

**Diablo Valley College
Pleasant Hill, California**

**Impact of Student Registration
Behavior on Academic Performance**

**Office of Planning, Research and Student Outcomes
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Impact of Student Registration Behavior on Academic Performance

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1. Executive Summary

Overview

The national and state calls for accountability have been forcing higher education institutions across the country to examine their programs, course offerings, and administrative practices. Enhancing student retention and reducing student attrition in community colleges has become more important as calls for accountability in the use of public funds intensify.

Student enrollment and registration behaviors have been studied because of their perceived impact on student success and student persistence. Such studies have the potential to add to our understanding of, and ability to, predict student attrition. The choice between keeping and abolishing late registration is not an easy one. Such action may mean placing a barrier for access and possibly a drop in enrollment that will result in a loss of state funding. However, community colleges have an obligation to establish policies that contribute to student success and persistence.

Literature Review

There are few scholarly studies specifically on the subject of late registration, and the published studies vary greatly in terms of research quality. These studies typically investigate GPA, course completion, college attrition and student characteristics by comparing late registrants with regular registrants.

The most substantial work on late registration has been carried out by Michael D. Summers in his doctoral dissertation at the University of Illinois (2000). Summers examined 1,365 students from three fall terms at a small rural community college in the Midwest. He found that students who persisted averaged initial enrollment for fall semester classes nearly 29 days earlier than students who dropped out. Summers also found that fall semester GPA was related to attrition. There was a statistically significant difference in the mean fall semester GPA of students who did not enroll in classes for spring semester as compared to those that did enroll. In a move that created a good deal of attention, Sinclair Community College in Dayton Ohio addressed the problem of high attrition by moving late registration opportunities to the week before school began in spring 2003, and students were advised that they no longer would be allowed to register for classes that had already begun.

The Charge

In spring of 2004, the Leadership Council requested that a task force be organized “to explore the feasibility and potential educational benefits of eliminating late registration at DVC (i.e., registration after the first day of class). The task force was to consider the implications of such a change in terms of student retention and success, class management, enrollment and student access. The task force will research the experience of community colleges that

have eliminated late registration. The task force will submit its recommendation to the Leadership Council as early as possible in the fall 2004 term.

The committee members include:

Sandra Trujillo-Holman, Chairperson
Mohamed Eisa, Planning and Research
Catherine Fites-Chavis, Admissions and Records
Cheryl Carter, Counseling
Toni Fanin, English
Phil Farmer, Mathematics
Debi Noonan, Information Center
Maia Mamulashvili, Student

This Study

The Late Registration Task Force asked the Office of Research to collect data regarding the correlation of late registration and student success and to examine a number of issues including the relative size of late registration, characteristics of late registrants, the impact of student registration behavior on course completion, and the impact of multiple variables on course success. The research study examined the records of approximately 122,000 students who enrolled at DVC over a period of six semesters, fall 2001 to spring 2004 (report attached). Research findings indicated the existence of three, rather than two, mutually exclusive groups of registrants. These groups are: early registrants, late registrants, and registrants who enroll both early and late due to the changes they made to fine tune their course schedules.

Relative Size of Registration Cohorts

Of the total number of registrants in the past three years (121,676), early registrants accounted for 64%, while late registrants represented 17%, and early-late registrants 19%.

Student Characteristics

The following are the major observations regarding student characteristics:

- The overall average participation rate in early registration was 64%, while late registration represented 17% and early-late registration 19%.
- Women had a consistently higher rate of participation in early registration (66.0%), compared to that for men (62%). In contrast, men participated in late registration at a higher rate (18%) than that for women (16%). In addition, men made more frequent changes in their schedules (20%), compared to that for women (18%). These participation rates were not significantly different from the average participation rates for the three registration cohorts.

- Young students (less than 25 years) changed their schedules more frequently (25%), compared to older students (11%). In contrast, young students participated less in early (62%) and in late registrations (13%), while older students (25 years and older) participated more in early (67%) and in late registrations (22%). Compared to the average participation rates for the three registration cohorts, the disparities in participation rates due to age were significant. These disparities were probably due to the differences in educational goals between the two groups.
- White students were more likely to register early (68%) and to make less frequent changes in their schedules (16%). Their participation rate in late registration was the same as the overall average (17%). Other ethnic groups participated less in early registration (61%) and more in late (18%) and early-late registration (21%). Compared to the overall average, the differences due to ethnicity were not significant.
- Students with unknown or unreported ethnicity represent mostly international students. Students in this group changed their schedules at a much higher rate than average (28.0% vs. 19.1%), but participated at below average rates in both early (59.3% vs. 64.2%) and late (13.3% vs. 16.7%) registrations.
- Full-time students had the highest rate of change in their schedules, compared to the overall average (36% vs. 19%), while part-time students changed their schedules less frequently (11%). In contrast, full-time students had a lower than average rate of participation in late registration (5% vs. 17%), while part-time students had a higher rate (23%). Full-time students' participation in early registration was also low, compared to that of part-time students (59% vs. 67%, respectively). The difference in the registration behavior between full-time and part-time students was highly significant. These disparities may be due to differences in age and educational goals of both groups.
- Students who had a transfer goal were more likely to shop around and change their schedules more frequently. Transfer-bound students had a higher than average rate of participation in early-late registration (25%) but a lower than average rate of participation in late registration (11%). Their participation in early registration was slightly below average.
- Students with a vocational goal had an above-average participation in early registration (69%) and above-average participation in late registration (19%), but below-average participation in course "shopping" (12%).
- Students with a personal goal of life-long learning had an above-average rate of participation in early registration (68%) and one of the highest levels of participation in late registration (24%), but fell significantly below the average in course shopping (8%).
- Students with a remedial education goal participated in early registration at a level slightly below average (63%). While they were not interested very much in

"shopping" (13%) they engaged in late registration at a much higher level than average (24%).

