor and other students. These results also align with Carroll's Model of School Learning. The ability to understand instruction can be flawed when the student cannot reach the instructor and does not have other student interaction. One of the students stated,

It took a lot of time compared to a classroom setting. I had some trouble with the technological requirements as I have an older laptop and desktop. The professor was probably overloaded and could not always give me a timely reply.

Another student stated, “I didn't have the classroom experience and get to meet professor and classmates.” Face-to-face interaction was important to non-traditional students and especially in a teacher-paced course. Specifically, “Lack of class time takes some adjusting to” and “... but I do learn better in person or even a live meeting once a week.” A self-paced traditional student stated, “I would say, in class you learn from your teacher and your class mates at same time. You get to interact with people, which to me is a learning experience.”

Consistency in pacing and responsibility were a pattern among non-traditional students in both course formats. Consistency in pacing also relates to Carroll's Model of School Learning. Perseverance may decrease when the student cannot properly manage his or her time to match the pace of the course. A self-paced traditional student stated, "Towards the end of the semester, I got lazy and didn't complete assignments in a timely manner. I let them pile up and had weeks overlapping with each other." A non-traditional self-paced student stated, "The only difficult part was trying to remember to go back and comment on other classmate's blackboard posts when I worked ahead or when they were falling behind." Another non-traditional self-paced student stated,

If it could be considered negative, I really had to discipline myself, to that extent you are on your own. It's really only negative if you can't discipline yourself. Maybe I wish there had been an extra week to the class.

Pacing Preference Changes as the Semester Progresses

From the beginning of the course to the midterm, student preferences did change slightly about course pacing preferences and especially among the non-traditional students. Ten non-traditional students in a self-paced environment changed their preference for completing the course they were assigned and 9 non-traditional students in a teacher-paced course changed their preference. One self-paced non-traditional student stated, "They did. I like it because I can use it to my advantage as I also work full time in a management position." Another self-paced non-traditional student stated, "Yes. I liked it at first, then realized that I needed actual due dates. If I didn't have a job I probably would have liked it much better." A teacher-paced non-traditional student stated, "It was a lot of work, my preferences didn't change, the strict due dates kept me on track." Another teacher-paced non-traditional student stated, "Yes and no. If instructions are

clear and instructor communication is good then strict due dates are manageable. However, outside obligations and flexibility on a case-by-case basis should be considered.” A third teacher-paced non-traditional student stated,

Yes. As the weeks passed, I got into a routine and appreciated the amount of work due at certain times. I found myself reading further in depth as opposed to possible scrambling to get through it all if a chunk was left until the end of the semester.

When reflecting at the end of the course, student preferences did slightly change about course pacing preferences among the traditional students (Appendix D). Three self-paced traditional students and seven teacher-paced traditional students changed their preferences at the end of the semester. For example a self-paced traditional student stated,

My preferences definitely changed over the course of the semester. In the beginning I thought that a self-paced course would be difficult because I had never taken a course where I could set my own deadlines. But now as I begin to wrap up the course I see that the benefits of a self-paced course outweigh the costs.

A teacher-paced traditional student stated, “Yes, I truly like the strict dates because it helped my time management.” Another teacher-paced non-traditional student stated,

Yes! I found that the due dates helped me to structure time set aside each week to work on my assignments. If I had my own ability to decide when things were due, I may have created more work for myself.

The last statement reflects multiple variables of Carroll’s Model of Student Learning. First the student clearly understands his or her aptitude to learn. The student needed the structure to obtain high aptitude. The student viewed the opportunity to learn as ideal. Perseverance was

highlighted in that the student realized without direction, or mandatory due dates he or she may have wasted valuable time.

The final question gave students the chance to choose what type of distance learning course they would prefer to take in the future (Appendix D). Self-paced traditional (11) and non-traditional (32) students prefer a self-paced course at the beginning of the semester and almost unanimously, 22 of the 23 survey responses, prefer a self-paced course at the end of the semester. Eleven identical students filled out both the midterm and final preference survey. A self-paced traditional student stated, “Yes I would. Self-paced courses give students the freedom to balance their academics, personal life, and responsibilities in the way that suits their own schedule comfortably.” A non-traditional student in a self-paced course stated, “Yes. I have many obligations to manage as an adult returning to school and it would have been impossible to do so with nothing but traditional course schedules.” Another non-traditional student in a self-paced course stated, “I would like it because you can go ahead if you choose or if you fall behind it’s not that big of a deal and you can also schedule testing and exams when it works for you.” Another non-traditional student in a self-paced course mentioned, “Absolutely. It works best for my style of learning. I get in a “learning mood” sometimes and like to knock out a bunch of work at once and then maybe take a break the next week.” Another non-traditional student in a self-paced course stated, “Yes, I like having the freedom to do my work when I have time, this class provided less stress than other non-self-paced courses.” A traditional self-paced student noted,

I totally would choose a self-paced course. I kept up with assignments as they were laid out in the syllabus, but I never feel pressured to complete assignments and never felt stressed. It gave me less of a headache when dealing with classes because this one never made me feel stressed.

One non-traditional student stated,

Yes, because I feel like self-paced courses make you stay on a schedule and honestly the class is going by real fast. Yes, I would definitely choose another self-paced course mainly because of my work schedule of working a full time job and lastly the opportunity to do my work at a pace that would keep me ahead at times of class assignment and quizzes.

Another non-traditional student stated, “Absolutely. Completing assignments was so much more manageable (not necessarily easier) in comparison to my other online course and my face to face courses.” A different non-traditional student stated, “I would absolutely choose a self-paced course again. I like the freedom and I like that you have to have to be responsible for yourself.”

One other non-traditional student stated, “Yes, you can get the course work done earlier than an average semester.”

Teacher-paced students prefer a teacher-paced course leading up to the midterm (13) (Appendix D), but preferences do change at the end of the semester. Specifically, traditional students in a teacher-paced course were balanced in their preferences of either a self-paced or teacher-paced course. Leading up to the midterm a traditional teacher-paced student stated, “Teacher-paced, because if it were up to me to complete thing on my own time, I would put things off too much and never get things done until the very last minute which would be very overwhelming.” Another traditional teacher-paced student stated, “Teacher-paced because even though I’m 21 years old, I still have a terrible procrastination problem. With a teacher-paced online class I have the best of both worlds: Flexibility and a little push to do my work.” A third traditional teacher-paced student stated, “Strict due dates because in the real world you don’t pick

and choose when you want to be late for work, it prepares you!” When completing the final pacing survey, a traditional teacher-paced student stated,

Either course is fine with me because I have self-discipline; therefore, I can keep up with my assignments in a student-paced course. However, taking a teacher-paced course makes my life easier because I know exactly what I have to do and when I have to do it. Once I turn in my completed assignments for that week, I feel relieved and I know I don't have any more work to complete until the following week. Whereas, in a student-paced course there are not set due dates, so I don't have the relief of submitting my completed assignments for that week. In a student paced course, there isn't an end in sight, until the very end of the course, while in a teacher paced course, there is a weekly end in sight.

Another traditional teacher-paced student stated, “Student-paced because most students have jobs or other things going on, so it is nice to do the work whenever you have the time, not when the teacher says you have to.”

The non-traditional students for the most part preferred a teacher-paced course when completing the midterm pacing survey. Leading up to the midterm a non-traditional teacher-paced student stated,

Student paced course - because I am the type of student that will make time for my priorities, such as school. However it is a luxury to decide when that time will be, instead of having the time set for you (like in a teacher paced course).

Another non-traditional teacher-paced student stated, “All my distance learning classes have been teacher-paced, but I'd like to try a student-paced course at least once.” A third non-traditional teacher-paced student stated, “One of each, because the teacher paced stops me from procrastinating, yet student paced allows me some flexibility.”

The non-traditional students when completing the final pacing survey began to change their preferences. One non-traditional teacher-paced student stated in the final pacing survey, I enjoyed the flexible due dates. Flexible dates allow the student to double check the work and gives them more suitable times to take the quizzes if they are pressed for time during an explicit due date. This allows the student to perform greater than they would have otherwise.

Another non-traditional teacher-paced student stated in the final pacing survey, “I would choose a student paced course with flexible due dates because I am a single parent of three boys, I work full time, and it has been many years since I was in school.”

Both traditional and non-traditional students in a teacher-paced course mentioned the idea of combining the two course formats. Traditional students specifically stated, “A little bit of both, but I am at the end of my bachelor’s degree and will be completely done in August so in the future I would prefer student-paced or on-campus.” A different traditional student stated, “I think I would like a combination of both. Strict due dates for test and quizzes but maybe student paced assignments.” A non-traditional student noted, “A combination of both. I can’t take 2 classes and both have strict dates, I have to have balance.”

At the end of the semester traditional and non-traditional students were split on their preference of completing a self-paced or teacher-paced course in the future. The teacher-paced students created a new category wanting a combined format with both teacher and student pacing (Table 14). Overall, students in a teacher-paced environment want a teacher-paced course and students in a self-paced environment want a self-paced course, both of which will be discussed in chapter four.

Table 15.

Final Survey: After reflecting on the entire semester, if given a choice when completing future distance learning courses, would you choose a teacher-paced course?

	Survey Type	Totals
18 to 21 years old	Self-Paced	9
	Teacher-Paced	10
	Combination of both	3
22 years old or older	Self-Paced	15
	Teacher-Paced	22
	Combination of both	2

Interview Results

The first question focused on the student's favorite aspect of taking an online course. The majority of student's favorite aspects of taking an online course were that they work full-time, have a family, and do not have transportation to get to campus. The second question focused on why a student would choose to take an online class instead of a face-to-face course. Students chose an online course again because they work and courses offered during the day do not fit their schedules. Online courses were convenient because students felt they could work at their own pace. A teacher-paced student stated,

I guess to work at your own pace. I mean, you still have deadlines to meet like every Sunday night. We had to make sure our assignments were in, but it gives you the whole week to actually get those assignments done on your time.

