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Giving Up on a Course: An Analysis of Course Dropping Behaviors Among Community College Students

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Excessive course dropping is costly to students and institutions. Using longitudinal transcript data, this study investigated course withdrawal patterns among 5900 students at a large, racially/ethnically diverse community college district in Texas. Two-thirds of the students dropped at least one course, and 13.5% of the total course enrollments resulted in withdrawal. Course withdrawal rates were significantly higher among students who were: male, African American, age 20–24, GED holders, academically underprepared, enrolled part-time, and had a cumulative college GPA of less than 2.0. Science, mathematics, and writing courses had high drop rates, as did Second Start and fully online courses. Dropping 20% or more of attempted courses was associated with 44% lower odds of a successful enrollment outcome. We hypothesize that community college students are rational, act in their own self-interest, and perform a cost–benefit analysis with the knowledge they possess when deciding whether to drop a particular course. However, students often overuse or misuse the course withdrawal function. Despite acting in self-interest at the moment, the decision to drop a course is often not in students' long-term best interest, and excessive course dropping can resemble a 'cooling out' mechanism by which students' reduce their aspirations toward degree completion. Recognizing community college structures and rules (e.g., withdrawal procedures, tuition refund policy) influence course dropping decisions, we describe academic policies and classroom practices that can help reduce course withdrawals. We believe that reducing course attrition is a foundational, yet often overlooked, mechanism for reducing community college attrition.

Keywords

Disciplines

African American Studies | Bilingual, Multilingual, and Multicultural Education | Community College Leadership | Higher Education

Comments

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We hypothesize that community college students are rational, act in their own self-interest, and perform a cost-benefit analysis with the knowledge they possess when deciding whether to drop a particular course. However, students often overuse or abuse the course withdrawal function. Despite acting in self-interest at the moment, the decision to drop a course is often not in students' long-term best interest, and excessive course dropping can resemble a 'cooling out' mechanism by which students' reduce their aspirations toward degree completion. Recognizing community college structures and rules (e.g., withdrawal procedures, tuition refund policy) influence course dropping decisions, we describe academic policies and classroom practices that can help reduce course withdrawals. We believe that reducing course attrition is a foundational, yet often overlooked, mechanism for reducing community college attrition.

Keywords: course withdrawal; course dropping; community colleges; student persistence; Texas; rational choice theory

Introduction

Courses are the basic building blocks of a college degree. Passing required coursework on the first attempt provides the most expeditious pathway to degree completion. Conversely, academic momentum is hindered when a student does not successfully complete a course (Adelman, 2005; 2006). Numerous studies have examined how course grades and pass/failure rates in specific courses influence the likelihood of degree attainment (Bailey, Jeong, Cho, 2010; Tafreschi & Thiemann, 2016; Zeidenberg, Jenkins, & Scott, 2012). However, there is another common course outcome that remains understudied in the literature: withdrawing from the course.

The purpose of this study was to examine course dropping behaviors among a cohort of students attending a large, racially/ethnically diverse, urban community college district in Texas. Course dropping is prevalent among community college students (Conklin, 1997; Michalski, 2014), but there is limited research on the student characteristics and course attributes associated with high course withdrawal rates in this sector. The following research questions guided this study:

1. How common is course dropping among urban community college students?

2. What are the characteristics of students with the highest course withdrawal rates?

3. What are the characteristics of courses (subject area, academic term, session duration, delivery format) that have the highest withdrawal rates?

4. After controlling for student demographic and academic attributes, what is the association between course dropping and a successful enrollment outcome (i.e., earning a credential and/or four-year transfer) from the community college?

The drop/add period at the beginning of each semester (often within the first 12 to 15 class days of the term) allows students to add and replace courses without a grade being posted. Hagedorn and colleagues (2007) coined the term "course shopping" to describe the adding and

replacing of courses that students engage in during this period. But there is a date during each term, typically called official reporting day (ORD) or census day, after which a student is assigned a grade mark for dropping a course. Courses dropped after ORD result in a "W" (withdrew) on the transcript, but students still must pay full or partial tuition for the course. Additionally, students who drop courses are often required to repay all or a portion of their financial aid. Withdrawing from courses extends the time-to-degree, increases the total cost of college, and can add to a student's overall debt level (Boldt, Kassis, & Smith, 2015).

Of course, at times it may be beneficial for a student to drop a class (Babad, Icekson, & Yelinek, 2008). If a student enrolls in a course and then learns several weeks into the semester that he/she is unprepared for the content, dropping the course is a better option than earning an "F". Alternatively, a student may find the course content is too elementary or the topics being covered are simply not what was expected. Unanticipated life events, such as family or financial emergencies, may require a student to drop courses after the drop/add period. In these scenarios, the ability to withdraw from a course without receiving a failing grade provides a form of protection for the student. However, students do not always withdraw from courses for such constructive reasons (Morris, 1986). A student may not study sufficiently for the course and rather than fail, withdraw before the end of the term as a form of saving face and avoiding a poor grade. Additionally, a student may have become disenchanted with the course or instructor, and choose to drop simply because he/she does not care to finish the class.

High rates of course dropping create financial inefficiencies and additional time costs for colleges (Boldt et al., 2015; Florida Department of Education, 2011; Hagedorn et al., 2007). A limited number of seats are available in each class section, and when a student reserves one, it is no longer available for other students. This student must retake the course in a future term and

again reserve a classroom spot. Course dropping also places additional burden on academic advising offices because many colleges require that students meet with an advisor before they can drop a course (Wheland et al., 2012).

Recognizing the problems caused by excessive course dropping, some institutions have introduced policies aimed at curbing this enrollment behavior. In 2011, the University of Tennessee-Knoxville (UT-K) tightened its course withdrawal policy and students are limited to dropping no more than four courses at UT-K throughout their undergraduate careers (UT-K, 2011). Similarly, in 2014 the University of North Carolina-Chapel Hill instituted a policy that prevents students from dropping more than 16 semester credit hours during their undergraduate career at the institution (UNC, 2017). The reasons for adopting more stringent withdrawal policies include expanding course availability, promoting greater faculty efficiency, and encouraging on-time graduation.