- Undecided students did not exhibit sharp differences from the average rates of participation for the three registration cohorts. However, they leaned more toward late registration (20%) and less toward early-late registration (17%). They participated in early registration at approximately the rate as that of the overall average.

In summary, the characteristics of students in the three registrant cohorts were as follows:

- **Early registrants** were mostly part-time, older, White females with vocational or life-long educational goals.
- **Late registrants** were mostly part-time, older, non-White males, who were more likely to pursue a vocational or a personal goal, or were undecided.
- **Early-Late registrants** were mostly full-time, young, non-White or international males who had a goal of transfer to four-year institutions.

Academic Performance

- The registration behavior of Diablo Valley College students was consistently related to their course success and retention rates, whether they were basic skills students or non-basic skills, and across the array of demographic variables. More specifically, students who registered early, then fine-tuned their schedules during the late registration period, had the best chance of performing well (success rate of 73%). Early registrants performed dependably well, if not as well as early-late registrants (success rate of 70%). Students who registered late had consistently lower success rates than students in the other two groups (success rate of 63%). In other words course "shopping" pays off.
- Basic skills students in the three registrant cohorts performed in the same relationships: late registrants performed the worst (success rate of 57%) and early-late registrants the best (success rate of 67%). Early registrants enrolled in basic skills had a success rate of 61%. However, the success rates of this group were lower than those of the college as a whole.

Multiple Variables

- The relationship of student registration behavior, student characteristics, and course success rates is very complex and may require further research. This relationship may be described as follows:
- Women had a higher course success rate than that of men, regardless of the registration cohort (an average of 72% for women vs. 67% for men). However, those who changed their schedules had success rates that were 10% to 11% higher than those

who enrolled late. Early registrants had success rates that were 6% higher than those who enrolled late.

- Students with an unknown ethnicity (mostly international students) had the highest course success rate (75%) regardless of the registration cohort. This group was followed by White students (72%) and Asians/Pacific Islanders (70%). African Americans (55%), Hispanics (64%) and Native Americans (63%) were under-achievers regardless of the registration cohort.
- Analysis of success rates by age categories indicates a mixed picture that requires further clarification. However, in general, older students (30+ years) who participated in early-late registration had higher success rates compared to that of the younger groups.
- On the average, full-time students (12+ units) had a success rate (74%) that was higher than that (65%) of part-time students (less than 12 units), regardless of the registration behavior. The disparity in success rates based on the registration cohorts was the largest for full-time students. Full-time early and full-time early-late registrants had success rates of 75% and higher. In contrast late registrants had a success rate of 61%. The large disparity of 14% in success rates was not in favor of late registration. The disparity in success rates of part-time students based on the registration behavior was much narrower with 1% to 3% gap among the cohorts.
- The relationship of registration behavior to success rate is not conclusive because of the interaction of student characteristics. However, one conclusion is clear; shopping for courses pays off regardless of other variables.

Conclusions

Using this study, the committee came up with the following conclusions:

- Although a review of the literature indicates that institutions that have discontinued late registration have had successful outcomes, their results are short-term (1 year or less). At this time there is no evidence of long-term successful outcomes.
- The relationship between student characteristics, registrant cohorts, and course success rates are extremely complex and could include the interaction of several variables, (i.e. age, ethnicity, gender, full-time/part-time, etc.). Because early-late (and primarily young) registrants are the star performers, and young students are the majority at DVC, any move to abolish the late registration period could have deleterious and unwanted consequences on student access. Abolishing late registration may result in lowering the enrollment numbers of young students, and limiting access for the under-represented groups, especially the African American students.
- Students are part of the consumer society and the age of the internet “surfing”. They enjoy “shopping” around for courses and instructors during the late registration pe-

riod. It is clear that those who shop around have higher course success and retention rates than others. As an alternative to abolishing late registration, the college may want to consider limiting the late registration period.

Further research is needed to examine a number of important issues including the following:

- Impact of student registration behavior on persistence and attrition.
- Impact of multiple variables on student academic success and registration behavior.
- The relationship of student registration behavior to enrollment status (new students, continuing students, transfer student, etc.)
- The impact of registration behavior on course success for international students.
- The effect of reducing the late registration period on the success rate of basic skills students across disciplines.

2. Introduction

Student registration usually takes place during announced dates prior to the start of each academic term. However, the majority of institutions allow for a late registration period at the beginning of the term in which the course is offered, although some charge a fee for the privilege of registering late. The late registration period may intrude into the semester by one or more weeks. Lately, some institutions (e.g., Sinclair Community College in Dayton, Ohio¹) have decided to abolish the late registration period and instead move the late registration opportunity to the week before school begins. Students were advised that they no longer would be allowed to register for a class that had already begun. These changes were made in response to research findings that pointed to less than favorable conditions for student success.

The choice between keeping and abolishing late registration is not an easy one. Community colleges have traditionally prided themselves on accessibility and the fact that students could come to school at any time. Abolishing late registration may mean a drop in enrollment and therefore a loss of state funding. However, as institutions of higher education, community colleges have an obligation to establish policies that contribute to the success of their students rather than hold on to traditions that may program them for failure. Undoubtedly, the shift in paradigm is expected to face a great deal of criticism, both from within the academic community as well as from the larger community outside the walls of academe.

