Impact of Late Registration on Student Success

NORTHERN VIRGINIA COMMUNITY COLLEGE

OFFICE OF INSTITUTIONAL RESEARCH, PLANNING, AND ASSESSMENT

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Executive Summary

This report provides a comprehensive review of existing research on the impact of late registration on student success. Specifically, it examines the characteristics of students more likely to register late and then explores the relationships between late registration and semester GPA, course completions, and overall persistence. The following is a summary of the key findings.

<u>Student Characteristics and Registration Behavior</u>

With the diverse array of studies conducted on topics related to late registration, it is no surprise that results varied somewhat across different studies. While differences do exist, the literature suggested that late registrants were more likely to be male rather than female (Zottos, 2005; Safer, 2009; Belcher & Patterson, 1990; Keck, 2007; Summers, 2000). White students were linked with earlier registration in several studies reviewed (Summers, 2000; Johnston, 2006; Keck, 2007), whereas African American students were more likely to be linked with late registration (Summers, 2000; Johnston, 2006). Older "non-traditional" students were found to be less likely to register on time than "traditional" college-age students (Cornille, 2009; Freer-Weiss, 2004; Johnston, 2006; Mendiola-Perez, 2004; Belcher & Patterson, 1990; Summers, 2000). Other characteristics associated with late registrants included part-time status (Cornille, 2009; Belcher & Patterson, 1990) or having earned lower grades in high school (Zottos, 2005; Freer-Weiss, 2004). On the other hand, degree-seeking status was associated with early registration behavior (Freer-Weiss, 2004; Belcher & Patterson, 1990). Students who were not eligible for financial aid were also more likely to have registered earlier than their counterparts who were eligible for aid (Summers, 2000; Johnston, 2006).

<u>Impact of Late Registration on Course Success</u>

Late registration was found to have a mostly negative association with semester GPA and course completion. Tincher-Ladner (2006), Summers (2000), Johnston (2006), Mendiola-Perez (2004), Zottos (2005), and Neighbors (1996) all found that early registrants had a higher semester GPA as compared to late registrants. Summers and Johnston both found that a 50 day increase in registration time corresponded to a 0.2 increase in GPA. Other studies revealed that late registrants were not only performing at lower levels in their courses but were also less likely to complete their courses and more likely to withdraw (Summers, 2000; Moore, Shulock, Ceja, & Lang, 2007; Zottos, 2005).

<u>Impact of Late Registration on Persistence</u>

Studies revealed a link between students' registration behavior and their likelihood to enroll in the following term. Late registrants were shown to be less likely to persist to the following term(s) in studies by Smith, Street, and Olivarez (2002), Tincher-Ladner (2006), Cornille (2009), Summers (2000), Wang and Pilarzyk (2007), and Freer-Weiss (2004). The likelihood of earning a certificate, earning an Associate's degree, or transferring to a 4-year institution was also lower for students who registered late for 20 percent or more of their courses (Moore, Shulock, Ceja, & Lang, 2007). Mendiola-Perez (2004) found that late registration also had a significant impact on persistence from what is traditionally a student's first year to their second.

Impact of Late Registration on Student Success

Introduction

This report aims to broaden NOVA's understanding of registration behavior and student success by examining the relevant research literature. The first section of this report describes what is known about who late registrants are and what common characteristics they may share. The two sections that follow discuss what is known about the impact of late registration on course success and persistence, respectively.

Section 1. Student Characteristics and Registration Behavior

This section describes the relationship between registration behavior and a variety of student characteristics. Given the diverse array of educational institutions and students studied, researchers' descriptions of late registrants varied considerably. However, some common themes emerged and are discussed below.

Gender

Most studies found that late registrants are significantly more likely to be male than female. Zottos, in a 2005 study of late registrants in the Los Angeles Community College District, observed that this may be because men:

> …may find difficulties in forming support groups and may be less attached or involved in the college activities. As a result, men may not perceive education as a high priority and may be less likely to consider college regulations very seriously, especially deadlines. Finally, men might avoid making inquiries about college regulations since doing so may be perceived as a weakness or ignorance. (p. 88)

These observations are supported by Safer's (2009) study, which used a sample of 7,200 students at all academic levels enrolled in mathematics classes at a 4-year university, and found that the percentage of males who registered late was significantly higher than the percentage of females (13 percent and 9 percent, respectively). Belcher and Patterson's (1990) study of Miami-Dade Community College found that 13 percent of males registered late, compared to 12 percent of females. Studies by Keck (2007), Neighbors (1996), and Summers (2000) also found that males were more likely to be late registrants than females. Keck's study examined the registration behaviors of 1,500 students at Kellogg Community College in Battle Creek, MI. Neighbors's study looked at registration data for 441 students from three Texas institutions: a community college, a 4-year public university, and a 4-year private university. Summers used a sample of 1,365 students at a small, rural community college in Illinois. Two studies – Cornille (2009), and Johnston (2006) – did not find any significant differences in registration behavior based on gender. Cornille's study examined the enrollment records of 7,317 first-time credit-seeking students enrolled at Madison Area Technical College in Madison, WI. Johnston's findings are particularly surprising, as the study was designed to replicate

Summers's findings from the 2000 study, using data from an unspecified midwestern community college.