In Texas, students who enrolled in a state public college or university in Fall 2007 or later are not allowed to drop more than six college-level courses during their undergraduate career (State of Texas, 2007). After accumulating six withdrawals, students dropping subsequent courses after ORD receive the grade earned at the time of withdrawal, which is often an "F". In contrast to institutional policies where the number of withdrawals is limited specifically to those institutions, Texas' "six drop rule" includes all courses dropped from the time the student first enrolls in a Texas public college until the completion of the baccalaureate degree; meaning that students beginning at a community college and transferring to a university bring the sum of dropped courses with them into the four-year institution.

While state-level policy specific to course dropping is not yet commonplace, most states have renewed efforts to connect state funding to performance outcomes, which typically include

intermediate measures of student progress (e.g., course completions, credit hour accumulation) and degree completion (McClendon & Hearn, 2013). Consequently, institutional policies and practices that remove barriers to student persistence are particularly timely and valuable. In his seminal work analyzing student pathways from high school through college, Adelman (2006) found that excessive course withdrawal was "one of the most crippling features of undergraduate histories" (p. xxii) that prevented students from finishing college. Dropping 20% or more of the courses attempted reduced a student's chances of earning a degree by one half. Considering the negative consequences of excessive course dropping on student and institutional performance, empirical research on this topic is relatively scarce. The present study advances empirical work on this topic and identifies strategies that can prevent unnecessary course dropping.

Literature Review

This review examines the prevalence of course dropping in higher education, the student- and course-level factors associated with high course withdrawal rates, and the common reasons students drop courses. Much of the research on course dropping is now dated and studies have primarily given attention to course withdrawals at four-year institutions, not community colleges. But regardless of the institutional sector or time period under investigation, collective findings from this literature emphasize that high rates of course withdrawal have negative consequences for students and institutions.

How Prevalent is Course Dropping?

Research suggests that course dropping is a common enrollment behavior practiced by students in both the two- and four-year sectors. Within the four-year context, several single-institution studies of course dropping have produced remarkably similar results. Analyzing institutional records across three semesters (Spring 1981, Fall 1981, Spring 1982), Fleming and

colleagues (1985) found that 35% of Clemson University undergraduates had dropped one or more courses during this time period. Subsequent analysis restricted only to course droppers found that 80% had dropped courses in at least two of the semesters examined, while 19% had dropped courses in all three semesters. Another study analyzing survey responses from 208 students at Kentucky State University who had engaged in add/drop activities during the Fall 1982 semester found that 35% reported dropping courses (Morris, 1986). At a research-intensive urban Midwestern university, Wheland and colleagues (2012) found that 35% of first-year students withdrew from at least one course during the 2008-09 academic year.

Community college students, relative to their four-year peers, are at risk for excessive course dropping due to life circumstances (e.g., full-time employment, family responsibilities, financial constraints, transportation barriers) that often interfere with their academic pursuits (Daly & Bateman, 1978; Hagedorn et al., 2007; Michalski, 2014; Southerland & Lowry, 1985). In a review of early work on this topic, Friedlander (1981) found withdrawal rates for individual courses at community colleges ranging from 30% to 60%. In a more recent study, Hagedorn and colleagues (2007) found that between Fall 2000 and winter intersession 2002, 36% of the 4,721 students in their sample from Los Angeles Community College district had dropped a course during the first four weeks of the term.

Withdrawals account for a sizable proportion of total course enrollments at community colleges. Analyzing records from a large, suburban community college in the Midwest, Conklin (1997) found that course withdrawals accounted for about 15-16% of total enrollments from Fall 1989 – Fall 1993. A report by the Florida Department of Education (2011) found withdrawals (n= 668,854) accounted for 11.3% of total course enrollments across the state's community college system from 2007-08 to 2009-10. Course withdrawal rates at individual colleges ranged

from as low as 6.3% to as high as 15.5%, suggesting that institutional factors (e.g., student profile, registration procedures, course withdrawal policies, academic advising) may influence course dropping behaviors.

Which Students and Courses Have the Highest Withdrawal Rates?

A handful of studies have examined the characteristics of students that frequently drop courses. Within the four-year context, researchers have found that males, African American, and full-time students drop courses at higher rates than their peers (Bosshardt, 2004; Fleming, Hill & Merling, 1985; Morris, 1986). Studies of four-year (Fleming et al., 1985; Rownd, Bolton & Marr, 1981) and community college (Hagedorn et al., 2007) students have found that students with lower GPAs are more likely to drop courses. Bosshardt (2004) examined course dropping among 239 students enrolled in principle economics courses at a regional state university. When comparing students with a weaker prior record of academic performance (i.e., those with a low probability of earning a C or higher in the course) with students with a strong prior record of performance, Bosshardt found that students with weaker academic records tended to wait until late in the semester to drop. Conversely, when they did withdraw, students with stronger academic records were more likely to withdraw from the class before ORD. A student's prior academic performance appears to shape their decisions about whether, and when during the term, to withdraw from a course.

A few studies have identified the types of courses that tend to have high withdrawal rates. From 2007-08 through 2009-10, mathematics and science courses (i.e., trigonometry, calculus, algebra, chemistry) generated the highest percentage of withdrawals across Florida's community college system (Florida Department of Education, 2011). There is some evidence that larger class sizes generate higher withdrawal rates than smaller classes at community colleges (Daly &

Bateman, 1978). Analyzing survey responses from 204 Kansas State University students who had dropped one or more courses, Reed (1981) found students were more likely to drop elective courses than required coursework. Studies of four-year (Boldt et al., 2015) and community college (Jaggars, Edgecombe, & Stacey, 2013; Jaggars & Xu, 2010; Xu & Jaggars, 2011) students have found that fully online courses have higher withdrawal rates than face-to-face courses. In Washington State's community and technical college system, online courses had a completion rate 5.5% lower (Xu & Jaggars, 2011). The completion rate for online courses was 12.7% lower for students in the Virginia Community College System (Jaggars & Xu, 2010). Research in this area is limited, but does suggest the structural characteristics of a course influence withdrawal rates.