In 2004, the Leadership Council at Diablo Valley College created a task force to study the issue of late registration. The charge of the task force was *“To explore the feasibility and potential educational benefits of eliminating late registration at DVC (i.e., registration after the first day of class). The task force will consider the implications of such a change in terms of student retention and success, class management, enrollment and student access. The task force will research the experience of community colleges that have eliminated late registration. The task force will submit its recommendation to the Leadership Council as early as possible in the fall 2004 term.”*

Purpose

The purpose of this study is to examine the impact of different registration dates on student success and retention at Diablo Valley College. The study will address the following topics as they relate to different registration dates:

- Size of registration cohorts
- Student characteristics
- Academic performance
 - ⇒ Overall success and retention
 - ⇒ Performance of basic skills students
 - ⇒ Impact of Multiple Variables

¹“Abolishing Late Registration”, *Innovation Abstracts*, Vol. XXVI, No. 9, March 26, 2004. National Institute for Staff and Organizational Development (NISOD), College of Education, The University of Texas at Austin, pp. 1-2.

Methodology

Student enrollment data for DVC will be obtained from two sources:

- **Datatel** administrative software system at Contra Costa Community College District. This is the major source of information for the study. Head count, demographic and academic performance of students in various categories of enrollment will be obtained from Datatel.
- California Community Colleges Chancellor's Office **Data Mart**. This online web source will be used mainly for benchmarking data for the institution as a whole.

Data from the first source will be apportioned into three mutually exclusive groups based on the date of students' registration at DVC. These three groups are:

- **Early registrants only:** Students who enroll at DVC between the first day of registration and the first day of instruction for the respective term.
- **Late registrants only:** Students who enroll at DVC between the first day of instruction and the last day for adding courses.
- **Both early and late registrants:** Students who register early but add courses during the late registration period.

The count for each of these three groups will be unduplicated. The period of analysis will cover six terms (fall and spring of 2001-02 to 2003-04).

Earlier in this research study, it was thought that early registrants and late registrants were two mutually exclusive groups. However as the research proceeded, it was discovered that students may register in either periods or in both depending on the date of initial registration and the subsequent changes in schedules. The magnitude of the number of students who participated in both early and late registration was large enough to warrant the creation of a separate group. Hence, the research design was modified to take this important matter into consideration as the following Venn diagrams indicate.

Figure 1a. Initial Research Design

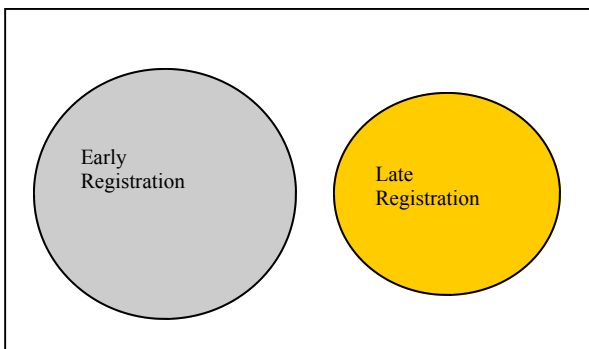
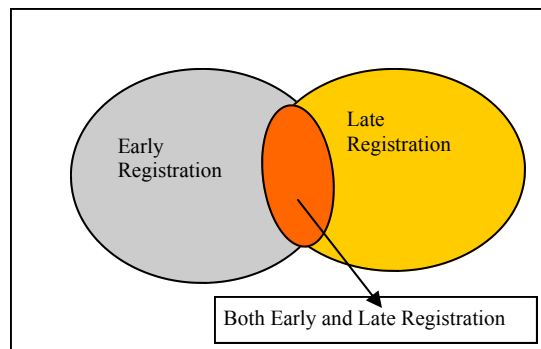


Figure 1b. Modified Research Design



Literature Review

There has been much research on student attrition, but there are few scholarly studies specifically on the subject of late registrants in U.S. community colleges. Perkins (2002) examined the records of 959 degree-seeking students, seeking to discover the relationships between one northwest Illinois community college's late registration policy and first-time student retention and academic performance. She found that late registering students were more likely to be men and part-time students, but found no significant associations in regard to the ethnicity, age, or course placement recommendations. She also found no correlation between late registration and GPA, fall course success rate, or fall-to-spring retention. The college she worked with is considering the introduction of faculty advising to deal with the "tremendous backlog" of students trying to see an advisor prior to each semester," which some felt contributed to students' delays in enrolling, and "the addition of late starting and more flexible scheduling options."

Many community colleges have a penalty fee in place for late-registering students; it ranges from \$24 per day up to \$250, down to \$10 per term.

Henderson Community College in Kentucky is instituting a new "No Late Registration" policy in January 2005. Students cannot register for or add regular semester classes after the semester begins. Likewise, in a move that has created a good deal of attention, Sinclair Community College in Dayton, Ohio addressed high attrition by moving late registration opportunities to the week before school began in spring 2003, and students were advised that they no longer would be allowed to register for a class that had already begun. Dunn and Mays (2004) state that, due to this change, persistence from spring to fall quarters for all students registered in spring 2003 increased by 0.7% (58.6% to 59.3%) over spring to fall 2002; and persistence from spring to fall for new degree-seeking students registered in spring 2003 increased 7.3% over spring to fall 2002 (48.8% to 52.1%). Also, fall 2002 to fall 2003 retention improved from the 2001-02 baseline of 45% to 47.9% (total 2.9%) for all students and 52.5% for new, degree-seeking students.

Weiss (1999) interviewed advisors to get their perceptions of students who register late when they enroll in community college. Her qualitative approach is not supported by quantitative data and analysis, however.