Race/Ethnicity

Many studies found a correlation between race/ethnicity and registration behavior. Summers (2000), using data from a rural Illinois community college, found that White students registered an average of 32 days earlier than Black students. Johnston's replication of Summers's study found the difference to be slightly smaller – about 28 days – but still significant. Keck (2007) found that while a majority of White and Asian students registered on time (55 percent and 63 percent, respectively), 78 percent of Black and 66 percent of Hispanic students registered late. Belcher and Patterson's (1990) findings differed slightly from Keck's, in that while late registrants were most likely to be Black, they were least likely to be Hispanic. Freer-Weiss's (2004) study – of new students in a large metropolitan community college– was unique in finding that race/ethnicity had no impact on registration behavior.

Age

Several studies found that student age had an impact on registration behavior. Most of these studies found that "traditional" students (aged 18-21, with some exceptions) were more likely to register on time than older, "non-traditional" students (Cornille, 2009; Freer-Weiss, 2004; Johnston, 2006; Mendiola-Perez, 2004; Belcher & Patterson, 1990; Summers, 2000). Only Keck (2007) found that a majority (53 percent) of traditional-aged students enrolled late, while a majority (54 percent) of non-traditional aged students enrolled on time.

Other Characteristics

A few studies found relationships between registration behavior and students' academic goals, full- or part-time status, financial aid eligibility, and readiness for college. Findings varied with respect to the impact of students' educational goals and full- or part-time status on registration behavior. Freer-Weiss (2004) found that students who were seeking Associate's degrees were more likely to register late than those seeking Bachelor's degrees. Belcher and Patterson (1990) found that late registrants at Miami-Dade Community College were less likely to be pursuing a degree than on-time registrants, and Cornille's (2009) study of students at Madison Area Technical College found that whether a student was pursuing a degree was not related to registration behavior. In addition, both Cornille (2009) and Belcher and Patterson (1990) found that late registrants were more likely to attend college part-time than full-time.

Both Summers (2000) and Johnston (2006) found that a student's eligibility for financial aid had an impact on registration behavior. Summers found that students who were not eligible for financial aid registered an average of 20 days earlier than students who were eligible. Johnston's findings were smaller – only six and a half days – but showed a similar tendency. Keck (2007) conducted a series of interviews with late registrants and found that delays in

receiving financial aid and navigating the financial aid process were commonly cited as reasons why students registered late.

Finally, several studies found that factors related to students' readiness for college were linked to registration behavior. Both Zottos (2005) and Freer-Weiss (2004) found that late registrants tended to have earned lower grades in high school than on-time registrants. Additionally, Freer-Weiss found that new students who placed directly into an Intermediate Algebra course tended to register earlier than those who placed into Developmental Math. In contrast to Freer-Weiss's findings, however, a 2011 study by the Community College of Philadelphia Office of Institutional Research found that students enrolled in developmental coursework were more likely to register on time than students enrolled in non-developmental, or "college" courses.

Section 2. Impact of Late Registration on Course Success

This section describes the findings of relevant literature on the impact of late registration on course success, as measured by semester GPA, course grades, withdrawals, and course completions. Overall, much of the available research suggests that late registration negatively impacts course success.

<u>Semester GPA</u>

The most commonly used metric of student success in studies of late registration was impact on semester GPA, and several studies suggest that registration behavior is a strong predictor of semester GPA. For example, Tincher-Ladner's (2006) study of students at Mississippi Gulf Coast Community College found that students who registered on time had, on average, a 27 percent higher GPA than students who registered late. Looking at registration data from three consecutive Fall semesters, the average GPA of late registrants was 2.06, compared to 2.61 for on-time registrants. Summers (2000) conducted a multiple regression analysis of enrollment and registration behaviors as predictor variables for semester GPA and found that, holding other factors constant, a 50-day increase in when a student initially enrolled would result in a GPA increase of 0.15. Johnston (2006) found that a 50-day increase in registration resulted in a 0.2 increase in GPA. McWaine (2012) found a significant relationship between registration behavior and GPA for African American males. Using a sample of 5,389 African American male students at a large, suburban community college, McWaine found that the mean end-of-semester GPA of late registrants was 1.59, compared to 1.94 for on-time registrants. Zottos (2005) found that students who registered late for all courses earned a semester GPA 0.18 points lower than those who registered for all courses on time.