Why Do Students Drop Courses?

Most of the literature on course dropping has been concerned with understanding *why* students chose to withdraw. Yet, while we contend that dropping courses may lead to withdrawal; the two actions are not the same. The most common methodological approach used to examine dropping courses has been retrospective self-reports or surveys from students who withdrew entirely (Babad et al., 2008). Findings across these studies indicate that students drop courses for a wide variety of reasons. As Michalski (2014) suggests, most of these reasons can be broadly classified as either academic or non-academic. Prior studies have tended to assume that the academic reasons for withdrawal are within the institution's control, while non-academic reasons for withdrawal are largely outside of the college's control (Daly & Bateman, 1978; Friedlander, 1981).

The leading academic reasons for course withdrawal appear to be similar for four-year and community college students. Perhaps the most commonly cited reason for course withdrawal

is the fear of receiving a low grade or failing the course (Daly & Bateman, 1978; Dunwoody & Frank, 1995; Reed, 1981; Wheland et al., 2012). Other academic reasons for withdrawal include: feeling overwhelmed by workload and assignments (Daly & Bateman, 1978; Friedlander, 1980), content was too difficult (Babad et al., 2008; Wheland et al., 2012), dislike of thee instructor or the instructor's teaching style (Babad et al., 2008; Conklin, 1997; Daly & Bateman, 1978; Moran, 1995; Reed, 1981), and feeling the need to reduce the course load (Conklin, 1997).

With regards to the non-academic reasons cited for withdrawal, findings across multiple studies indicate that work conflicts, including changes to one's work schedule during the semester, are a primary reason students withdraw from classes (Daly & Bateman, 1978; Reed, 1981). Considering most community college students work, it is not surprising that job conflicts are a leading cause of course withdrawal in this sector (Conklin, 1997; Mukherjee et al., 2017; Friedlander, 1981). Other non-academic or personal reasons cited for dropping a course include: financial difficulties (Aldridge & Rowley, 2001; Conklin, 1997; Dunwoody & Frank, 1995; Friedlander, 1981; Michalski, 2014), transportation problems (Michalski, 2014), military service (Thompson, 1969; Michalski, 2014), and illness (Conklin; 1997; Friedlander, 1981).

Contributions of the Present Study

The literature suggests that course withdrawals represent a sizable proportion of total enrollments in the both the two- and four-year sectors. Males, African Americans, and students with low GPAs have been found most likely to engage in excessive course dropping. The limited number of studies examining course attributes suggest that mathematics, science, elective, and fully online courses generate higher withdrawal rates. Students drop courses for a wide range of academic and non-academic/personal reasons, with job conflicts frequently cited as the most common reason, particularly at community colleges. The present study advances the literature on

community college student success by providing a detailed analysis of the types of students who frequently drop classes, as well as the types of courses with high withdrawal rates. Findings can be used to curb course dropping at community colleges, which research demonstrates has the potential to increase student progress and degree completion.

Theoretical Framework

Popular theories of college persistence and success (e.g., Astin, 1997; Tinto, 1987) address students' academic performance and persistence, but have not given explicit attention to withdrawal from individual courses. The factors leading to college attrition are not identical to the factors that lead to course attrition (Dunwoody & Frank, 1995; Reed, 1981). Only a handful of studies, however, have applied a theoretical or conceptual framework to specifically understand students' decisions to withdraw from a course (Adams & Becker, 1990; Boldt et al., 2015; Bosshardt, 2004; Hagedorn et al., 2007; Rownd et al., 1981). Some studies extend the work of Tinto (1987) and focus more broadly on students' ability or intent to complete college. However for this study, our goal was to advance knowledge specifically related to course withdrawal rather than general college attrition.

We adopted rational choice theory (RCT) to inform our understanding of course withdrawals among community college students, consistent with several of the more robust studies on course dropping (Boldt et al., 2015; Hagedorn et al., 2007). RCT contends individuals calculate the likely costs and benefits of any action before deciding how to proceed, and make decisions they believe will maximize utility/satisfaction from their preferences (Blau, 1997; Goode, 1997; Hechter, & Kanazawa, 1997; Heckathorne, 1997; Scott, 2000). An individual's preferences and motivations influence the choices they make (DesJardins & Toutkoushian, 2005). Applying RCT to course enrollment behaviors, we acknowledge that some community

college students may be motivated to enroll in a class simply to acquire knowledge for the love of learning. However, for most degree-seeking community college students, we argue the primary motivating factor for enrollment is to successfully pass the course as means of progressing towards degree completion or transfer. Thus, we view successful course completion (earning a passing grade) as maximizing utility from community college students' motivations for course enrollment.

We hypothesize that prior to dropping a course, the student will weigh the benefits to be gained from withdrawal (e.g., avoid receiving a poor grade, take the course in another semester with a different instructor, working more hours to earn extra income, use the time in other more satisfying ways) versus the perceived costs (e.g., lost tuition, delayed progress toward degree attainment, squandered time and energy on the course). Key information used in the cost-benefit analysis includes the student's educational goals, prior academic experiences, external pull factors, and assessment of current standing in the course (Bosshardt, 2004). Ultimately, students will withdrawal from a course when the perceived expected costs of remaining enrolled outweigh the benefits.

The utility of the course withdrawal decision, however, must be viewed through the social context of the decision maker.. In the case of community college students, choices are frequently based on utility of the moment, without focus on the long run (Reyna & Frank, 2006). As Hechter and Kanazawa explain in their review of RCT, "people often act impulsively, emotionally, or merely by force of habit" (1997; p. 192). However, despite the veracity of the benefit of the decision, decision-makers believe at the time of the action that it is in their best interest.