The most substantial work on late registration has been carried out by Michael D. Summers in his doctoral dissertation at the University of Illinois, Enrollment and Registration Behaviors As Predictors of Academic Outcomes for Full-Time Students in a Rural Community College (2000). In "Attrition Research At Community Colleges," (2003), Summers mentions Belcher and Patterson's (1990) identification of late registrant characteristics: late registrants were not pursuing a degree, tended to be former students, and were more likely to be part-time students, males, Black non-Hispanics, and older than recent high school graduates. Summers also refers to the study (of 251 students) by Street, Smith and Olivarez (2001) that found that for new students, 80% of those who registered during the regular period persisted to the next semester as compared to only 35% who registered late. For returning students,

64% of those who registered during the regular period persisted, as compared to 42% of late registrants.

In his own dissertation, Summers examined 1,365 students from three fall semesters at one small rural community college in the Midwest. He found that students who persisted averaged initial enrollment for fall semester classes nearly 29 days earlier than students who dropped out. Using a logistic regression model, he found that *for each additional day earlier initially enrolled for the fall semester, the odds of enrolling for the spring semester increased by 1.3%*; that for each course added for the fall semester, the odds of enrolling for the spring semester increased by 52.8%; that for each additional one-point increase in fall semester GPA, the odds of enrolling for the spring semester increased by 45.9%; that for each additional course dropped by the student in the fall semester, the odds of enrolling for the spring semester decreased by 24.5%; and for each additional one-unit increase in fall semester course completion, the odds of enrolling for the spring semester increased by 5.25 times. The best logistic regression model that predicted attrition from enrollment and registration behaviors and academic outcomes, while holding student characteristics constant, included number of course drops, *when a student initially enrolled*, number of course adds, fall semester GPA, and fall semester course completion.

Registration Dates

The length of time allowed for registration varies significantly between the fall and spring terms. However, the total registration time for all these academic periods (summer, fall, and spring) creates the impression of a continuous ongoing registration throughout the year.

The registration time for the fall term spans a period of more than four months, beginning at the end of April and continuing to the end of August. For the spring term, the registration period is relatively shorter; but it lasts for almost two months, from the end of November to the end of January of the following year. Summer registration begins in April and continues throughout June and July. The discussion that follows focuses on the regular academic terms of fall and spring. Each registration period consists of two segments:

- Early registration lasts for 112 days in the fall (end of April to the middle of August) and for approximately 50 days in the spring (late November to the middle of January)
- Late registration lasts for 12 days in the fall (middle to end of August) and for 15 days in the spring (middle to end of January)

The following tables present these dates for both the fall and spring terms. The tables indicate that registration for the regular academic terms lasted for more than six months. This period does not include other times allowed for enrollment in short courses. Undoubtedly, this is a relatively long period of time that enhances access to higher education throughout the year.

Table 1a. Registration Dates for Fall Terms, 2001 to 2003

Term and Period Dates			Number of Days	
Term	Beginning Date	Ending Date	Early/Late Registration	Total Registration Period to End of August
Fall 2001				
Early	14-May	19-Aug	98	110
Late	20-Aug	31-Aug	12	
Fall 2002				
Early	29-Apr	18-Aug	112	124
Late	19-Aug	30-Aug	12	
Fall 2003				
Early	28-Apr	17-Aug	112	124
Late	18-Aug	29-Aug	12	

Source: DVC Course Schedule

Table 1b. Registration Dates for Spring Terms, 2002 to 2004

Term and Period Dates			Number of Days	
Term	Beginning Date	Ending Date	Early/Late Registration	Total Registration Period to End of January
Spring 2002				
Early	26-Nov	13-Jan	49	64
Late	14-Jan	28-Jan	15	
Spring 2003				
Early	25-Nov	12-Jan	49	64
Late	13-Jan	27-Jan	15	
Spring 2004				
Early	24-Nov	14-Jan	52	67
Late	15-Jan	29-Jan	15	

Source: DVC Course Schedule

Meaning of Terms

- Student **persistence** refers to a student's continued enrollment at an institution from one semester to another.
- Student **attrition** and student dropout refer to a student's failure to enroll from one semester to another.
- Course **success** rate refers to the percentage of grades A, B, C, and CR over all grades.
- Course **retention** rate refers to the percentage of all grades except W over all grades.

3. Registration Cohorts

Examination of the enrollment head count reveals that a total of 121,676 students registered for classes over a period of six regular terms (fall 2001 to spring 2004). This number consists of three components as follows:

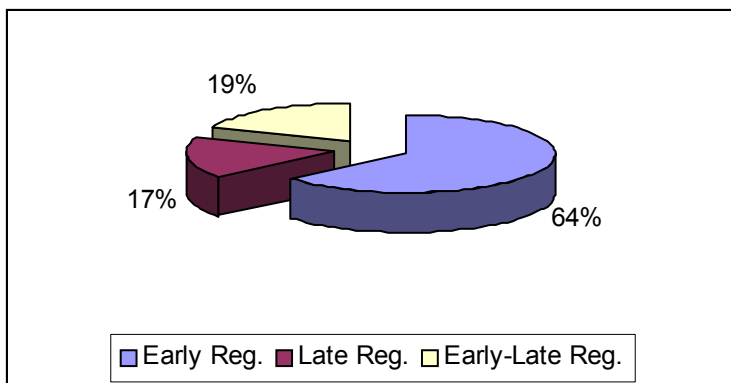
- **Early Registrants:** representing a total of 78,123 students, or 64.2%
- **Late Registrants:** accounting for a total of 20,333 students, or 16.7%
- **Early-Late Registrants** representing a total of 23,220, or 19.1% .