The third question concentrated on who, in particular, has influenced the student's study habits. Two students found their motivation to study from within themselves. A teacher-paced non-traditional student stated,

I think it's just different ways that I have learned to do my own study habits actually. I have a Bachelor's degree already so now that I am older and going back to school I think I just needed help with learning how to do things differently than I did my first time around. I actually paid for myself and actually carved the time out to actually study and not procrastinate and then try to study everything at one time.

One student mentioned a significant other and one student mentioned his or her instructor. A teacher-paced non-traditional student stated, "my instructor because she teaches us how to be prepared and you know how to stay on task and ways that you can make it easier on yourself by planning ahead."

Course Pacing

The next three interview questions delved into the students' preferences to participate in a course where either the professor or student determines the pace of learning, and whether the pace of the course helped with completion of other courses during the same semester. Students were split in their responses about their preferences for course pacing. Two students in teacher-paced courses preferred a teacher-paced course and two students in self-paced courses preferred a student-paced course. A teacher-paced student commented,

It depends on what subject it is. Some subjects you can do on your own. Other subjects you might need help from the professor to guide you throughout the course. I don't mind the instructor setting the pace if the class is a very difficult class and it's a very involved class. I would prefer the instructor to, um, set the pace than me to try and do it on my

own and fail. I mean if it's something that I can do on my own then yeah I would prefer to set the pace, but if it's a more complex complicated class I would prefer the professor to set the pace.

Course Policies

The next two questions examined course policies related to withdrawing from class and recovering when falling behind in a course. The students felt the withdrawal policies were clear and reminders were sent to students as the withdrawal date neared. When asked how students recover after falling behind, the two students interviewed would approach the instructor first, and two students would look inward for motivation. A self-paced non-traditional student stated,

I struggle that is why I like your class it allowed me to work ahead. I also found it hard to get motivated once I have fallen behind. I am able to get the work done, but it is not at one hundred percent.

Course Difficulty Determining Pacing

The final question was an exit question focusing on anything else that the researcher should have asked the student during the interview. The majority of the responses were no. One response of interest focused on course difficulty. A teacher-paced non-traditional student stated,

I guess my thing for online is sometimes it can be a little difficult. Like the class that I just took, it was pretty straight forward. Um, the only thing that was a little difficult trying to do what you do in class in an online class. ...trying to not make it like a classroom because it is online. That's about it, other than that, I mean, it wasn't bad as an online class. I mean, it was pretty straight forward I haven't had any online courses that were difficult for me though.

CHAPTER 4

DISCUSSION

The purpose of this research study was to investigate whether a significant difference existed between non-traditional students and traditional students in either a teacher-paced or self-paced instructional environment in terms of two dependent variables: achievement and course completion outcomes. Also of interest was whether a significant difference existed between student preference in completing either a self-paced course or teacher-paced course in a community college setting. In this chapter, an explanation of the study results, limitations, and their implication for future research are discussed.

Student Age in Relation to Achievement

The two groups, traditional students and non-traditional students, were not different. Age did not determine performance in a self-paced course. These findings are consistent with previous research suggesting distance education is flexible, student oriented, and learning pace accommodates the students' capabilities (Samarawickrema, 2005), not age (Aragon & Johnson, 2008; Willing & Johnson, 2009). Students do not give up their obligations (outside of school) to complete a self-paced course, therefore, both traditional and non-traditional students can both be successful or unsuccessful. Other factors, not age, determine whether a community college student will be successful or unsuccessful in a self-paced course. These factors may be poor time management skills associated with balancing family, work, and school. Age also did not determine performance in a teacher-paced course. These findings are also consistent with previous research suggesting that non-traditional students have obtained skills from life experiences that lead to success in the classroom (Byrd & Macdonald, 2005). Both non-

traditional and traditional students are trained to perform in a teacher-paced environment as this environment is common in a community college setting.

Course Completion Rates in Relation to Course Pacing

Course completion rates were not different between teacher-paced and self-paced environments. These findings are also consistent with previous research suggesting that a self-paced environment does not seem to give students an advantage over a teacher-paced environment (Karich, Burns, & Maki 2014; Niemiec, Sikorski, Walberg 1996). Older research by Hannafin (1984) noted a larger effect when the student was older. This research may have changed over time due to advancements in technology and student use of technology outside the classroom. While not significant, students in a self-paced course were closer to failing and/or withdrawing compared to a teacher-paced course, but in both situations both classes were closer to failing and/or withdrawing than passing the course. This is a trend in community colleges, students are enrolling in online classes as a convenience, but are not prepared to complete this type of course.

Student Age and Course Pacing Preferences

Student preferences do differ between non-traditional students and traditional students completing a self-paced course and a teacher-paced course. Students in a teacher-paced environment want a teacher-paced course and students in a self-paced environment want a self-paced course. The teacher-paced students were more balanced across the responses at the end of the semester compared to the midterm, but the students continued to want a teacher-paced class. These results may be attributed to the current community college model of teacher-paced courses. When students were given a chance to try a self-paced course they were often nervous at the beginning of the course, but preferred a self-paced course at the end of the semester. The

teacher-paced students, for the most part, did not know that a self-paced course was an option. Therefore, the results were aligned with current practices. These findings are consistent with previous research in that students choose courses based on familiarity. Students try to enroll in courses with instructors they have had in previous semesters (Babad, Darley & Kaplowitz, 1999; Eccles & Wigfield, 2002; Pass, Mehta, Mehta, 2012), or if a friend is enrolled in the course (Chonko, Tanner and Davis, 2002; Pass, Mehta, Mehta, 2012). Samarawickrema (2005) notes that not everyone is ready for a self-paced course, or has a preference for self-pacing. Koper (2015) also noted that the majority of distance learning students may prefer to study at their own pace, but there are also learners who need and prefer structure to be successful.

Achievement in Relation to GPA and Pell Grant Eligibility

Course performance does differ between students when considering grade point average (GPA). Students in a self-paced course had higher final grades than students in a teacher-paced course when taking GPA into consideration. These findings are consistent with previous research. Pascarella and Terenzini (2005) view grades as a measure of success and GPA as being essential to student's standing in college and continued enrollment. Students with higher GPAs are more likely to seek help than students with a lower GPA (Perin, 2004). Lim (2016) found that students with a higher GPA were more likely to complete a self-paced course successfully compared to a teacher-paced course.

Course performance also differs between students who do and do not receive Pell Grant eligibility. For this research question, students who withdrew from a course were excluded from the data analysis. The majority of students receiving Pell Grants did not withdraw from a course when failing because final Pell Grant fund disbursement would not occur ($n = 27$). The 11 students receiving Pell Grants that did withdraw from the course were withdrawn by their

instructor per the community college's attendance policy. Students who received Pell Grants in a teacher-paced course compared to a self-paced course scored more B's, C's, and D's as a final grade. The self-paced students receiving Pell Grants were more likely to fail the class when compared to teacher-paced students. Also, teacher-paced students who did not receive a Pell Grant received better grades than self-paced students who did not receive a Pell Grant.

Students receiving Pell Grants did not differ significantly when receiving a letter grade of an A in either a self-paced course or teacher-paced course. Yet, self-paced students were more likely to fail a self-paced course if receiving a Pell Grant. These findings support previous research noting that students who receive Pell Grants were not prepared for college and do not have the study skills to be successful in college (Engle & Tinto, 2008; Sidle & McReynolds, 2009).

Implications of this Study

Results of this research study provide insight into the pacing preferences of traditional and non-traditional community college students. The first three research questions did not show statistical significance. Non-traditional students in a self-paced instructional environment did not receive a higher midterm and final grade compared with traditional students who received self-paced instruction. Non-traditional students in a teacher-paced environment did not receive a higher midterm and final grade compared with traditional students who received teacher-paced instruction. There was also no difference in course completion rates between non-traditional students and traditional students enrolled in either a teacher-paced instructional environment or a self-paced instructional environment. The fifth research question was statistically significant supporting a guided pathway to degree completion in community colleges. Students with higher GPAs and whom did not receive Pell Grant eligibility were more successful in a self-paced

course. This finding could assist administrators in assisting students with lower GPAs and Pell Grant eligibility, those who would not seek out assistance, to choose a program early, design a clear road map for course completion (guided pathway), and provide guidance and support along the way. The qualitative data also resulted in several emerging themes. These themes may provide instructional designers, professors, and administrators with valuable feedback about personal experiences that community college students want and need in an online learning environment. The recommendations support Carroll's Model of School Learning. First, aptitude (time needed to learn) should be student driven. At the beginning of each community college distance learning course, students should be encouraged to complete a standardized course preference survey to indicate how the students want to be paced (teacher-paced vs. self-paced vs. mixed-pace). Once the students choose their pacing preference, the course instructor should complete a student inquiry reviewing current GPA and Pell Grant eligibility. The instructor can then make an informed decision about dividing students into one of three groups. The teacher-paced group will have strict deadlines (no exceptions without proof of mitigating circumstances or a one-on-one meeting with the instructor to request and discuss a change of pace plan). The self-paced group will have very limited deadlines in-line with the college federal financial aid deadlines. For example, in the first 15% of the semester one assignment must be completed (or the student will be dropped from the course) and by the 60% point of the semester instructor's should outline the required number of assignments that should be submitted so the student is not dropped from the course (a best practice may be 25% of assignments from the 15% point to the 60% point of the semester). The mixed-pace group would have the flexibility to complete assignments leading up to a quiz or test at their pace, but the quiz and test should have strict due dates. With these strict due dates, the assignments leading up to the specific quiz and test would

need to be due the same day as the quiz or test for optimal learning (aptitude). While this recommendation may not seem practical, the community college continues to struggle to meet the current needs of students. With the majority of students, no matter the pacing, failing distance learning courses, radical change is necessary. Student preference and student inquiries (review GPA and Pell Grant funding eligibility) need to be considered at the beginning of each course.