While RCT places the individual at the center of the decision-making process (Iloh & Tierney, 2014; Scott, 2000) decisions are influenced at both the micro (the individual) and macro levels (social structures). On the other hand, Hechter and Kanazawa (1997) assert, "since norms and other kinds of institutions enter into the models as both contexts for and outcomes of action, rational choice theories do not rest on premises pertaining exclusively to individuals" (p. 193). We posit that community colleges provide the social structure and institutional norms (e.g., duration of drop/add period, tuition refund policy, withdrawal procedures) that directly influence and enable students' course dropping decisions. Community colleges create a social context in which dropping a course may appear to have few negative consequences. For example, students can typically re-enroll at a later date if they so desire, the loss of tuition may seem inconsequential when compared to costs at most four-year institutions, and in general the practice is so widespread that it invokes few, if any, negative social ramifications.

RCT does not presume individuals have all of the pertinent information needed when making decisions (DesJardins & Toutkoushian, 2005; Scott, 2000). Instead, they conduct the cost-benefit analysis based on the information that is available to them at that time. Therefore, we hypothesize that many students base their withdrawal decision on incomplete information or even inaccurate assumptions. At the micro-level, this is due in part to community college students often being the first in their families to attend college and possessing low levels of college knowledge (Long, 2016). At the macro-level, studies have found a lack of institutional structure, guidance, and support at community colleges often cause students to make poor enrollment decisions which ultimately derail their success (Bailey, Jaggars, & Jenkins, 2015a; Scott-Clayton, 2011). We assert this lack of institutional structure and guidance often applies to students' decisions about dropping courses.

In sum, we hypothesize that community college students are rational, act in their own self-interest, and perform a cost-benefit analysis within their knowledge sphere when deciding whether to drop a particular course. The community college's social structure and norms play a direct role in shaping students' course withdrawal decisions. We hypothesize that despite acting in self-interest at the moment, the decision to drop a course is often not in students' long-term best interest, and the negative consequences of course dropping are most detrimental for students from marginalized backgrounds.

Methodology

Data Source and Sample

The study analyzed institutional records from a large community college district in Texas. Urban Community College (UCC) district (a pseudonym) is one of the largest districts in the state and enrolls more than 80,000 students annually across multiple campuses situated within a metropolitan area. Transcripts provided detailed information about students' course-taking behaviors, academic performance, and credentials earned. While transcript data are used primarily for institutional and reporting purposes, these data can be a valuable resource for researchers interested in examining community college student success (Hagedorn & Kress, 2008; Leinbach & Jenkins, 2008). Transcript-level data was necessary for the purposes of this study, given our focus on examining course enrollments and withdrawal rates. The transcript records were merged with student demographic and financial aid information provided by the institution, as well as with data on transfer from the National Student Clearinghouse.

The dataset tracked the enrollment behaviors of a cohort of students who entered any of the UCC campuses during the Fall 2007 semester. The dataset tracks their enrollment across six full academic years (through Summer 2013). The full sample (n= 5,878) analyzed in the present

study consisted of award-seeking first time in college (FTIC) students in Fall 2007 who belonged to one of four racial/ethnic groups with sample sizes sufficient enough for the purposes of the statistical analysis (i.e., African American, Asian, Hispanic, White). This sample was used to examine differences in course attempts and withdrawal rates as function of students' demographic and academic characteristics. Additionally, this sample was used to explore the multivariate association between course dropping and success (as represented by successfully earning a credential and/or transferring to a four-year institution).

In addition to understanding the student-level factors associated with course dropping, we wanted to identify the characteristics of courses that had the highest withdrawal rates. Here courses, not students, were the unit of analysis. We examined courses attempted across all six academic years of the dataset, but focused on withdrawal rates for the top 25 courses attempted by the students in our sample. The total number of enrollments across these 25 courses from Fall 2007 through Summer 2013 was n=62,836. These courses represent many of the gatekeeper and prerequisite courses students must complete to progress through their degree programs. College-level courses including College Algebra, Composition I, U.S. History I, and Introduction to Psychology are required for nearly all associate degree programs at UCC (and some of these courses are required for workforce certificates). However, as a prerequisite to accessing these gatekeeper courses, a significant proportion of UCC students must first enroll in developmental courses (e.g., Developmental Math I and II, Developmental Writing I and II). In our study, about one-fourth (n=6) of the 25 most attempted courses were developmental courses.

A description of UCC's withdrawal process is necessary to contextualize the results from our analysis. Students are responsible for officially withdrawing from a course and submitting the withdrawal paperwork to the registrar's office (which can be done in-person or online).

Failure to officially withdraw may result in the student receiving a grade of "F" in the course. UCC expects students to participate in withdrawal advising before being allowed to drop a course after ORD. In theory, withdrawal advising is expected to occur in one of three ways: consulting with the instructor of the course, meeting with an academic advisor, or completing the online withdrawal advising process. In practice, however, there is not a formal mechanism in place to monitor and enforce the withdrawal advising expectation. Consequently, according to several UCC administrators we consulted, most UCC students withdraw from courses using their online self-service portal, without having participated in any form of withdrawal advising.

Students withdrawing from a class after ORD receive a grade of "W" on their permanent academic record and the drop counts towards Texas' six-drop limit (unless the withdrawal meets one of exceptions outlined in the Texas Education Code). UCC students who drop courses after ORD are still required to pay full tuition for the course. For the 2010-11 academic year (the mid-point of our six year dataset), the UCC tuition and fee rate for a three-hour academic course was: $176 for an in-district student, $359 for an out-of-district student, and $428 for an out-of-state student. In addition, financial aid is distributed based on the expectation that students will attend their classes for the entire semester, so students who drop courses may have their financial aid reduced or cancelled.

Variables and Data Analysis

The student-level independent variables were grouped into two categories: demographic characteristics (gender; race/ethnicity; age); and academic and college experiences (high school preparation; enrollment intensity; program of study; developmental education placement; college GPA; financial aid receipt). Table 1 displays the coding for each of these variables. Gender, race/ethnicity, age, and enrollment intensity were recorded at the time of students' initial

enrollment at UCC (i.e., Fall 2007). Like most community colleges in Texas, 12 credit hours per semester is considered full-time enrollment at UCC. College GPA and financial aid status were captured as of the student's last semester of enrollment at UCC, or as of the last semester available in the dataset.