The differences between the fall and spring terms were not significant, and the breakdown remained relatively stable throughout the past six terms. While the number of late registrants constitutes a relatively small proportion of the total enrollment head count, there is a substantial number of transactions that occurs within a relatively short period of time of 12 to 15 days. In contrast, early registrants have between 49 and 112 days to enroll. On average, the number of transactions (one student = one transaction) per day for late registration amounts to 1,613, compared to only 63 transactions per day during early registration. The significant surge in activities during the late registration period taxes the resources of the college and places undue burden on the staff at the beginning of each term. [Note: short-term courses were not considered separately in this study.]

Table 2. Headcount Enrollment by Registration Cohorts, Fall 2001 to Spring 2004

Term	Total		Early Registration		Both Early and Late		Late Registration	
	Count	%	Count	%	Count	%	Count	%
Fall 2001	20,167	100.00%	12,838	63.70%	3,903	19.40%	3,426	17.00%
Fall 2002	20,207	100.00%	13,274	65.70%	3,690	18.30%	3,243	16.00%
Fall 2003	20,077	100.00%	13,300	66.20%	3,727	18.60%	3,050	15.20%
Total for Fall	60,451	100.00%	39,412	65.20%	11,320	18.70%	9,719	16.10%
Spring 2002	20,265	100.00%	12,821	63.30%	3,865	19.10%	3,579	17.70%
Spring 2003	20,719	100.00%	12,922	62.40%	4,044	19.50%	3,753	18.10%
Spring 2004	20,241	100.00%	12,968	64.10%	3,991	19.70%	3,282	16.20%
Total for Spring	61,225	100.00%	38,711	63.20%	11,900	19.40%	10,614	17.30%
Total for Fall and Spring	121,676	100.00%	78,123	64.20%	23,220	19.10%	20,333	16.70%

Figure 2. Proportionate Share of Early and Late Registration, 2001-02 to 2003-04



4. Student Characteristics

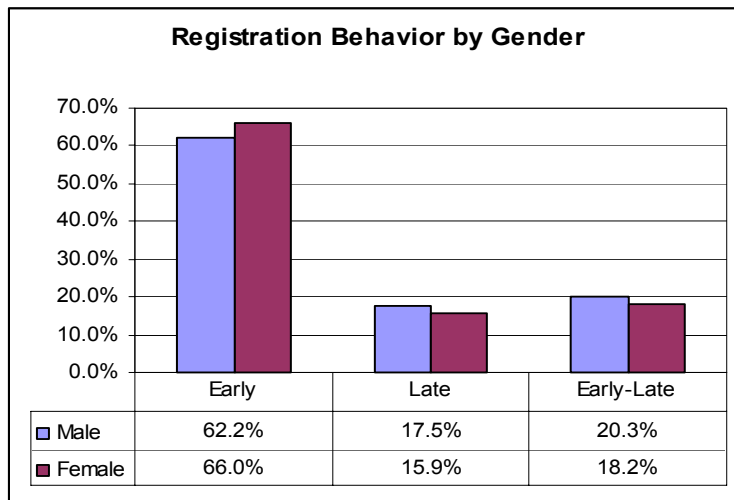
Discussion of student characteristics focuses on five areas, namely: gender, age, ethnicity, unit load and educational goals. The demographic data is based on head counts and will be examined for each of the three mutually exclusive groups referenced earlier.

Gender

The following observations may be made regarding the registration patterns by gender:

- Men participated in early registration at a rate lower than the overall average (62.2% vs. 64.2%). In contrast, they participated in late (17.5% vs. 16.7%) and in early-late registration (20.3% vs. 19.1%) at rates that were higher than average.
- Women participated in registration in early registration at a rate higher than average (66.0% vs. 64.2%), but their participation rates in late (15.9% vs. 16.7%) and early-late (18.2% vs. 19.1%) registration were below the overall average for the respective registration cohorts.
- Analysis of the trend for the six terms of the study indicated that women had a consistently higher rates of participation in early registration, while men had consistently higher rates of participation in late registration and in early-late registration. The difference between genders was not significant.