Second, opportunity to learn (time available to learn) should match student's available time to learn. Scheduling of classes should be student-oriented. Newly enrolled students follow direction well, register on time, attend classes the first week, and ask questions. Returning students work the system; meaning they try to enroll late, often miss the first day or week of class, and may or may not purchase a textbook for class. Due to these variations in student enrollment, scheduling of classes should promote a mixture of 16 week courses, back-up 14 week courses for returning students who register late, and other varying formats for busy students (i.e., 8 week courses, 4 week courses, and weekend courses).

Third, perseverance (time student is willing to spend learning) relates to student motivation. Students are motivated to learn when the learning environment is relevant to their future career, the professor is present and available, flexible testing options such as an online proctoring website are available, and classmate interaction is incorporated into the distance learning course. Learning opportunities should be direct, organized, and relevant. Students do not want their valuable time to be wasted, or their emails and phone calls to be ignored. The student can and will persevere when the learning environment is meaningful and the professor is supportive of the student's needs.

Fourth, achievement in terms of quality of instructional events is related to course delivery. The distance learning course should be completely available on the first day of class, if

not before, so self-paced students can work ahead and teacher-paced students can stick to strict due dates, or work ahead if they so desire. Students prefer to choose their pace of instruction; therefore, the entire course needs to be available when students have access to it. The instructor controls the pace of the course for each of the three varying paces (teacher-paced, self-paced, mixed-pace) through immediate grading within 48 hours of submission and adding zeros to the gradebook depending on which pace the student chooses. When organizing course content, readings and videos should be grouped together and assignments, quizzes and tests should be grouped together. Instructions for each should be clear (where to find, how to access, and completion instructions). Community college students receiving Pell Grants that enroll in distant learning courses may struggle, as these students are not prepared for college. Instructional designers and instructors must organize the course to assist students that will struggle. The specific course assignments should relate to the student's field of study whenever possible. For example, a student who is pursuing a nursing degree should complete assignments such as case studies, career exploration, and assessments that relate to the profession. Some students already work in their field of choice, incumbent workers, trying to earn a promotion. Other students want to complete assignments that are beneficial to their future career. Student interaction should be promoted weekly through discussion board questions or professor promoted/organized virtual study groups. A live session should occur weekly for students who need assistance (i.e. students with low GPAs, students receiving Pell Grant eligibility, and students who choose to attend). In managing three different paces in one course, a calendar of tasks is important. Students should be encouraged to print the calendar and check off assignments as completed. Instructors should also use the task tool so that once assignments are completed they are checked off automatically. Notification reminder emails should happen weekly for all students even if the email is just a

suggested schedule. These notifications hold teacher-paced students accountable, give self-paced students a reminder of where he or she could be at this point, and reminding mixed-pacing students of required quizzes, tests, and midterms as a pacing benchmark. Students can then compare their calendar of tasks to the automatically generated tasks tool. Finally professors should evaluate whether or not a textbook is necessary for their course. Many students will forgo the cost of a textbook and try to be successful or barely pass to save money. Open Educational Resources (OER) should be encouraged for community college courses whenever possible.

Fifth, achievement in terms of ability to understand instruction relates to distance learning readiness, learning objectives, and clear direction. The student is responsible for prerequisite knowledge, administrators should review distance learning readiness policies to promote student success. A distance learning orientation course should be required of all students, and completion enforced, before completing their first distance learning course. The course should include how to videos related to course navigation and assignment uploads, how to contact the instructor and other students should be clearly defined and available, and examples of exemplary assignments should be included. Community college students struggle with distance learning courses. The professor should include learning objectives/goals for each learning module/activity to assist student progress offering a path through the module/activity. Finally, clear instructions to the point of over instructing is necessary in a distance learning course. Students do struggle in distance learning courses and some will reach out for help while others will not. Reaching these students on their terms (phone, text, email, office hours, and virtual live sessions) offers a learning opportunity for both the professor and students. During these outreach sessions, professors and students can discuss prerequisite skills and information leading to student success including pacing success for each student. While this may sound like advising,

most students never seek out advising. The instructor should schedule one-on-one sessions with each student (or small group sessions) in each of their classes at the beginning and middle of the semester at minimum. The instructor should seek out students who will not seek assistance, offer all students extra credit for attending, and focus recruitment efforts on students with a GPA of less than a 3.0 to participate in these outreach sessions.

Limitations

There are several limitations to this research study. The community college experienced low enrollment in the spring of 2017 resulting in five course sections being cancelled. Due to these cancellations, the research study was extended through the summer of 2017. Spring courses and summer courses are offered on a slightly different schedule. Spring courses run for a maximum of 16 weeks and summer courses run for 10 weeks. While the course work is the same, the students in the spring courses were enrolled for 6 weeks longer than the summer students. The midterm and final exam still required a visit to the testing center on campus. Three additional courses (six sections) were added to the research study during the summer to counter this imbalance in length from the spring and summer courses. Two 5-week course sections and two 10-week course sections were added to the research study in the summer. Also summer school students differ from students that attend the community college during the school year. In the summer, more students seeking a Bachelor's degree take one or more transfer courses during the summer to save money, work ahead in college, or stay on track/retake course credits for the next school year. These students may not be a true representation of the community college students attending in the fall and spring semesters.

External validity may be threatened because convenience sampling was used, which may limit generalizability of the research results to other community colleges. The researcher did

sample courses taught by three other instructors and one outside of the health field. The courses in this study are all transfer courses that are used in the following programs: engineering, architectural and engineering technology, automotive technology, business administration, management, computer aided design, floral design, culinary arts, early childhood development, general studies (transfer), accounting, fire sciences, horticulture technology, human services, information systems technology, paralegal studies, liberal arts, science, social science (teacher preparation, American sign language, pre-social work), administration of justice, and nursing (emergency medical services, health information management, medical laboratory technology, opticianry, respiratory therapy).

Internal validity may be threatened because non-traditional students (173) outnumbered traditional students (96) in this research study. During the 2016 – 2017 school year, 5,390 traditional students were enrolled at the community college and 8,561 nontraditional students were enrolled. This imbalance of students at the community college is similar to the imbalance noted in this research study. These imbalances may vary depending on the location of the community college (urban, suburban, or rural).

Other limitations to note were timing of preference survey administration as well as personal interviews and student withdrawals. The preference surveys were administered at the midterm and end of each course at the time of the midterm and final exam. These two exams cause high stress meaning students may have ignored the surveys or completed them in a stressed mindset. The results may have been different if students received the pacing surveys after the midterm and final exams, or even a month after the exams. Personal interviews were completed at the end of the semester before exam week. Again, this can be a high stress time for students which may explain the low participation rate. As for the self-paced students, a few

students may have already completed the course by the end of the semester and were focused on other courses.

Future Research

Future research is needed to explore pacing in face-to-face and hybrid classes, quality of instructional environment, time needed to learn, tone of survey responses in varying classroom formats of pacing, and instructor preferences in teaching formats. Face-to-face classes and hybrid classes could also offer variable pacing formats to meet the needs of both traditional and non-traditional students. These pacing formats could offer busy students or financially unstable students a flexible attendance policy to attend class from a far at a time or place that suits their schedule. Students determine the amount of help needed or time spent in the face-to-face classroom. A mirror image of the face-to-face class could also be available online. Future research should also explore the difficulty of course content and whether difficult course content plays a role in student preference and achievement in either a teacher-paced or self-paced course. A final capstone course may not be suitable for self-pacing due to difficulty, whereas an introductory general studies course or elective course may be an ideal self-paced course. From a quality of instructional design standpoint, scaffolding of distance learning readiness needs to occur. For example, students new to distance learning could be paired with a student mentor who is available to answer questions and guide the student through their first online course. Future research could also incorporate the rubric standards for course development to insure the instructional environment is conducive to community college student needs. Time needed to learn should also be researched to determine if traditional and non-traditional students in teacher-paced and self-paced courses need varying time to learn (i.e. weekend courses, four week courses, 8 week courses, 10 week courses, 12 week courses, 16 week courses) and if this time is

different because of responsibilities outside the classroom. The tone of student responses in a teacher-paced course and a self-paced course should also be explored. In this study, the tone was very different between a teacher-paced students (more rigid and disciplined) and self-paced students (more creative and free flowing). Finally instructor preferences of teaching either a teacher-paced course or self-paced course should be explored. Professors in this study provided unsolicited comments about the increased amount of time the self-paced course required of them.

Conclusions

This study investigated whether differences existed between community college non-traditional students and traditional students in either a teacher-paced or self-paced instructional environment. Achievement and course completion outcomes, supporting the guided pathway approach to navigating the community college environment, were important to this research study.

The study was grounded in Carroll's Model of School Learning, which has evolved into mastery learning. The five elements of Carroll's Model of School Learning relate to either time needed to learn or time spent in learning (the learning environment). The ratio of time needed to learn and time actually spent learning was a thread throughout this research study and mentioned over and over again in the preference survey responses of students. The study provides support for varying pacing strategies that are student driven in the community college environment.