For the student-level analyses, the outcome variables of interest were the number, and proportion, of courses students dropped during their entire duration of enrollment at UCC. The course drops examined in this study specifically capture courses that were dropped *after* the drop/add period, thus resulting in a grade of "W" on the student's transcript. Tallying the total number of course drops for each student is informative; however, a simple count of courses dropped does not provide an understanding of the proportion of drops, relative to the total number of courses a student attempted. Therefore, we calculated a course withdrawal rate for each student by dividing the total number of course withdrawals by the total number of courses attempted during their time at UCC.

For the course-level analyses, the outcome variable of interest was the number, and proportion, of withdrawals based on the characteristics of the course. The course-level factors of specific interest were: course title; academic term (Fall 2007, Spring 2008, Summer 2008); term duration (regular term, second start); course level (developmental, college-level); and delivery format (online or face-to-face). UCC offers a Second Start session in the Fall and Spring terms for students who do not register for courses in time to begin the regular term. Regarding course delivery format, only courses that were offered 100% online (i.e., no face-to-face component) were classified as online. It is worth noting that UCC caps course enrollment at 30 students per section, so the courses examined in our study have comparable class sizes.

Descriptive statistics were used to describe the student sample and examine the frequency of their course enrollments and withdrawals. A 95% confidence interval was included around the average course withdrawal rate for each student level demographic or academic experience independent variable. Confidence intervals were used to determine if the withdrawal rates for students with various demographic attributes and academic experiences were statistically different across the levels of that variable. If the 95% confidence interval around the withdrawal rate for a specified level of an independent variable does not overlap with the other confidence intervals around the remaining levels of that independent variable, the withdrawal rate for that student attribute was considered statistically different. This same analytic approach was used for the course-level analysis.

A logistic regression was used to assess the association between course dropping and student success. The dependent variable was coded: 0 = did not earn a UCC credential or 4-year transfer within six years; 1 = earned an UCC award and/or 4-year transferred. The independent variables in the model match the student-level variables previously discussed and were organized into categories sequentially entered into the model. Course dropping, the key variable of interest, was entered into the model last and was coded into two levels (excessive dropping; lower course drop rate). Excessive course dropping was defined as dropping 20% or more of the courses attempted. This level was determined based on work by Adelman (2006) and by the distribution of the course drop ratio among the sample. About 75% of the sample dropped less than 20% of their courses; therefore, excessive course dropping is defined by being in the top quarter of the course drop ratio distribution. The coefficients' odds ratios are reported for each independent variable and the Nagelkerke R square, as well as the percent correctly predicted by the model, are included as model fit indicators. All analyses were completed in SPSS 23.

Limitations

There are several limitations to this study that warrant discussion. Transcript data allow researchers to examine the "facts" about course withdrawals, rather than subjective impressions from students; but these data do not explain *why* the student chose to drop a particular course (Babed et al., 2008). Some of the course drops are likely due to valid personal reasons (e.g., medical hardship, moving out of the area, military service). Relatedly, our findings can inform discussions around Texas' six-drop rule, but a different dataset would be required to examine the students' most impacted by this state policy. In addition to knowing the exact reason for each course withdrawal, transcript records from the transfer-receiving institutions would be necessary to carry out that research. That type of study is offered as an area for future investigation.

Results

Table 1 describes the characteristics of this first time in college (FTIC) cohort at UCC. Females comprised 56.2% of the sample. There was a larger proportion of Hispanic (37.2%) and African American (32.1%) students, compared to White (18.6%) and Asian (12%) students. Nearly half (46%) of the students were age 20 or older during their first semester of enrollment. About two-thirds (63%) were pursuing vocational/technical credentials. More than half (57%) enrolled part-time during their first semester at UCC. About three out of every four students in the sample (72.9%) were referred to developmental coursework in at least one subject area. With regards to financial aid, 46.1% of the students were Pell Grant recipients and 18% were federal student loan borrowers. Six years after initial enrollment, 36.9% of the sample had earned a credential (i.e., certificate and/or associate degree) from UCC and/or transferred to a four-year institution.

[Insert Table 1 here]

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Which Students Have the Highest Course Withdrawal Rates?

The first research question examined the prevalence of course dropping and the characteristics of students with the highest course withdrawal rates. During their time at UCC, students in this sample attempted an average of 15.2 courses and withdrew from 1.7 of those courses. Overall, 13.5% of the total course enrollments resulted in a withdrawal after ORD. Table 1 displays the confidence intervals used to test the mean differences in course withdrawal rates as a function of student characteristics. The difference in average course withdrawal rates for males (14.3%) and females (12.8%) was statistically significant. Compared to white students (14%), the withdrawal rates for African American students were significantly higher (16.3%), while the rates were lower for Asian (10.3%) and Hispanic (11.8%) were lower. Students in the age range of 20-24 had a withdrawal rate (15.2%) that was significantly higher than their younger, and older, peer groups.

Regarding academic and college experiences, GED holders had a significantly higher course withdrawal rate (16.8%) than students earning a high school diploma. Students referred to developmental coursework had a higher withdrawal rate (13.9%) than their college-ready peers. While part-time students, on average, attempted far fewer courses than full-time students, the course withdrawal rate for part-time students (14.6%) was significantly higher. There was a strong relationship between students' cumulative GPA and their rate of course dropping. Those with a GPA of less than a 2.0 had a significantly higher withdrawal rate (22.1%) than students in the GPA range of 2.0 – 3.0 (11.4%) and 3.0 – 4.0 (7.5%). The differences in withdrawal rates by program of study (academic vs. technical) and financial aid receipt (Pell grants, federal loans) were not statistically significant. Notably, students who earned a credential from UCC and/or

four-year transferred had a significantly lower course withdrawal rate (9%) than students who had not (16%).