Figure 3. Registration Behavior by Gender 2001-02 to 2003-04



Source: Datatel

Table 3. Registration Behavior by Gender, 2001-02 to 2003-04

Type of Registration	Male		Female		Unknown		Total	
	Count	%	Count	%	Count	%	Count	%
Fall 2001								
Early	5,392	61.1%	7,184	65.7%	262	63.9%	12,838	63.7%
Late	1,604	18.2%	1,740	15.9%	82	20.0%	3,426	17.0%
Both	1,829	20.7%	2,008	18.4%	66	16.1%	3,903	19.4%
Total	8,825	100.0%	10,932	100.0%	410	100.0%	20,167	100.0%
Fall 2002								
Early	5,578	63.2%	7,348	67.8%	348	63.6%	13,274	65.7%
Late	1,550	17.6%	1,585	14.6%	108	19.7%	3,243	16.0%
Both	1,700	19.3%	1,899	17.5%	91	16.6%	3,690	18.3%
Total	8,828	100.0%	10,832	100.0%	547	100.0%	20,207	100.0%
Fall 2003								
Early	5,783	65.0%	7,207	67.5%	310	62.0%	13,300	66.2%
Late	1,389	15.6%	1,569	14.7%	92	18.4%	3,050	15.2%
Both	1,728	19.4%	1,901	17.8%	98	19.6%	3,727	18.6%
Total	8,900	100.0%	10,677	100.0%	500	100.0%	20,077	100.0%
Spring 2002								
Early	5,551	61.7%	6,998	64.7%	272	61.7%	12,821	63.3%
Late	1,626	18.1%	1,845	17.0%	108	24.5%	3,579	17.7%
Both	1,825	20.3%	1,979	18.3%	61	13.8%	3,865	19.1%
Total	9,002	100.0%	10,822	100.0%	441	100.0%	20,265	100.0%
Spring 2003								
Early	5,529	60.0%	7,086	64.3%	307	63.0%	12,922	62.4%
Late	1,774	19.2%	1,898	17.2%	81	16.6%	3,753	18.1%
Both	1,914	20.8%	2,031	18.4%	99	20.3%	4,044	19.5%
Total	9,217	100.0%	11,015	100.0%	487	100.0%	20,719	100.0%
Spring 2004								
Early	5,708	62.3%	6,935	65.8%	325	60.4%	12,968	64.1%
Late	1,518	16.6%	1,641	15.6%	123	22.9%	3,282	16.2%
Both	1,934	21.1%	1,967	18.7%	90	16.7%	3,991	19.7%
Total	9,160	100.0%	10,543	100.0%	538	100.0%	20,241	100.0%
Grand Total								
Early	33,541	62.2%	42,758	66.0%	1,824	62.4%	78,123	64.2%
Late	9,461	17.5%	10,278	15.9%	594	20.3%	20,333	16.7%
Both	10,930	20.3%	11,785	18.2%	505	17.3%	23,220	19.1%
Grand Total	53,932	100.0%	64,821	100.0%	2,923	100.0%	121,676	100.0%
Relative Share	44.3%		53.3%		2.4%		100.0%	

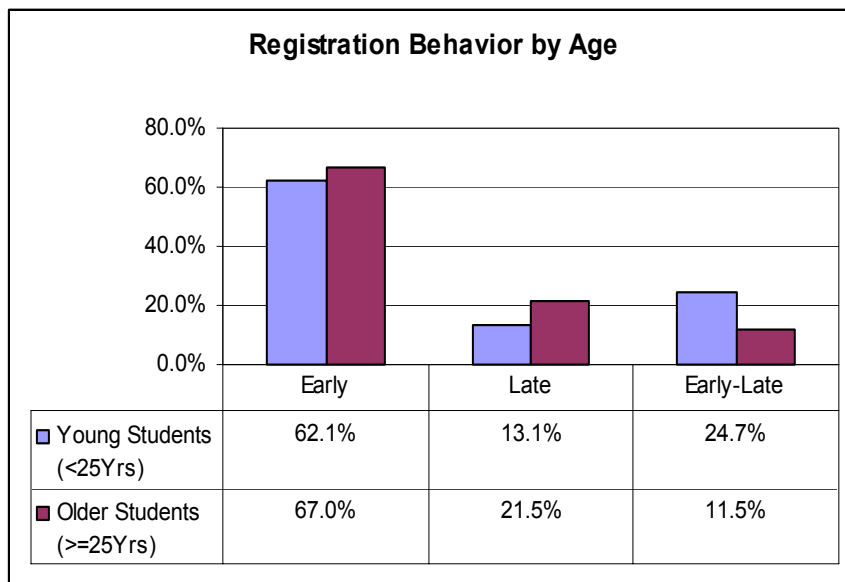
Source: Datatel

Age

The following observations may be made regarding the registration patterns by age:

- Young students (less than 25 years) changed their schedules more frequently than their older counterparts. The early-late participation rate of this group was higher than average (24.7% vs. 19.1%). In contrast, their rates of participation in early (62.1% vs. 64.2%) and in late (13.1% vs. 16.7%) registration were below the overall average for the respective registration cohorts. As will become evident later, young students were mostly full-time transfer students who will fine-tune their schedules to improve their chances for success.
- Older students (25 years and older), on the other hand, enrolled in specific courses to enhance their careers, or to earn a degree or certificate, but they did not make frequent changes in their schedules as the relatively young learners. These older adults had a lower rate of early-late registration (11.5% vs. an overall average of 19.1%), but a higher rate of participation in early (67.0% vs. 64.2% for the average) and in late registration (21.5% vs. 16.7% for the average).

Figure 4. Registration Behavior by Age, 2001-02 to 2003-04



Source: Datatel

Further details about the registration behavior by age appears in the following table.