In conclusion, students in a teacher-paced environment want a teacher-paced course (familiarity) and students in a self-paced environment want a self-paced course. Age mattered the most in preference choices when reviewing responses from self-paced students. Self-paced traditional and non-traditional students prefer a self-paced course at the beginning of the semester and almost unanimously prefer a self-paced course at the end of the semester. The non-

traditional students especially want self-paced courses to help balance work and family obligations. These students can be successful in a self-paced course if GPA and Pell Grant eligibility are taken into consideration. Just because a student wants a self-paced course does not mean he or she can be successful in a self-paced course. A self-paced course should be reserved for higher functioning students (GPA of 3.0 to 4.0) and who are not receiving a Pell Grant. Hopefully, future research will continue to explore the relationship between community college non-traditional students and traditional students pacing preferences, GPA, and Pell Grant eligibility and how each can be successful through varying pacing opportunities in distance learning courses.

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APPENDIX A

RECRUITMENT MATERIALS

DISTANCE EDUCATION EDUCATOR RECRUITMENT EMAIL

Good Afternoon,

I would like to invite you to join me in an exciting research opportunity for the spring semester. I am currently pursuing my Ph.D. in Instructional Design and Technology at Old Dominion University. I am looking to recruit online educators like yourself, who are teaching two identical online sections of a for-credit community college course this spring. As part of this research opportunity, I would be asking you to setup each of your online courses to be identical except one section would have strict due dates throughout the semester and the other section would be considered self-paced. The self-paced section would still have suggested due dates but more flexibility than a teacher-paced course.

The purpose of my study is to investigate whether a significant difference exists between non-traditional students and traditional students in either a teacher-paced or self-paced instructional environment in terms of two dependent variables: achievement and course completion outcomes. I am also interested in whether a significant difference exists between student preference in completing either a self-paced course or teacher-paced course in a community college setting. I may invite a few of your students to join me online at the end of the semester for a focus group to explore student pacing preferences during the spring semester.

I hope you find my research study interesting and will volunteer to participate. I will collect midterm exam grades, final exam grades, and midterm and final course grades from each of your courses. Your students will also be entered into a drawing to win one of four \$50 gift cards.

Please let me know if you have questions. I look forward to hearing from you.

Sincerely,

Robin Shepherd

Robin D. Shepherd, M.S. CHES
Associate Professor & Dept. Head of Physical Education

Reynolds Community College
Downtown Academic Campus
700 E. Jackson St.
Richmond, VA 23219

Phone: (804) 523-5527

Email: rshepherd@reynolds.edu

FOLLOW-UP PARTICIPATING PROFESSOR EMAIL

Good Afternoon,

I am so excited that you will be joining me in an exciting research opportunity for the spring semester. I want to remind you that each of your online courses will be created to be identical to each other except for the pacing structure. The teacher-paced section would have strict due dates throughout the semester and the self-paced section would have suggested due dates. To adhere to federal financial aid guidelines the self-paced section would need to complete at least one assignment the first week not to be dropped due to non-attendance and 60% of the course to include the midterm by week 8. Students will also be invited to participate in an interview at the end of the semester.

I will be gathering the following information from the Student Information System (SIS): class roster, student age, financial aid status, and current grade point average (GPA). I will also send your students an invitation to participate in the study and the end of the semester focus group.

I will need the following information from you:

- Section Classification (teacher-paced vs. self-paced)
- Midterm Test Grade
- Midterm Letter Grade and Percentage
- Final Exam Grade
- Final Letter Grade and Percentage

Students who participate in the study (including the interview) will be entered into a drawing to win one of four \$50 gift cards. Please let me know if you have questions. I look forward to working with you this semester.

Sincerely,

Robin Shepherd

Robin D. Shepherd, M.S. CHES
Associate Professor & Dept. Head of Physical Education

Reynolds Community College
Downtown Academic Campus
700 E. Jackson St.
Richmond, VA 23219

Phone: (804) 523-5527
Email: rshepherd@reynolds.edu

STUDENT INTERVIEW RECRUITMENT EMAIL – TEACHER-PACED

Good morning,

I would like to invite you to participate in an interview about your experience in a teacher-paced class this semester. I am recruiting 8 – 10 students from your class. To participate we will use Blackboard Collaborate to discuss topics such as your favorite aspect of taking an online class, who influences your study habits, and pacing of your class. The interview will occur once for 15 – 20 minutes.

I look forward to hearing from you.

Thank you for your consideration!

Robin

Robin D. Shepherd, M.S. CHES

Assistant Professor & Dept. Head of Physical Education

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1651 East Parham Road

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Phone: [\(804\) 523-5527](tel:8045235527)

Email: rshepherd@reynolds.edu

STUDENT INTERVIEW RECRUITMENT EMAIL – SELF-PACED

Good morning,

I would like to invite you to participate in an interview about your experience in a teacher-paced class this semester. I am recruiting 8 – 10 students from your class to be interviewed. To participate we will use Blackboard Collaborate to discuss topics such as your favorite aspect of taking an online class, who influences your study habits, and pacing of your class. The interview will occur once and take about 15 minutes.

Thank you for your consideration!

Robin

Robin D. Shepherd, M.S. CHES

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Email: rshepherd@reynolds.edu

STUDENT INTERVIEW FOLLOW-UP EMAIL

Good morning,

Thank you for agreeing to participate in an interview about your experience this semester in an online course. Attached you will find a copy of an informed consent form. This form must be signed and returned to myself (rshepherd@reynolds.edu) before participating in the focus group.

The interview will occur on (insert date and time here). Please use the following link to join us as a guest: <https://us.bbcollab.com/guest/D542024809F1ACB2980349AB37FA1229>

You will be asked to provide your name when you login as a guest.

If you have any questions do not hesitate to contact me.

Thank you for agreeing to participate in the interview. I look forward to meeting with you online!

Robin

Robin D. Shepherd, M.S. CHES

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1651 East Parham Road

Richmond, VA 23228

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Email: rshepherd@reynolds.edu

STUDENT INTERVIEW RECRUITMENT EMAIL – TEACHER-PACED

Good morning,

I would like to invite you to participate in an interview about your experience in a teacher-paced class this semester. I am recruiting 8 – 10 students from your class to be interviewed. To participate we will use Blackboard Collaborate to discuss topics such as your favorite aspect of taking an online class, who influences your study habits, and pacing of your class. The interview will occur once and take about 15 minutes.

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STUDENT INTERVIEW FOLLOW-UP EMAIL

Good morning,

Thank you for agreeing to participate in an interview about your experience this semester in an online course. Attached you will find a copy of an informed consent form. This form must be signed and returned to myself (rshepherd@reynolds.edu) before participating in the focus group.

The interview will occur on (insert date and time here). Please use the following link to join us as a guest: <https://us.bbcollab.com/guest/D542024809F1ACB2980349AB37FA1229>

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APPENDIX B

INFORMATION SHEETS AND INFORMED CONSENT

Research Opportunity!

You are being asked to participate in a research study investigating differences between non-traditional students and traditional students enrolled in either a teacher-paced or self-paced instructional environment. You are being asked to participate in this study because you are a community college student, can be characterized as either a non-traditional student or traditional student, and are currently enrolled in at least one online course at the community college level.

DESCRIPTION OF RESEARCH STUDY

The study addresses the following research questions:

1. In a self-paced instructional environment do non-traditional students receive a higher midterm and final grade compared with traditional students who receive self-paced instruction?
2. In a teacher-paced instructional environment do non-traditional students receive a higher midterm and final grade compared with traditional students who receive teacher-paced instruction?
3. What is the difference, if any, in course completion rates between non-traditional students and traditional students enrolled in either a teacher-paced instructional environment or a self-paced instructional environment?
4. What is the difference, if any, between non-traditional students' and traditional students' preferences in completing either a self-paced course or a teacher-paced course?
5. What is the difference in performance, if any, between students enrolled in a self-paced or teacher-paced instructional environment when considering current grade point average and Pell Grant funding eligibility?

As a participant in this study, you will complete the online course that you are currently enrolled and I will monitor your assignment grades up through midterm including your midterm grade and assignment grades through the final exam including your final course grade. I will be analyzing this data as I research various pacing strategies and the effects they have on achievement and course completion rates. You may also be chosen to participate in an interview at the end of the semester.

COSTS AND PAYMENTS

There will be no costs to you for participation in this research study. A random drawing for four \$50 gift cards will occur at the end of the semester.

For more information please contact Robin Shepherd at rshepherd@reynolds.edu

INFORMATION SHEET

OLD DOMINION UNIVERSITY

PROJECT TITLE

Exploring The Effects Of Pacing In A Community College Setting

INTRODUCTION

You are being asked to participate in a research study investigating differences between non-traditional students and traditional students enrolled in either a teacher-paced or self-paced instructional environment. You are being asked to participate in this study are a community college student, can be characterized as either an non-traditional students or traditional students, and are currently enrolled in at least one online course.

You are being asked to participate because you are currently enrolled in an online course at the community college level.

The purpose of this form is to give you information that may affect your decision whether to say YES or NO to the use of your data collected during your participation in this study.