Which Courses have the Highest Withdrawal Rates?

The second research question identified the courses with the highest withdrawal rates. Table 2 displays the 25 most commonly attempted courses by this sample and the far-right column is sorted in descending order by course withdrawal rates. The average withdrawal rate from these 25 courses was 12.4%, but there are noteworthy differences across courses. One in five (20.7%) students who attempted General Chemistry dropped the class after ORD. Several other science (Anatomy and Physiology I, 18.1%; General Biology, 15.6%) and math courses (College Algebra, 15.7%; Intermediate Algebra, 14.1%) were among the most frequently withdrawn courses. Two college-level writing courses (Composition I, 14.3%; Composition II, 16.6%), and two developmental writing courses (Developmental Writing I, 16.3%; Developmental Writing II, 12.6%) had higher than average withdrawal rates. Conversely, the First-Year College Experience (7.2%) and College and Career Planning (8.8%) were among the courses with the lowest withdrawal rates.

[Insert Table 2]

Table 3 examined withdrawal rates by key structural characteristics of the course. This analysis included all courses attempted between Fall 2007 - Summer 2013 for the sample. The withdrawal rates were higher for courses attempted during the Spring semester (12.8%), relative to the Fall (11.4%) and Summer (7.3%) semesters. Compared to courses attempted in the regular term (10.2%), the withdrawal rate was higher for Second Start courses (15.3%) and lower for mini-session (8%) courses. College-level courses classified as academic (12.5%) were dropped at a higher rate than developmental (10.8%) and technical/vocational (7.6%) courses. Courses

delivered entirely online (14.9%) had a higher withdrawal rate than courses which included a

face-to-face component (10%).

[Insert Table 3]

What is the Association Between Course Dropping and Student Success?

The third research question explored the multivariate association between course

dropping and success, as measured by successful completion of a UCC credential and/or transfer

to a four-year institution. Categorical variables are dummy coded with the reference level of the

variable indicated. Table 4 displays the logistic regression results across the three sequential

model iterations. The variables in the academic variable block explain the majority of the

variation in the model as evidenced by the largest change in the Nagelkerke R square, as well as

the largest change in the percent correctly predicted.

[Insert Table 4 here]

In terms of statistically significant demographic variables, both Asian and Black students

had a greater likelihood of success after controlling for other demographics and academic

variables (including course dropping), compared to white students. Age was also significantly

associated with success. For every increase in age (measured in years) a student had 5% lower

odds of success. Notably, Black students had statistically similar odds of success (compared to

white students) prior to controlling for academic behaviors, but after academic behaviors were

entered into the model, the Black students had higher odds of success.

In terms of the statistically significant variables in the academic category, being referred

to development education in reading, writing, and/or in math had a negative association with

success (36% lower odds for developmental education students). Enrolling full-time during the

first semester was positively associated with success (68% higher odds of success for a full time

student compared to a part time student). Cumulative GPA had the strongest association with success compared to all of the other independent variables. With every one point change in cumulative GPA a student's odds of success increases 151%. The primary predictor variable of interest was the student's course drop ratio. Net all other variables, having a course drop ratio greater than 20% (top quarter of the course drop ratio distribution) had a strong negative association with success. Excessive course droppers had 44% lower odds of success compared to students with lower course drop ratios.

Discussion and Implications

Course dropping was widespread among the students at this large, urban community college. About two-thirds of the students had dropped at least one course during the six years under investigation. Congruent with community college withdrawal rates found in prior studies (Conklin, 1997; Florida Department of Education, 2011), 13.5% of all courses attempted by these students resulted in withdrawal. Discouragingly, in our sample student groups that have historically struggled to achieve college success (e.g., GED holders, developmental education, African American, part-time) were more likely to drop courses than their peers. Excessive course dropping (withdrawing from one or more of every five courses attempted) was associated with 44% lower odds of earning a credential from UCC and/or four-year transfer.

In a climate of increased budget reductions, excessive course dropping is problematic because it decreases the efficiency and overall performance of the higher education system (Florida Department of Education, 2011; Wheland et al., 2012). The sheer volume of course withdrawals processed at UCC during the six years under investigation undoubtedly generated substantial financial and time costs for many offices at the college, including the registrar, bursar, academic advising, and financial aid. Reducing inefficiencies at the institutional and

system level are important goals, but these should not overshadow the far-reaching negative consequences that excessive course dropping has on students. The W's remain on the student's transcript and represent lost tuition, along with squandered time and effort. Perhaps the more pressing question is one of effectiveness: are course withdrawal policies effective at reducing barriers to credential completion among community college students?

The flexibility to drop courses after ORD without receiving a punitive grade may serve as a form of protection for students, and when used prudently, can aid in their academic success (Hagedorn et al., 2007). But overuse and/or abuse of the course withdrawal function, which was most prevalent among UCC students from marginalized groups, can be a barrier to completion and transfer. At UCC, most students drop courses via their online self-service portal, without consultation with the course instructor or an academic advisor. While this approach may be efficient for the student and the college, it may also contribute to hasty decisions cast without reference to long-term goals. As such, excessive course dropping may resemble a 'cooling out' mechanism described by Clark (1960) by which students' (especially those with the least 'college knowledge') reduce their aspirations toward transfer and degree completion.

Rational choice theory predicts a student will withdraw from a course when the perceived costs of remaining enrolled outweigh the perceived benefits. Drawing on empirical studies of community college students' decision-making processes (Bailey et al., 2015a; McKinney, Mukherjee, Wade, Shefman, & Breed, 2015; Scott-Clayton, 2011; Wheland et al., 2012), we assert students' assessment of the cost-benefits of dropping a course is frequently inaccurate. This occurs because students do not have the requisite time, information, and/or guidance to make the optimal decision about withdrawing. Constraints in this decision-making process are most prevalent among students from marginalized backgrounds. Ultimately, students

are held responsible for their course withdrawal decisions and bear the consequences. But community colleges can do more to help students more accurately assess the costs and benefits of dropping courses.