As many colleges offer both early and late registration, three studies specifically compared the three types of registrants – early, on-time, and late – to determine if differences in GPA would be significant. Mendiola-Perez (2004) found statistically significant differences in the semester GPAs of early and late registrants (p-value = 0.037), but no significant differences in GPA between regular and late registrants who were new first-time in college students at Palo Alto Community College in San Antonio, TX. Neighbors (1996), however, found that early registrants

had an average GPA of 3.02, compared with 2.65 for regular registrants and 2.05 for late registrants. Smith, Street, and Olivarez (2002) studied a sample of 251 new and returning students at West Texas Community College and found significant differences between early and late registrants who were returning students. Early registrants had an average GPA of 3.48, while late registrants had an average GPA of 2.69. No significant difference in GPA was found for new students, regardless of time of registration.

The Community College of Philadelphia Office of Institutional Research (2011) found no significant correlation between average semester GPA and registration behavior of new students. Of note, however, this study defined "late registration" as registration occurring anywhere from one to three weeks prior to the start of the term, while most other studies used the term "late registration" to refer to registration occurring on or after the first day of classes.

Course Success

Several studies found that late registration had a negative impact on course grades. A study of psychology undergraduates at a mid-sized public university in Texas found a significant inverse relationship between late registration and course grade – $r(253) = -0.21$, $p < 0.01$ – indicating that the later students registered, the lower their grades (Ford, Stahl, Walker, & Ford, 2008). Keck (2007) found that while the majority of late registrants earned a successful grade (defined as "C" or higher), timely registrants were, nonetheless, 88 percent more likely to earn a successful grade than late registrants. A t-test was performed to analyze the success and nonsuccess of the two groups and found that this difference was statistically significant. Hill's 2011 study of Lane Community College, which serves approximately 39,000 students in Eugene, Oregon, compared the success (defined as receiving a course grade of A, B, C, or P) of on-time and late registrants in courses in all subjects, and specifically in mathematics courses. In the samples for all subjects, on-time registrants succeeded at a rate of 83 percent, while late registrants had a 78 percent success rate. In the sample for mathematics courses, the success rate of on-time registrants was 77 percent, compared with 70 percent for late registrants. The difference in success rates of both samples was found to be statistically significant.

Course Withdrawals

Findings varied with respect to the impact of late registration on course withdrawals. The Hill (2011) study of Lane Community College investigated the weighted ratio between late registrant course withdrawals and on-time registrant course withdrawals and found that late registrants withdrew 33 percent more often than on-time registrants. Mendiola-Perez (2004) found a significant difference in the withdrawal rates of early registrants (13 percent) versus late registrants (19 percent); however, withdrawal rates for on-time and late registrants were the same. Smith, Street, and Olivarez (2002) found statistically significant differences for both new and returning students based on registration time. New students who registered on time withdrew from 10 percent of their courses, while those who registered late withdrew from 21 percent. Returning students who registered on time withdrew from 4 percent of their courses,

while late registrants withdrew from 13 percent. These findings were consistent with previous studies by Parks (1974) and Sova (1986), who also found that late registrants were more likely to withdraw from classes than on-time registrants.

Other studies, however, found no relationship between registration behavior and course withdrawals. Neighbors (1996) found that students generally dropped or withdrew from one class each semester, regardless of whether they registered early, on time, or late. Safer (2009) examined the registration behavior of 7,200 students at all academic levels in mathematics classes at a 4-year university. The study found that late registrants were no more likely to withdraw from classes than on-time registrants, with the exception of those students who were assigned to large lecture sections (where enrollment averaged 145 students). Late registrants in large lecture sections were significantly more likely to withdraw from the class than on-time registrants.

Course Completions

Research suggests that registration behavior impacts course completion. Summers (2000) found that the probability of semester course completion increased by 0.001 with each day that a student waited to register. A study of California community colleges found that students who registered late for more than one of their five courses had an overall course completion rate of 59 percent, compared to a completion rate of 63 percent for students who registered late less often (Moore, Shulock, Ceja, & Lang, 2007). The difference was found to be statistically significant. Zottos's (2005) study of the Los Angeles Community College System found that the inverse was also true: students who completed all courses were less likely to register late. In addition, the study found that late registration was less predictive of course completion than other variables, including student age, high school GPA, and ethnicity. Similarly, Cornille (2009) found that the mean completion rate of late registrants was 69 percent, compared to 73 percent for early and on-time registrants.

Section 3. Impact of Late Registration on Persistence

Of the literature reviewed for this report, 12 studies examined the impact of late registration on student persistence to the following semester, one study looked at student persistence to the following academic year, and one study investigated overall student completion rates (defined as earning a certificate, earning an Associate's degree, or transferring to a 4-year university). This section discusses the findings of these studies and their implications for student persistence.