RESEARCHERS

Responsible Principal Investigator:

John Baaki, PhD, Assistant Professor, Instructional Design & Technology, STEM Education & Professional Studies, Old Dominion University

Investigator:

Robin Shepherd, Graduate Student, Instructional Design & Technology, STEM Education & Professional Studies, Old Dominion University

DESCRIPTION OF RESEARCH STUDY

The study addresses the following research questions:

1. In a self-paced instructional environment do non-traditional students receive a higher midterm and final grade compared with traditional students who receive self-paced instruction?
2. In a teacher-paced instructional environment do non-traditional students receive a higher midterm and final grade compared with traditional students who receive teacher-paced instruction?
3. What is the difference, if any, in course completion rates between non-traditional students and traditional students enrolled in either a teacher-paced instructional environment or a self-paced instructional environment?
4. What is the difference, if any, between non-traditional students' and traditional students' preferences in completing either a self-paced course or a teacher-paced course?

5. What is the difference in performance, if any, between students enrolled in a self-paced or teacher-paced instructional environment when considering current grade point average and Pell Grant funding eligibility?

If you agree to take part in this study, you will complete the online course that you are currently enrolled and I will monitor your assignment grades up through midterm including your midterm grade and assignment grades through the final exam including your final course grade. I will be analyzing this data as I research various pacing strategies and the effects they have on achievement and course completion rates. You may also be chosen to participate in an interview at the end of the semester.

RISKS AND BENEFITS:

There is little to no risk involved in your participation in this study. Nevertheless, the researchers have tried to reduce potential risks pertaining to the collection of information.

COSTS AND PAYMENTS

There will be no costs to you for participation in this research study. A random drawing for four \$50 gift cards will occur at the end of the semester.

NEW INFORMATION

If the researchers find new information during this study that would reasonably change your decision about participating, then they will inform you.

CONFIDENTIALITY

All information obtained about you in this study is strictly confidential unless disclosure is required by law. The results of this study may be used in reports, presentations and publications, but the researcher will not identify you.

WITHDRAWAL PRIVILEGE

It is OK for you to say NO to us collecting and using your data for this study. Even if you say YES now, you are free to say NO later, and withdraw your data from inclusion in this study at any time. Your decision will not affect your relationship with J. Sargeant Reynolds Community College or your course instructor.

QUESTIONS

If you say YES, then your participation in this study does not waive any of your legal rights. However, in the event of harm arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in any

research project, you may contact Dr. John Baaki at jbaaki@odu.edu or at 757-683-5491 or Dr. Ginger Watson at gwatson@odu.edu or at 757-683-3246, or Dr. Petros Katsioloudis, Chair of the Darden College of Education Human Subjects Review Committee, Old Dominion University, at pkatsiol@odu.edu, who will be glad to review the matter with you.

INFORMED CONSENT DOCUMENT (INTERVIEW)

OLD DOMINION UNIVERSITY

PROJECT TITLE

Exploring The Effects Of Pacing In A Community College Setting

INTRODUCTION

You are being asked to participate in a research study investigating whether a significant difference exists between non-traditional students and traditional students in either a teacher-paced or self-paced instructional environment in terms of achievement and course completion outcomes. Also of interest is whether a significant difference exists between student preference in completing either a self-paced course or teacher-paced course in a community college setting. You are being asked to participate because you are currently enrolled as a community college student in an online course. The purposes of this form is 1) to give you information that may affect your decision whether to say YES or NO to the use of your data collected during your participation in this study, and 2) to record the consent of those who say YES to allowing the researchers to use and analyze the data collected in this study.

RESEARCHERS

Responsible Principal Investigator:

John Baaki, PhD, Assistant Professor, Instructional Design & Technology, STEM Education & Professional Studies, Old Dominion University

Investigator:

Robin Shepherd, Graduate Student, Instructional Design & Technology, STEM Education & Professional Studies, Old Dominion University

DESCRIPTION OF RESEARCH STUDY

The study addresses the following research questions:

1. In a self-paced instructional environment do non-traditional students receive a higher midterm and final grade compared with traditional students who receive self-paced instruction?
2. In a teacher-paced instructional environment do non-traditional students receive a higher midterm and final grade compared with traditional students who receive teacher-paced instruction?
3. What is the difference, if any, in course completion rates between non-traditional students and traditional students enrolled in either a teacher-paced instructional environment or a self-paced instructional environment?
4. What is the difference, if any, between non-traditional students and traditional students preferences in completing either a self-paced course or a teacher-paced course?

5. What is the difference in performance, if any, between students enrolled in a self-paced or teacher-paced instructional environment when considering current grade point average and Pell Grant funding eligibility?

If you agree to take part in this study, you will complete the online course that you are currently enrolled and I will monitor your assignment grades up through midterm including your midterm grade and assignment grades through the final exam including your final course grade. I will be analyzing this data as I research various pacing strategies and the effects they have on achievement and course completion rates. You may also be chosen to participate in a focus group at the end of the semester. The focus group will be recorded for data analysis.

RISKS AND BENEFITS:

There is little to no risk involved in your participation in this study. Nevertheless, the researchers have tried to reduce potential risks pertaining to the collection of information.

COSTS AND PAYMENTS

There will be no costs to you for participation in this research study. A random drawing for four \$50 gift cards will occur at the end of the semester.

NEW INFORMATION

If the researchers find new information during this study that would reasonably change your decision about participating, then they will inform you.

CONFIDENTIALITY

All information obtained about you in this study is strictly confidential unless disclosure is required by law. The results of this study may be used in reports, presentations and publications, but the researcher will not identify you.

WITHDRAWAL PRIVILEGE

It is OK for you to say NO to us collecting and using your data for this study. Even if you say YES now, you are free to say NO later, and withdraw your data from inclusion in this study at any time. Your decision will not affect your relationship with Old Dominion University or your course instructor.

QUESTIONS

If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in any

research project, you may contact Dr. John Baaki at jbaaki@odu.edu or at 757-683-5491 or Dr. Ginger Watson at gwatson@odu.edu or at 757-683-3246, or Dr. Petros Katsioloudis, Chair of the Darden College of Education Human Subjects Review Committee, Old Dominion University, at pkatsiol@odu.edu, who will be glad to review the matter with you.

VOLUNTARY CONSENT

By signing this form, you are saying several things. You are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, then the researchers should be able to answer them:

Dr. John Baaki
757-683-5491

Dr. Ginger Watson
757-683-3246

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should contact Dr. Petros Katsioloudis, Chair of the Darden College of Education Human Subjects Review Committee, Old Dominion University, at pkatsiol@odu.edu.

And importantly, by signing below, you are telling the researcher YES, that you agree to allow the collection and use of your data in this study.

_____	_____	_____
Participant's Printed Name	Participant's Signature	Date
_____	_____	_____
Parent / Legally Authorized Representative's Printed Name (If participant is a minor or incapacitated adult)	Parent / Legally Authorized Signature	Date

INVESTIGATOR'S STATEMENT

I certify that I have explained to this participant the nature and purpose of this research, including benefits, risks, costs, and any experimental procedures. I have described the rights and protections afforded to human subjects and have done nothing to pressure, coerce, or falsely entice this subject into participating. I am aware of my obligations under state and federal laws, and promise compliance. I have answered the participant's questions and have encouraged him/her to ask additional questions at any time during the course of this study. I have witnessed the above signature(s) on this consent form.

_____	_____	_____
Investigator's Printed Name	Investigator's Signature	Date

APPENDIX C

PREFERENCE SURVEY

Section 1: Demographics

Please choose the response that best fits you for each question. This information is requested for the purpose of analyzing demographic trends.

Student ID#: _____

How would you characterize your current age?

- ☐ 18 to 21 years old
☐ 22 years old or older

What is the highest degree or level of education that you have completed?

- ☐ Less than high school
☐ High school graduate or equivalency
☐ Some college
☐ Associate's Degree
☐ Bachelor's Degree
☐ Master's Degree
☐ Doctoral Degree
☐ Professional degree (MD, JD, etc.)

What is your current Grade Point Average (GPA)? _____

Section 2:

Please read each question carefully. Responses that include specific examples will provide the most useful data.

1. What were your initial thoughts this semester when you learned you would be completing a (self-paced/teacher-paced) course.

2. Reflect on the positive experiences of completing a (self-paced/teacher paced) course.

3. Reflect on the negative experiences of completing a (self-paced/teacher paced) course.

4. Did your preferences for completing a (self-paced/teacher paced) change as the semester progressed?

5. If given a choice when completing future distance learning courses, would you choose a self-paced or teacher paced course? Explain.

APPENDIX D

COMPILATION OF PREFERENCE SURVEY RESPONSES

What is the highest degree of level of education that you have completed?

Course Pace	Survey	Highest Level of Education	Totals
Self-Paced	Midterm	High School Graduate	12
		Some College	32
		Associate's Degree	3
		Bachelor's Degree	9
		Master's Degree	1
Self-Paced	Final	High School Graduate	4
		Some College	17
		Associate's Degree	1
		Bachelor's Degree	5
		Master's Degree	1
Teacher-Paced	Midterm	High School Graduate	13
		Some College	31
		Associate's Degree	0
		Bachelor's Degree	11
		Master's Degree	0
Teacher-Paced	Final	High School Graduate	13
		Some College	40
		Associate's Degree	2
		Bachelor's Degree	16
		Master's Degree	1

Are you eligible to receive a Pell Grant? Are you currently receiving a Pell Grant?

Pell Grant Eligibility	Survey	Totals	Pell Grants Received	Survey	Totals
Self-Paced Midterm	Yes	17	Self-Paced Midterm	Yes	13
	No	16		No	37
	Not Sure	18			
Self-Paced Final	Yes	9	Self-Paced Final	Yes	6
	No	9		No	19
	Not Sure	8			
Teacher-Paced Midterm	Yes	20	Teacher-Paced Midterm	Yes	16
	No	11		No	27
	Not Sure	13			

Teacher-Paced Final	Yes	20	Teacher-Paced Final	Yes	18
	No	27		No	48
	Not Sure	20			

What is your current grade point average (GPA)?