The guided pathways approach being adopted by many community colleges is based on the premise that, "students are more likely to complete a degree in a timely fashion if they choose a program and develop an academic plan early on, have a clear road map of the courses they need to take to complete a credential, and receive guidance and support to help them stay on path" (Bailey, Jaggars, & Jenkins, 2015b, p. 1). The central components of guided pathways may prove directly beneficial in reducing course withdrawals. The approach provides a predictable schedule of courses so students know what courses will be offered in the future and when they will be offered. Therefore, students have time to avoid conflicts with their job hours and schedule childcare. Required academic plans ensure students enroll in the correct courses and at a level that is appropriate for their current abilities. Accurate placement reduces the chances of withdrawal because the student found the course too difficult, or too easy.

When dropping courses, students with stronger prior academic records are more likely to drop before ORD, while weaker academic students wait until later in the semester (Bosshardt, 2004). To allow students to better assess their likelihood for success earlier in the semester, some colleges have restructured courses (particularly STEM courses) so that an exam occurs before the add/drop deadline. Instruction that focuses on increasing student motivation, early alerts when students are at risk of failing/dropping a course, and proactive academic advising could reduce course dropping. Other strategies include expanding use of the "I" (incomplete) grade (Michaski, 2014) and posting syllabi online so students know what to expect before enrolling in a course (Babad et al., 2008). Providing support services like child-care and emergency financial

aid (e.g., micro grants or loans) could also help students overcome unexpected changes in their schedule that occur late in the semester.

In theory, non-academic and personal reasons for course withdrawal should affect all courses equally (Florida Department of Education, 2011). Therefore, the sizable variation in drop rates across different types of courses in our study suggest there are other systematic issues at work. The college can work with regular instructors of courses like General Chemistry, in which one out of every five students withdrew, and several writing-heavy courses (i.e., Composition I and II, Developmental Writing I and II) to reduce course drops. Second Start courses, while designed to serve those students who miss initial term registration deadlines, were dropped at significantly higher rates than regular term classes. Consistent with prior research (Jaggars, Edgecombe, & Stacey, 2013), fully online courses had higher withdrawal rates than face-to-face courses. To reduce withdrawal rates, courses offered in these non-traditional delivery formats, and the students in these courses, may require additional resources and support from the college.

There are numerous directions for future research on course dropping. While many institutions, and at least one state, have implemented polices that limit course withdrawals, empirical evidence about the impact of these policies is scarce. Consequently, future studies could examine the extent to which these policies have achieved their intended outcomes of improving efficiency, student persistence, and on-time graduation. There is also a need for further research examining how instructor characteristics influence course drop rates. The vast majority of course withdrawal studies are quantitative, but qualitative research that provides a more nuanced understanding of how students' rationalize course dropping would advance knowledge in this area. Findings from our study indicate there are equity issues associated with the course withdrawal function. Future studies can investigate how students' income level and

employment status influence their withdrawal decisions. Moving forward, it is also important to identity the reasons, beyond academic preparation, why some marginalized student groups (e.g., African American, GED holders) are much more likely to engage in excessive course dropping.

Conclusion

Degree completion is the result of a student successfully completing a series of individual courses. But findings from this study, as well as from prior research (Conklin, 1997; Florida Department of Education, 2011), indicate the grade "W" is prevalent on the transcripts of community college students. Withdrawals create administrative and financial inefficiencies for the college; but more importantly, excessive course dropping hinders students' academic momentum and degree completion. Moreover, course dropping is a particularly significant barrier to success for students from marginalized backgrounds. By identifying the types of students and courses that have high withdrawal rates, colleges can design targeted strategies and support services that mitigate unnecessary course dropping. Reducing course attrition is a foundational, yet often overlooked, mechanism for reducing community college attrition.

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Table 1

Descriptive Statistics for the Sample and Course Withdrawal Rates by Student Characteristics

Variables (n)	Sample Representation (%)	Courses Attempted (mean)	Course Withdrawals (mean)	Withdrawal Rate (%)	Confidence Interval (Lower, Upper)
Full Sample (5,878)	100.0	15.2	1.7	13.5	(13.0, 14.0)
Gender					
Female+ (3,303)	56.2	15.8	1.7	12.8	(12.2, 13.5)
Male (2,568)	43.7	14.3	1.7	14.3	(13.5, 15.1)*
Race/Ethnicity					
African American (1,889)	32.1	14.4	1.8	16.3	(15.4, 17.2)*
Hispanic (2,189)	37.2	15.2	1.5	11.8	(11.1, 12.6)*
White+ (1,094)	18.6	13.7	1.6	14.0	(12.8, 15.2)
Asian (706)	12.0	19.2	1.8	10.3	(9.2, 11.4)*
Age in 2007					
19 or younger+ (3,173)	54.0	17.0	1.8	12.6	(12.0, 13.1)
20-24 (1,443)	24.6	13.2	1.7	15.2	(14.1, 16.3)*
25 or older (1,259)	21.4	12.7	1.3	13.8	(12.6, 15.0)
Pre-College Credential					
HS Diploma+ (5,260)	89.5	15.5	1.7	13.1	(12.6, 13.6)
GED/Other (618)	10.5	12.6	1.7	16.8	(15.0, 18.6)*
Developmental Education Status					
Placed in Dev Ed (4,284)	72.9	15.9	1.8	13.9	(13.4, 14.5)*
College-Ready+ (1,594)	27.1	13.1	1.3	12.2	(11.3, 13.3)
Program of Study					
Academic+ (2,127)	36.2	16.0	1.7	13.0	(12.3, 13.8)
Technical (3,704)	63.0	14.7	1.6	13.7	(13.0, 14.3)
Enrollment Intensity					
Part-time (3,345)	56.9	12.7	1.5	14.6	(13.9, 15.4)*
Full-time+ (2,533)	43.1	18.4	2.0	11.9	(11.4, 12.5)
Cumulative College GPA					
Less than 2.0+ (1,802)	30.7	10.0	1.9	22.1	(20.9, 23.3)
2.0 – 3.0 (2,255)	38.4	18.3	2.0	11.4	(10.9, 12.0)*
3.01 – 4.0 (1,821)	31.0	16.4	1.1	7.5	(6.8, 8.1)*
Pell Grant Status					
Pell Grant Recipient (2,707)	46.1	17.9	2.0	13.7	(13.1, 14.4)
No Pell Grant+ (3,171)	53.9	12.8	1.4	13.2	(12.5, 14.0)