Ten of the 12 studies that measured the impact of late registration on persistence to the next semester found a statistically significant negative impact. Smith, Street, and Olivarez (2002) found that, for both new and returning students, late registrants persisted to the next semester at significantly lower rates. They found that only 35 percent of new students who registered late persisted, compared with 80 percent of on-time registrants. For returning students, 80 percent of early, 64 percent of regular, and 42 percent of late registrants persisted. Tincher-Ladner (2006) found that over the Fall 2002, Fall 2003, and Fall 2004 semesters, a student who registered early or on time was 27 percent more likely to persist to the next semester than a late registrant. Cornille (2009) found that about 77 percent of on-time registrants persisted to the next semester, compared to 52 percent of students who registered late. Of those late enrollees, Cornille found that 29 percent registered after the first day of classes, and of that group, 58 percent did not persist. Summers (2000) found that for each additional day earlier that a student registered, the odds of that student persisting to the next semester increased by 1.2 percent.

The studies give several explanations for these findings. Wang and Pilarzyk (2007) surmised that late registration behaviors are "… likely to reflect less career preparedness and focus, as well as the role of extraneous factors influencing access to financial and other resources" (p. 31). Freer-Weiss (2004) similarly suggested that certain "pre-entry attributes," such as age, sex, race, academic ability, and enrollment objectives "are related to the time of application and, in turn, time of application is related to academic success and subsequent enrollment" (p.142). Summers (2000) explained that late registration behaviors "suggested levels of commitment, confidence, and focus, reflected in students' attrition or persistence the following semester" (p. 173).

The research reviewed for this report found that late registration had no statistically significant impact on persistence to the next semester. McWaine (2012) studied the persistence of African American males who registered on time versus African American males who registered late, and found that the means did not differ significantly at the $p < 0.05$ level, meaning that registration status did not have an impact on whether the students returned the following semester. Similarly, Mendiola-Perez (2004) found that although rates of retention to the next semester for early registrants were higher than that of both on-time and late registrants, there was no significant difference in next semester persistence.

Two studies looked at the relationship between late registration and longer-term persistence. One examined the impact of registration behavior on rates of completion, defined as earning a

certificate, earning an Associate degree, or transferring to a university (Moore, Shulock, Ceja, & Lang, 2007). The study found that the overall completion rate of students who registered late for 20 percent or more of their courses was about 6 percent lower than that of students who registered late for less than 20 percent of their courses. Mendiola-Perez (2004) found that, while late registration had no impact on next semester persistence, it did have a significant impact on persistence from what is traditionally a student's first year to their second.

Conclusion

The existing research on registration behavior spans a diverse array of educational institutions and students across various times, locations, and contexts. Though some variation exists, overall the research nonetheless suggests that late registration is negatively correlated to several aspects of completion and persistence, and that factors including gender, race, age, financial aid eligibility, and readiness for college may all be related to registration behavior.

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NOVA Mission and Strategic Goals: 2005 – 2015

Mission

With commitment to the values of access, opportunity, student success, and excellence, the mission of Northern Virginia Community College is to deliver world-class in-person and online post-secondary teaching, learning, and workforce development to ensure our region and the Commonwealth of Virginia have an educated population and globally competitive workforce.

Strategic Goals

I.   STUDENT SUCCESS – Northern Virginia Community College will move into the top tier of community colleges with respect to the college readiness, developmental course completion, retention, graduation, transfer, and career placement of its students.

II.   ACCESS – Northern Virginia Community College will increase the number and diversity of students being served to mirror the population growth of the region.

III.   TEACHING AND LEARNING – Northern Virginia Community College will focus on student success by creating an environment of world-class teaching and learning.

IV.   EXCELLENCE – Northern Virginia Community College will develop ten focal points of excellence in its educational programs and services that will be benchmarked to the best in the nation and strategic to building the College's overall reputation for quality.

V.   LEADERSHIP – Northern Virginia Community College will serve as a catalyst and a leader in developing educational and economic opportunities for all Northern Virginians and in maintaining the quality of life and economic competitiveness of the region.

VI.   PARTNERSHIPS – Northern Virginia Community College will develop strategic partnerships to create gateways of opportunity and an integrated educational system for Northern Virginians who are pursuing the American Dream.

VII.   RESOURCES – Northern Virginia Community College will increase its annual funding by $100 million and expand its physical facilities by more than one million square feet in new and renovated space. This includes the establishment of two additional campuses at epicenters of the region's population growth, as well as additional education and training facilities in or near established population centers.

VIII.   EMERGENCY PREPAREDNESS AND CONTINUITY OF OPERATIONS – Northern Virginia Community College will be recognized as a leader among institutions of higher education in Virginia for its development and testing of emergency response and continuity of operation plans.

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