Midterm	GPA	Total	Final	GPA	Total
Self-Paced Midterm	A (3.5-4.0)	20	Self-Paced Final	A (3.5-4.0)	10
	B (2.5-3.4)	14		B (2.5-3.4)	8
	C (1.5-2.4)	5		C (1.5-2.4)	3
	D (1.4-1.0)	1		D (1.4-1.0)	0
	F (below 1.0)	0		F (below 1.0)	0
	Unsure	7		Unsure	1
Teacher-Paced Midterm	A (3.5-4.0)	16	Teacher-Paced Final	A (3.5-4.0)	27
	B (2.5-3.4)	17		B (2.5-3.4)	25
	C (1.5-2.4)	2		C (1.5-2.4)	7
	D (1.4-1.0)	0		D (1.4-1.0)	0
	F (below 1.0)	0		F (below 1.0)	0
	Unsure	4		Unsure	7

Section 2 Question #1 Midterm Survey: What were your initial thoughts this semester when you learned you would be completing a self-paced course? Final Survey: As you reflect on the entire semester, what were your initial thoughts when you learned you would be completing a self-paced course?

	Self-Paced	Teacher-Paced
Midterm Survey Positive Thoughts	18 to 21 years old: 8 22 years old or older: 26	18 to 21 years old: 5 22 years old or older: 21
Midterm Survey Negative Thoughts	18 to 21 years old: 5 22 years old or older: 7	18 to 21 years old: 4 22 years old or older: 10

Final Survey Positive Thoughts	18 to 21 years old: 8 22 years old or older: 12	18 to 21 years old: 16 22 years old or older: 28
Final Survey Negative Thoughts	18 to 21 years old: 1 22 years old or older: 4	18 to 21 years old: 6 22 years old or older: 16

Section 2 Question #2 Reflect on the positive experiences of completing a self-paced/teacher-paced course.

	Self-Paced	Teacher-Paced
(1.1) work	18 to 21 years old: 1 22 years old or older: 4	18 to 21 years old: 0 22 years old or older: 9
(1.2) family	18 to 21 years old: 0 22 years old or older: 3	18 to 21 years old: 0 22 years old or older: 0
(1.3) personal health	18 to 21 years old: 1 22 years old or older: 4	18 to 21 years old: 1 22 years old or older: 2
(2.1) professor availability	18 to 21 years old: 0 22 years old or older: 0	18 to 21 years old: 2 22 years old or older: 5
(2.2) encouragement	18 to 21 years old: 0 22 years old or older: 1	18 to 21 years old: 0 22 years old or older: 1
(2.3) forgiving	18 to 21 years old: 0 22 years old or older: 0	18 to 21 years old: 0 22 years old or older: 1
(2.4) content organization	18 to 21 years old: 1 22 years old or older: 3	18 to 21 years old: 13 22 years old or older: 20
(3.2) study groups	18 to 21 years old: 0 22 years old or older: 0	18 to 21 years old: 0 22 years old or older: 1
(3.3) consistency in pacing	18 to 21 years old: 9	18 to 21 years old: 7

	22 years old or older: 20	22 years old or older: 13
(3.4) responsibility	18 to 21 years old: 12	18 to 21 years old: 8
	22 years old or older: 7	22 years old or older: 28

Section 2 Question #3 Reflect on the Negative experiences of completing a self-paced/teacher-paced course.

	Self-Paced	Teacher-Paced
(1.1) work	18 to 21 years old: 0	18 to 21 years old: 1
	22 years old or older: 2	22 years old or older: 3
(1.2) family	18 to 21 years old: 0	18 to 21 years old: 0
	22 years old or older: 2	22 years old or older: 2
(1.3) personal health	18 to 21 years old: 1	18 to 21 years old: 1
	22 years old or older: 0	22 years old or older: 1
(1.4) finances	18 to 21 years old: 0	18 to 21 years old: 0
	22 years old or older: 0	22 years old or older: 3
(2.1) professor availability	18 to 21 years old: 1	18 to 21 years old: 3
	22 years old or older: 3	22 years old or older: 8
(2.2) encouragement	18 to 21 years old: 0	18 to 21 years old: 0
	22 years old or older: 1	22 years old or older: 0
(2.3) forgiving	18 to 21 years old: 0	18 to 21 years old: 0
	22 years old or older: 0	22 years old or older: 3
(2.4) content organization	18 to 21 years old: 3	18 to 21 years old: 13
	22 years old or older: 6	22 years old or older: 12

(3.1) face-to-face interaction	18 to 21 years old: 0	18 to 21 years old: 1
	22 years old or older: 2	22 years old or older: 8
(3.3) consistency in pacing	18 to 21 years old: 3	18 to 21 years old: 2
	22 years old or older: 11	22 years old or older: 5
(3.4) responsibility	18 to 21 years old: 9	18 to 21 years old: 5
	22 years old or older: 16	22 years old or older: 15

Section 2 Question #4 Midterm Survey Did your preferences for completing a self-paced/teacher-paced course change as the semester progressed?

Self-Paced Course	Survey	Totals	Teacher-Paced Course	Survey	Totals
18 to 21 years old	Yes	3	18 to 21 years old	Yes	3
	No	11		No	6
22 years old or older	Yes	10	22 years old or older	Yes	9
	No	27		No	21

Section 2 Question #4 Final Survey Did your preferences for completing a self-paced/teacher-paced course change as you reflect on the entire semester?

Self-Paced Course	Survey	Totals	Teacher-Paced Course	Survey	Totals
18 to 21 years old	Yes	3	18 to 21 years old	Yes	7
	No	7		No	14
	Not Sure			Not Sure	
22 years old or older	Yes	1	22 years old or older	Yes	6
	No	15		No	34

Section 2 Question #5 Midterm Survey If given a choice when completing future distance learning courses, would you choose a self-paced course? Explain.

Self-Paced Course	Survey	Totals
18 to 21 years old	Self-Paced	11
	Teacher-Paced	2
22 years old or older	Self-Paced	32
	Teacher-Paced	5

Section 2 Question #5 Final Survey If given a choice when completing future distance learning courses, would you choose a self-paced course? Explain.

Self-Paced Course	Survey	Totals
18 to 21 years old	Self-Paced	7
	Teacher-Paced	1
22 years old or older	Self-Paced	15
	Teacher-Paced	0

Section 2 Question #5 Final Survey If given a choice when completing future distance learning courses, would you choose a teacher-paced course? Explain.

Teacher-Paced Course	Survey	Totals
18 to 21 years old	Self-Paced	3
	Teacher-Paced	6
22 years old or older	Self-Paced	1
	Teacher-Paced	7

Section 2 Question #5 Final Survey If given a choice when completing future distance learning courses, would you choose a teacher-paced course? Explain.

Teacher-Paced Course	Survey	Totals
18 to 21 years old	Self-Paced	9
	Teacher-Paced	10
	Combination of both	3
22 years old or older	Self-Paced	15
	Teacher-Paced	22
	Combination of both	2

APPENDIX E

INTERVIEW TEMPLATE

WELCOME

Thanks for agreeing to be part of this interview. We appreciate your willingness to participate.

INTRODUCTIONS

Moderator – Robin Shepherd, Graduate Student, Instructional Design & Technology, STEM Education & Professional Studies, Old Dominion University

PURPOSE OF INTERVIEW

The purpose of this interview is to discuss student preferences in navigating a self-paced/teacher-paced community college course. We need your input and want you to share your honest and open thoughts with us.

GROUND RULES

1. WE WANT YOU TO DO THE TALKING.

2. THERE ARE NO RIGHT OR WRONG ANSWERS

Every person's experiences and opinions are important.

3. WHAT IS SAID IN THIS ROOM STAYS HERE

We want you to feel comfortable sharing if sensitive issues come up.

4. WE WILL BE RECORDING THE SESSION

We want to capture everything you have to say. We don't identify anyone by name in our study. You will remain anonymous.

Let's Get Started.

Engagement Questions:

1. What is your favorite aspect of taking an online course?
2. Why do you think someone would choose to take an online course instead of a face-to-face course?

Exploration Questions:

3. Who in particular has influenced your study habits? Please explain.
4. Do you prefer to participate in a course where the professor determines the pace at which you learn? Please explain.
5. Do you prefer to participate in a course where you determine the pace at which you learn? Please explain.
6. Did you find that the pacing of the course used in this study helped you in other courses that you were taking this semester?
7. Did you find that the withdrawal policy for the course was clear?
8. How do you recover when you fall behind in a course?

Exit Question:

9. What else should I have asked you?"

Probing questions if needed:

1. Can you talk about that more?
2. Help me understand what you mean?
3. Can you give an example?

Thank you for participating in the interview. Again your responses will be kept confidential.

APPENDIX F

INTERVIEW TRANSCRIPTS

Interview #1 (participant audio did not work, all responses were typed in chat)

Interviewer: Robin Shepherd

Interviewee: Self-Paced, Non-Traditional Student

Date: April 25, 2017

Time: 6:00 p.m.

Location: Blackboard Collaborate

Length of interview: 8 minutes 53 seconds

WELCOME

Thanks for agreeing to be part of this interview. We appreciate your willingness to participate.

INTRODUCTIONS

Moderator – Robin Shepherd, Graduate Student, Instructional Design & Technology, STEM Education & Professional Studies, Old Dominion University

PURPOSE OF INTERVIEW

The purpose of this interview is to discuss student preferences in navigating a self-paced/teacher-paced community college course. We need your input and want you to share your honest and open thoughts with us.