Federal Student Loan Status					
Federal Loan (1,059)	18.0	20.2	2.5	14.0	(13.2, 14.9)
No Federal Loan+ (4,819)	82.0	14.0	1.5	13.3	(12.8, 14.0)
Award and/or 4-Year Transfer					
No+ (3,709)	63.1	12.1	1.7	16.1	(15.4, 16.7)*
Yes (2,169)	36.9	20.3	1.6	9.0	(8.5, 9.6)

*p ≤ .05; + indicates reference group for CI test comparing group differences in mean course withdrawal rates.

Note: Three variables had missing cases: gender (n=7 missing cases); age (n=3 missing cases); and program of study (n= 47 missing cases).

Table 2

Withdrawal Rates for the Top 25 Highest Enrollment Courses

Course Title	Total Enrollments (n)	Withdrawals (n)	Withdrawal Rate (%)
General Chemistry	1,046	216	20.7
Anatomy & Physiology I	1,462	265	18.1
Composition II	3,744	623	16.6
Principles of Macroeconomics	1,166	190	16.3
Developmental Writing I	979	160	16.3
College Algebra	3,292	518	15.7
General Biology	1,916	298	15.6
U.S. History I	4,499	670	14.9
Composition I	4,833	693	14.3
Intermediate Algebra	3,398	478	14.1
Developmental Writing II	1,718	216	12.6
Anatomy & Physiology II	891	111	12.5
American Government I	3,954	455	11.5
U.S. History II	3,335	381	11.4
Developmental Math II	3,287	371	11.3
Developmental Math I	2,673	296	11.1
Introduction to Psychology	3,910	423	10.8
Art History I	1,001	99	9.9
Human Growth and Development	1,077	105	9.7
Developmental Reading II	1,598	152	9.5
Introduction to Sociology	2,836	264	9.3
Art Appreciation	1,407	129	9.2
College and Career Planning	3,101	272	8.8
American Government II	3,189	233	7.3
First-Year College Experience	2,542	181	7.2
TOTAL	**62,836**	**7,799**	**12.4**

Table 3

Withdrawal Rates by Select Course Characteristics

Course Characteristics	Total Enrollments (n)	Withdrawals (n)	Withdrawal Rate (%)	Confidence Interval (Lower, Upper)
Academic Term				
Fall+	55,050	6,256	11.4	(11.1, 11.6)
Spring	42,336	5,402	12.8	(12.5, 13.1)*
Summer	10,584	771	7.3	(6.8, 7.8)*
Term Duration				
Regular Term+	75,953	8,813	11.6	(11.4, 11.8)
Second Start	15,449	2,365	15.3	(14.8, 15.9)*
Mini-Session	1,427	114	8.0	(6.7, 9.5)*
Course Classification				
Academic+	73,390	9,202	12.5	(12.3, 12.8)
Technical/Workforce	16,082	1,220	7.6	(7.2, 8.0)*
Developmental	18,528	2,007	10.8	(10.4, 11.3)*
Delivery Format				
Face-to-Face+	92,451	10,114	10.9	(10.7, 11.1)
Distance Education	15,549	2,315	14.9	(14.5, 15.5)*

Table 4

Logistic Regression: The Assocation Between Course Dropping and UCC Credential Completion and/or 4-Year Transfer

	Odds Ratios (beta-coefficient/standard error)[1]		
	Demographics	Academic Behaviors	Course Dropping
Male (Female)	0.79* (-0.230 / 0.056)	0.92 (-0.085 / 0.062)	0.92 (-0.080 / 0.062)
Asian (White)	1.69* (0.527 / 0.100)	1.52* (0.421 / 0.110)	1.48* (0.394 / 0.111)
Black (White)	0.85 (-0.159 / 0.083)	1.52* (0.416 / 0.094)	1.52* (0.416 / 0.095)
Hispanic (White)	0.69* (-0.372 / 0.079)	0.79 (-0.230 / 0.087)	0.77 (-0.264 / 0.088)
Age	0.97* (-0.030 / 0.004)	0.95* (-0.050 / 0.005)	0.95* (-0.050 / 0.005)
Pell (Non-Pell)	1.15 (0.136 / 0.059)	1.15 (0.137 / 0.065)	1.16 (0.146 / 0.065)
Referred to Dev Reading, Writing and/or Math (College Ready)		0.66* (-0.423 / 0.068)	0.64* (-0.448 / 0.069)
GED (HS Diploma)		0.80 (-0.223 / 0.110)	0.82 (-0.204 / 0.111)
Full Time (Part Time)		1.70* (0.533 / 0.062)	1.68* (0.517 / 0.062)
Technical Major (Academic Major)		0.94 (-0.067 / 0.060)	0.94 (-0.060 / 0.061)
Cumulative GPA		2.66* (0.979 / 0.039)	2.51* (0.920 / 0.040)
High Course Drop Rate (Lower Course Drop Rate)[2]			0.56* (-0.573 / 0.086)
Sample Size[3]	5,875	5,875	5,875
-2 Log likelihood	7556.02	6485.21	6438.98
Nagelkerke R Square	.041	.262	.271
Percent Correctly Predicted (%)	64.5	72.1	73.2

[1] An asterisk indicates that the p-value associated with the odds ratios' coefficient is less than .001

[2] A course drop rate that is greater than 20% of courses attempted

[3] The sample size is reduced by 9 students because 7 students are missing data for gender and 2 are missing data for age