GROUND RULES

1. WE WANT YOU TO DO THE TALKING.

2. THERE ARE NO RIGHT OR WRONG ANSWERS

Every person's experiences and opinions are important.

3. WHAT IS SAID IN THIS ROOM STAYS HERE

We want you to feel comfortable sharing if sensitive issues come up.

4. WE WILL BE RECORDING THE SESSION

We want to capture everything you have to say. We don't identify anyone by name in our study. You will remain anonymous.

Interviewer: “Let’s Get Started. Okay there are nine questions. The first question is what is your favorite aspect of taking an online course? Take your time writing/typing your answer. I will probably read it back since we are recording this session, but take your time I am looking for your favorite aspect of taking an online course.”

Participant Response: “Alright your response says that, “I can do the work on my time whether it’s at work or at home.”

Interviewer: “The second question why do you think someone would choose to take an online course instead of a face-to-face course?”

Participant Response: Your response, “I know for myself, a lot of the classes are during the day which do not fit my schedule so that is why I picked online classes.”

Interviewer: “The third question who in particular has influenced your study habits? Please explain.”

Participant Response: Alright your response is, “my husband he always makes sure that I have time to study and do my work.”

Interviewer: “The next question do you prefer to participate in a course where the professor determines the pace at which you learn? Please explain.”

Participant Response: “Could you repeat the question?”

Interviewer: “Sure so the question is do you prefer to participate in a course where the professor determines the pace at which you learn?”

Participant Response: Your response, “No, I enjoy working and learning at my own pace. I did take one class on campus and I did enjoy it, but with my anxiety I prefer to do the course alone.”

Interviewer: “So the next question is do you prefer to participate in a course where you determine the pace at which you learn? Please explain.”

Participant Response: I see a response of “yes”.

Interviewer: “Could you please explain? Okay, I’ll let you keep typing.”

Participant Response: Your response, “Yes, it allows me to do work. If I need to walk away and come back later and finish.”

Interviewer: “The next question did you find that the pacing of the course used in this study helped you in other courses that you were taking this semester?”

Participant Response: Your response, “Yes, I was able to work ahead in your class which I really enjoyed. I have another class and she does not post the assignments until Sunday night. There are days that allow me to do work which I like to be ahead in my classes.”

Interviewer: “So you felt with a self-paced class you could get ahead if you needed to, correct?”

Participant Response: “Yes.”

Interviewer: Okay.

Interviewer: “So the next question, did you find that the withdrawal policy for the course was clear?”

Participant Response: “Yes, you are very clear in everything that had to do with our class.”

Interviewer: “The next question, we have two more questions, how do you recover when you fall behind in a course?”

Participant Response: Your response, “I struggle that is why I like your class it allowed me to work ahead. I also found it hard to get motivated once I have fallen behind.”

Interviewer: “So if you do fall behind in the class, is there anything that you usually do to try to catch-up?”

Participant Response: Alright, your response, “I am able to get the work done, but it is not at one hundred percent.”

Interviewer: “And the last question is an exit question asking if there is anything else that I should have asked you that I did not ask you?”

Participant Response: Your response was, “No”.

Interviewer: “I want to thank you for participating in our interview and again your responses will be kept confidential. I am going to stop our recording.”

Interview #2

Interviewer: Robin Shepherd

Interviewee: Teacher-Paced, Non-Traditional Student

Date: May 2, 2017

Time: 6:00 p.m.

Location: Blackboard Collaborate

Length of interview: 4 minutes 27 seconds

WELCOME

Thanks for agreeing to be part of this interview. We appreciate your willingness to participate.

INTRODUCTIONS

Moderator – Robin Shepherd, Graduate Student, Instructional Design & Technology, STEM Education & Professional Studies, Old Dominion University

PURPOSE OF INTERVIEW

The purpose of this interview is to discuss student preferences in navigating a self-paced/teacher-paced community college course. We need your input and want you to share your honest and open thoughts with us.

GROUND RULES

1. WE WANT YOU TO DO THE TALKING.

2. THERE ARE NO RIGHT OR WRONG ANSWERS

Every person's experiences and opinions are important.

3. WHAT IS SAID IN THIS ROOM STAYS HERE

We want you to feel comfortable sharing if sensitive issues come up.

4. WE WILL BE RECORDING THE SESSION

We want to capture everything you have to say. We don't identify anyone by name in our study. You will remain anonymous.

Interviewer: "The first question, what is your favorite aspect of taking an online course?"

Participant Response: "Um, it's easier for my life (laughs). I really, um, the online actually works because I have a family that I care for and I am working full-time so it helps to do online courses."

Interviewer: "Great so why do you think someone would choose to take an online course instead of a face-to-face course?"

Participant Response: "Um, I guess to work at your own pace. I mean, you still have um deadlines to meet like every Sunday night we had to make sure our assignments were in, but it gives you the whole week to actually get those assignments done on your time."

Interviewer: "Good, who in particular has influenced your study habits? Please explain."

Participant Response: “Um, I think it’s just different ways that I have learned to do my own study habits actually. I have a Bachelor’s degree already so now that I am older and going back to school I think I just needed help with learning how to do things differently than I did my first time around.”

Interviewer: “What do you think that you did differently?”

Participant Response: “Um, I actually paid for myself and actually carved the time out to actually study and not procrastinate and then try to study everything at one time.”

Interviewer: “Good, so do you prefer to participate in a course where the professor determines the pace at which you learn?”

Participant Response: “Yes.”

Interviewer: “Why do you say that?”

Participant Response: “Um, because if you wait for me (laughing) to say I’ll do it this day or that day, I’ll keep pushing the date back, the due date back. So if I know that the teacher is giving me the date to complete it I know that it has to be completed by that time.”

Interviewer: “Right, for this next question you kind of already answered you prefer to participate in a course where you determine the pace at which you learn?”

Participant Response: “Um, no I’d rather the teacher.”

Interviewer: “Okay you liked having those firm due dates?”

Participant Response: “Yes.”

Interviewer: “So did you find that the pacing of the course used in this study helped you in other courses that you were taking this semester?”

Participant Response: “Yes, I took two online courses this semester actually.”

Interviewer: “Good, and you think the pacing of the course that you are currently in which is part of this study helps you in your other courses?”

Participant Response: “Yes.”

Interviewer: “How would you say it helps?”

Participant Response: “Um, just that I know all of that for both classes needed to be done about the same time the due dates. So I would just pace myself in the beginning of the week. So like for example Sunday, Monday, and Tuesday probably do one class and Wednesday, Thursday, Friday I would do another classes assignments. So by the time the weekend comes I’m not really doing assignments. It’s more studying and reading my books.”

Interviewer: “Good, did you find that the withdrawal policy for the course was clear?”

Participant Response: “Yes.”

Interviewer: “How would you recover when you fall behind in a course?”

Participant Response: “Um, I think I would speak with the professor actually to see if I can have another day or two to catch up.”

Interviewer: “Okay those were my questions for you. What else should I have asked you?”

Participant Response: “No, I think you hit everything.”

Interviewer: “Thank you for participating. Again your responses will be kept confidential.”

Interview #3

Interviewer: Robin Shepherd

Interviewee: Teacher-Paced, Non-Traditional Student

Date: July 18

Time: 12:00 p.m.

Location: Blackboard Collaborate

Length of interview: 7 minutes 21 seconds

WELCOME

Thanks for agreeing to be part of this interview. We appreciate your willingness to participate.

INTRODUCTIONS

Moderator – Robin Shepherd, Graduate Student, Instructional Design & Technology, STEM Education & Professional Studies, Old Dominion University

PURPOSE OF INTERVIEW

The purpose of this interview is to discuss student preferences in navigating a self-paced/teacher-paced community college course. We need your input and want you to share your honest and open thoughts with us.

GROUND RULES

1. WE WANT YOU TO DO THE TALKING.

2. THERE ARE NO RIGHT OR WRONG ANSWERS

Every person's experiences and opinions are important.

3. WHAT IS SAID IN THIS ROOM STAYS HERE

We want you to feel comfortable sharing if sensitive issues come up.

4. WE WILL BE RECORDING THE SESSION

We want to capture everything you have to say. We don't identify anyone by name in our study. You will remain anonymous.

Interviewer: "Let's Get Started. Tell me what is your favorite aspect of taking an online course?"

Participant Response: "Um, I would have to say because it can be easier than going to the campus. Um, especially if you don't have transportation to get to campus, but you still want to take classes."

Interviewer: "Why do you think someone would choose to take an online course instead of a face-to-face course?"

Participant Response: "Um, one transportation reasons, two because you have a busy schedule, um and I think three because um some people can you know do both online and in class. Some people don't want to go to school, not like go to school, but like go in the classroom so you know them being able to work at their own pace um probably would be better for them."

Interviewer: “Who in particular has influenced your study habits at this point? Please explain.”

Participant Response: “Um, I would have to say my instructor because um she teaches us how to be prepared and you know how to stay on task and ways that you can um make it easier on yourself by planning ahead and you know make easier ways to study and do your work.”

Interviewer: “Do you prefer to participate in a course where the professor determines the pace at which you learn? Please explain.”

Participant Response: “Um, it depends on what subject it is. Some subjects you can do on your own. Other subjects you might need help um from the professor to guide you throughout the course. Honestly, it depends. I don’t mind the instructor setting the pace if the class is a very difficult class and it’s a very involved class. I would prefer the instructor to, um, set the pace then me to try and do it on my own and fail.”

Interviewer: “Along those same lines do you prefer to participate in a course where you determine the pace at which you learn? Please explain.”

Participant Response: “Um, it depends on the class again. I mean if it’s something that I can do on my own then yeah I would prefer to set the pace, but if it’s a more complex complicated class I would prefer the professor to set the pace.”

Interviewer: “Did you find that the pacing of the course used in this study helped you in other courses that you were taking this semester?”

Participant Response: “Um, I felt this course did help, I mean, I like how the instructor outlined exactly when everything was due and I like how the instructor was very organized. Um, some instructors are not organized. So I like how he had the tabs setup. He explained what you were supposed to do and that he gave feedback as well because some instructors don’t give feedback so that helped a lot.”

Interviewer: “Did you find that the withdrawal policy for the course was clear?”

Participant Response: “Yes, um they pretty much had it and they like give you a syllabus so once you read the syllabus it pretty much gives you all the information as far as if you withdraw or if you don’t do your homework it pretty much explains it to you. Something that was complicated, if you miss a certain amount of work or days he tells you that you should withdraw from the class because you know your not going to get a good grade. So he pretty much tells you that in the syllabus.”

Interviewer: “How do you recover when you fall behind in a course?”

Participant Response: “Um, I would go and look at my assignments that I have to turn in and then I start going from there.”

Interviewer: “What else should I have asked you?”

Participant Response: “Um, well I guess my thing for online is sometimes it can be a little difficult. Like the class that I just took, it was pretty straight forward. Um, the only thing that was a little difficult trying to do what you do in class in an online class. Like I took a health class and he wanted us to make splints and things like that and you know some people might not have access to stuff like that. You know so just trying to not make it like a classroom because it is online. That’s about it, other than that, I mean, it wasn’t bad as an online class. I mean, it was

pretty straight forward I haven't had any online courses that were difficult for me though. Like all the questions you asked were pretty good."

Interviewer: "Thank you for participating. Again your responses will be kept confidential."

Interview #4

Interviewer: Robin Shepherd

Interviewee: Self-Paced, Non-Traditional Student

Date: August 9

Time: 6:30 p.m.

Location: Blackboard Collaborate

Length of interview: 9 minutes 6 seconds

WELCOME

Thanks for agreeing to be part of this interview. We appreciate your willingness to participate.

INTRODUCTIONS

Moderator – Robin Shepherd, Graduate Student, Instructional Design & Technology, STEM Education & Professional Studies, Old Dominion University

PURPOSE OF INTERVIEW

The purpose of this interview is to discuss student preferences in navigating a self-paced/teacher-paced community college course. We need your input and want you to share your honest and open thoughts with us.

GROUND RULES

1. WE WANT YOU TO DO THE TALKING.

2. THERE ARE NO RIGHT OR WRONG ANSWERS

Every person's experiences and opinions are important.

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4. WE WILL BE RECORDING THE SESSION

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Interviewer: “So I am going to ask you about nine different questions. Is that okay?”

Participant Response: “That’s fine”

Interviewer: “So the first question is tell me what is your favorite aspect of taking an online course?”

Participant Response: “Um, well, being an older student going back to school, um at 43, it’s much easier for me because I work full-time. I am a mother full-time and my daughter has a granddaughter, or also has a child that also lives with me. So, being able to be at home a little more is much easier for me.”

Interviewer: “Good. Why do you think someone would choose to take an online course instead of a face-to-face course?”

Participant Response: “Um, well in my aspect, so in my group of people who are older groups that go back after raising families and have them with them it’s easier timeframe wise it’s convenient. Um, we can either do it late, we can do it like for me if my granddaughter is resting. Um, so it is easy. You see kids at 20 doing it because of their working. You know it might be more of a convenience thing for everybody.”

Interviewer: “So who in particular has influenced your study habits? Please explain.”

Participant Response: “Sure, my study habits, um, I’m pretty diligent about my own study habits. Um, you know my youngest is 13 so he is entering high school. Um, and my oldest is 21 so she’s gone to college. So I am pretty set on studying my own set of study habits and then trying to show them that this is how you, the best way to do it. Um, again quiet spaces, some finding libraries, some place to go do it quietly. My way of dealing with all that.”

Interviewer: “Do you prefer to participate in a course where the professor determines the pace at which you learn? Please explain.”

Participant Response: “Um, well, I guess in an online course it’s not really determined for you. Well I guess it could be. That is not true. Sometimes it is, usually so these last few classes that I took there was courses that were taken and they said specific dates had to be done by this week on certain days. You know, and others said hey you have the whole week and I don’t care when you get it to us. Um, so, you know, I am okay with having it. I have done it both ways. I actually lived in the Midwest so I actually transferred into a community college from a university. Um, I went to the University of Wisconsin so and I actually went to the school rather than online school. So I did see a big difference between going to the classes and having a set time to pace yourself based on what the teacher wants. Especially if you are meeting with that teacher two to three times a week rather than you have a whole week to do it. So there is a nice subtle difference between the two.”

Interviewer: “Do you prefer to participate in a course where you determine the pace at which you learn? Please explain.”

Participant Response: “Sure, um, honestly I do. Again going back to knowing the differences between going and actually being in classes at the university versus now doing them on virtual. I actually like the fact that I can have the time to say alright I have a week to do it. Now doing it in my own timeframe is very nice. To have that capability especially when you work full time too.”

Interviewer: “Did you find that the pacing of the course used in this study helped you in other courses that you were taking this semester?”

Participant Response: “Um, it did, it did. I took three this summer and I know I came in half way through the summer. I think the first half started it might have been May. I kind of started half way so I realized I kind of rushed it with three classes, but um, you know, that’s kind of my thing. I like to bombard myself. I probably shouldn’t, but I do. Um, but I did. I liked that pace, knowing, again, with one versus the other two that I had the time for both of those and then I could say alright I am going to designate this night to this class, or maybe this night to two classes and then the next night the third night for the third class. It really kind of helped that I had the week to pace those classes out accordingly.”

Interviewer: “Did you find that the withdrawal policy for the course was clear?”

Participant Response: “Yes, in fact most of the teachers, um, I am used to it them letting us know you have by this certain date to withdraw from a class and I realize that the summer classes are super-fast. So having the teachers remind us, “Hey, don’t forget you have on this day.” I think all of you kind of reminded us several times you know as a reminder this is what’s going to happen of you can withdraw at certain times. It was very clear to all of us.”

Interviewer: “How do you recover when you fall behind in a course?”

Participant Response: “Let’s see, um, do you mean fall behind as in I am late to do an assignment?”

Interviewer: “You’re late, or your grade has been lowered due to being late.”

Participant Response: “Um, I don’t think I have been late on assignments that’s the thing. The last time I was late on an assignment was when I did school back when I was like 20. Um, so if I had to go back that far, it was my own laziness at 20, but um now I am pretty diligent about getting it done. Again that is probably my age knowing that I work full time and I gotta get my assignments in, but um if I had to say that I was going to be late on an assignment I would definitely make sure can I still make it up. Coming to the instructor if I had to and say what would it take to get this completed? You know, and what’s the ramifications if I get it in at a late time.”

Interviewer: “What else should I have asked you?”

Participant Response: “Um, no. Again, I know I take a different perspective. If you would have asked somebody that has just entering, or out of high school, maybe in their early 20s, might be a totally different aspect of it, but um like I said, I love the virtual and I told my family if I had the choice I would continue to do as many virtual classes as I can until they make me come in and do the class because of work and family and everything else so as far as other questions, no. I wish I had one for you. You all were really self-explanatory in everything that you gave us online. So, I love the fact that it was all laid out.”

Interviewer: “Thank you for participating in our interview. Again your responses will be kept confidential.”

Participant Response: “Thank you. Good luck.”

CURRICULUM VITAE

Robin Shepherd, M.S. CHES

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STEM Education and Professional Studies, 228 Education Building, Norfolk, VA 23529

EDUCATION

Doctor of Philosophy Candidate, Instructional Design and Technology, Old Dominion University, Norfolk, VA

Master of Science, Community Health Education, Towson University, Towson, MD, 2006

Bachelor of Science, Physical and Health Education, Radford University, Radford, VA, 2002

Postgraduate Professional Teaching License: PGP-0637826

WORK EXPERIENCE

J. Sargeant Reynolds Community College
Program Head and Associate Professor

May 2013 - Present

- Create a quality schedule, support adjunct faculty, and maintain fitness equipment and classroom spaces for the physical education department.
- Plan, design, and instruct Drug Use and Abuse, Human Sexuality, Medical Terminology, Fitness Walking, Lifetime Fitness and Wellness in varying formats
- Design course templates and train nursing faculty in instructional strategy best practices
- Created Open Educational Resources (OER) for Drug Use and Abuse courses
- Serve as Master Advisor

Virtual Virginia
Teacher

August 2015 - Present

- Instruct 9th and 10th grade health and physical education distance learning courses
- Design course template and assignments for health and physical education 9

Rappahannock Community College
Adjunct Professor

August 2008 – May 2015

- Instruct Introduction to Drug Use and Abuse and Concepts of Personal and Community Health distance learning classes (Face-to-Face and Distance Learning)
- Interact with students, in class, via video, and online through Blackboard

King and Queen County Public Schools
Physical, Health, and Driver Education Teacher

August 2008 – May 2013

- Instruct 8th and 10th grade health and physical education, 10th grade driver education, family life, and advanced physical education classes (11th and 12th grades)
- Assume responsibilities of classroom teacher including professional development, communication with parents, assessments of students, and staff meetings
- Implement various student-centered learning methodologies; significantly enhanced the class environment by acting as facilitator to promote student leadership in initiating and creating positive learning opportunities
- Gear-Up Grant Coordinator