Table 4. Registration Behavior by Age, 2001-02 to 2003-04

Type of Registration	< 20 Years		20-24 Years		25-29 Years		30-34 Years		35-39 Years		40-49 Years		50+ Years		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Fall 2001																
Early	1,081	56.9%	5,590	61.1%	1,570	65.3%	911	66.3%	783	70.2%	1,523	69.7%	1,380	67.7%	12,838	63.7%
Late	452	23.8%	1,072	11.7%	452	18.8%	284	20.7%	229	20.5%	452	20.7%	485	23.8%	3,426	17.0%
Both	367	19.3%	2,491	27.2%	382	15.9%	179	13.0%	103	9.2%	209	9.6%	172	8.4%	3,903	19.4%
Total	1,900	100.0%	9,153	100.0%	2,404	100.0%	1,374	100.0%	1,115	100.0%	2,184	100.0%	2,037	100.0%	20,167	100.0%
Fall 2002																
Early	2,820	63.5%	4,829	64.7%	1,365	65.7%	848	65.9%	685	68.4%	1,460	70.1%	1,267	68.4%	13,274	65.7%
Late	618	13.9%	878	11.8%	425	20.4%	267	20.7%	208	20.8%	413	19.8%	434	23.4%	3,243	16.0%
Both	1,003	22.6%	1,755	23.5%	289	13.9%	172	13.4%	108	10.8%	211	10.1%	152	8.2%	3,690	18.3%
Total	4,441	100.0%	7,462	100.0%	2,079	100.0%	1,287	100.0%	1,001	100.0%	2,084	100.0%	1,853	100.0%	20,207	100.0%
Fall 2003																
Early	3,090	64.9%	4,850	64.5%	1,439	68.0%	804	67.9%	677	68.8%	1,323	71.2%	1,117	67.2%	13,300	66.2%
Late	596	12.5%	890	11.8%	343	16.2%	234	19.8%	200	20.3%	367	19.8%	420	25.3%	3,050	15.2%
Both	1,072	22.5%	1,775	23.6%	333	15.7%	146	12.3%	107	10.9%	168	9.0%	126	7.6%	3,727	18.6%
Total	4,758	100.0%	7,515	100.0%	2,115	100.0%	1,184	100.0%	984	100.0%	1,858	100.0%	1,663	100.0%	20,077	100.0%
Spring 2002																
Early	1,326	58.5%	5,405	61.1%	1,480	63.0%	934	67.5%	786	70.8%	1,527	68.8%	1,363	65.1%	12,821	63.3%
Late	570	25.2%	1,015	11.5%	481	20.5%	271	19.6%	222	20.0%	471	21.2%	549	26.2%	3,579	17.7%
Both	370	16.3%	2,424	27.4%	388	16.5%	179	12.9%	102	9.2%	221	10.0%	181	8.6%	3,865	19.1%
Total	2,266	100.0%	8,844	100.0%	2,349	100.0%	1,384	100.0%	1,110	100.0%	2,219	100.0%	2,093	100.0%	20,265	100.0%
Spring 2003																
Early	1,032	56.2%	5,822	61.8%	1,594	62.4%	890	64.4%	681	63.2%	1,534	67.3%	1,369	63.3%	12,922	62.4%
Late	511	27.8%	974	10.3%	526	20.6%	309	22.3%	276	25.6%	535	23.5%	622	28.8%	3,753	18.1%
Both	293	16.0%	2,632	27.9%	433	17.0%	184	13.3%	120	11.1%	211	9.3%	171	7.9%	4,044	19.5%
Total	1,836	100.0%	9,428	100.0%	2,553	100.0%	1,383	100.0%	1,077	100.0%	2,280	100.0%	2,162	100.0%	20,719	100.0%
Spring 2004																
Early	2,502	58.1%	4,972	63.8%	1,485	67.6%	888	69.6%	692	68.5%	1,275	67.8%	1,154	64.9%	12,968	64.1%
Late	690	16.0%	873	11.2%	359	16.3%	246	19.3%	213	21.1%	419	22.3%	482	27.1%	3,282	16.2%
Both	1,113	25.9%	1,948	25.0%	354	16.1%	141	11.1%	105	10.4%	187	9.9%	143	8.0%	3,991	19.7%
Total	4,305	100.0%	7,793	100.0%	2,198	100.0%	1,275	100.0%	1,010	100.0%	1,881	100.0%	1,779	100.0%	20,241	100.0%
Grand Total																
Early	11,851	60.8%	31,468	62.7%	8,933	65.2%	5,275	66.9%	4,304	68.4%	8,642	69.1%	7,650	66.0%	78,123	64.2%
Late	3,437	17.6%	5,702	11.4%	2,586	18.9%	1,611	20.4%	1,348	21.4%	2,657	21.2%	2,992	25.8%	20,333	16.7%
Both	4,218	21.6%	13,025	25.9%	2,179	15.9%	1,001	12.7%	645	10.2%	1,207	9.7%	945	8.2%	23,220	19.1%
Grand Total	19,506	100.0%	50,195	100.0%	13,698	100.0%	7,887	100.0%	6,297	100.0%	12,506	100.0%	11,587	100.0%	121,676	100.0%
Relative Share	16.0%		41.3%		11.3%		6.5%		5.2%		10.3%		9.5%		100.0%	

Source: Datatel

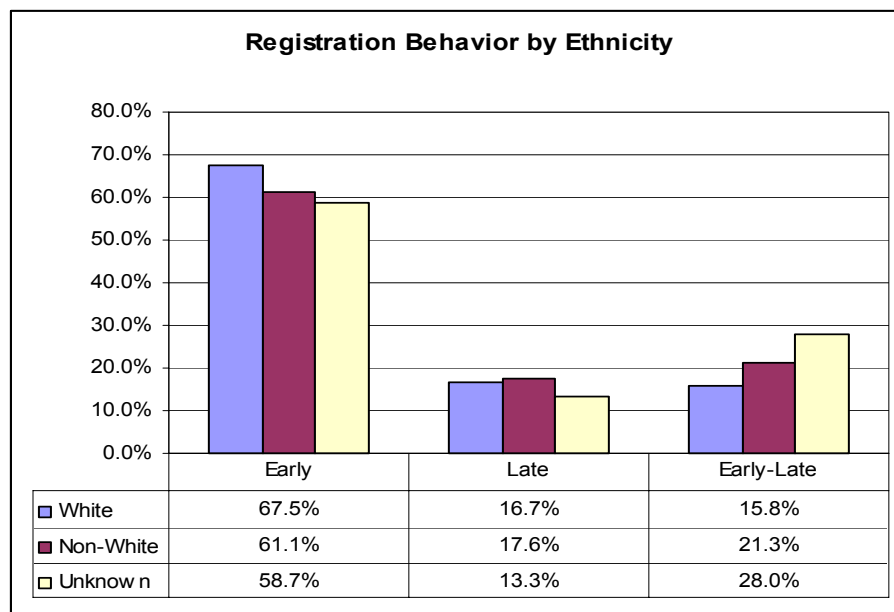
Ethnicity

The following observations may be made regarding the registration behavior by ethnicity:

- White students participated in early registration at a rate higher than that of the overall average (67.5% vs. 64.2%). The rates of participation for the other groups in descending order were: Hispanics, 63.7%; Native Americans, 63.3%; African Americans, 61.3%; other non-Whites, 59.9%; and Asians/Pacific Islanders, 59.7%. The unknown category which included international students had an early registration participation rate of 58.7%.
- African American students participated in late registration at a higher than average rate (19.0% vs.16.7%). Those with an unknown ethnicity had the lowest rate (13.3%) of participation in early registration. The rates of participation in late registration for other ethnic groups in descending order were: Native Americans, 18.5%; Asians/Pacific Islanders, 17.5%, other Non-Whites, 17.4%; Hispanics, 17.0% and Whites, 16.7%.
- Participation in both early and late registration was highest among persons with unknown ethnicity (28.0% vs. 19.1% for the average) and lowest among White students (15.8%). The rates of participation for other groups in descending order were: Asian/Pacific Islanders, 22.8%; other Non-Whites, 22.7%; African Americans, 19.7%; Hispanics, 22.8%; and Native Americans, 18.2%.

Additional details appear in Table 5.

Figure 5. Registration Behavior by Ethnicity, 2001-02 to 2003-04



Source: Datatel

Table 5. Registration Behavior by Ethnicity, 2001-02 to 2003-04

Type of Registration	African-American		Asian or Pacific Isl		Hispanic		Native American		Other Non-White		White		Unknown		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Fall 2001																
Early	540	56.7%	2,128	58.4%	1,392	63.7%	97	71.9%	411	60.2%	7349	67.6%	921	54.3%	12,838	63.7%
Late	203	21.3%	601	16.5%	387	17.7%	13	9.6%	113	16.5%	1838	16.9%	271	16.0%	3,426	17.0%
Both	210	22.0%	914	25.1%	405	18.5%	25	18.5%	159	23.3%	1687	15.5%	503	29.7%	3,903	19.4%
Total	953	100.0%	3,643	100.0%	2,184	100.0%	135	100.0%	683	100.0%	10,874	100.0%	1,695	100.0%	20,167	100.0%
Fall 2002																
Early	597	62.4%	2,273	60.7%	1,414	64.2%	83	61.5%	382	59.6%	7342	69.3%	1183	61.1%	13,274	65.7%
Late	189	19.8%	648	17.3%	391	17.7%	27	20.0%	109	17.0%	1659	15.7%	220	11.4%	3,243	16.0%
Both	170	17.8%	821	21.9%	398	18.1%	25	18.5%	150	23.4%	1592	15.0%	534	27.6%	3,690	18.3%
Total	956	100.0%	3,742	100.0%	2,203	100.0%	135	100.0%	641	100.0%	10,593	100.0%	1,937	100.0%	20,207	100.0%
Fall 2003																
Early	644	62.3%	2,359	62.7%	1,563	65.5%	80	62.0%	392	62.5%	7027	69.1%	1235	62.8%	13,300	66.2%
Late	194	18.8%	612	16.3%	359	15.0%	25	19.4%	105	16.7%	1536	15.1%	219	11.1%	3,050	15.2%
Both	195	18.9%	790	21.0%	464	19.4%	24	18.6%	130	20.7%	1610	15.8%	514	26.1%	3,727	18.6%
Total	1,033	100.0%	3,761	100.0%	2,386	100.0%	129	100.0%	627	100.0%	10,173	100.0%	1,968	100.0%	20,077	100.0%
Spring 2002																
Early	547	59.5%	2,170	58.3%	1,323	61.2%	98	68.5%	389	57.3%	7273	67.1%	1021	56.8%	12,821	63.3%
Late	179	19.5%	672	18.1%	397	18.4%	24	16.8%	134	19.7%	1895	17.5%	278	15.5%	3,579	17.7%
Both	193	21.0%	878	23.6%	441	20.4%	21	14.7%	156	23.0%	1676	15.5%	500	27.8%	3,865	19.1%
Total	919	100.0%	3,720	100.0%	2,161	100.0%	143	100.0%	679	100.0%	10,844	100.0%	1,799	100.0%	20,265	100.0%
Spring 2003																
Early	608	62.7%	2,229	58.2%	1,406	62.4%	72	56.3%	401	57.7%	7096	65.1%	1110	57.2%	12,922	62.4%
Late	169	17.4%	725	18.9%	406	18.0%	32	25.0%	133	19.1%	2016	18.5%	272	14.0%	3,753	18.1%
Both	192	19.8%	874	22.8%	441	19.6%	24	18.8%	161	23.2%	1793	16.4%	559	28.8%	4,044	19.5%
Total	969	100.0%	3,828	100.0%	2,253	100.0%	128	100.0%	695	100.0%	10,905	100.0%	1,941	100.0%	20,719	100.0%
Spring 2004																
Early	634	63.8%	2,303	59.5%	1,540	65.0%	82	59.0%	383	62.9%	6819	66.8%	1207	59.1%	12,968	64.1%
Late	172	17.3%	689	17.8%	368	15.5%	29	20.9%	89	14.6%	1680	16.4%	255	12.5%	3,282	16.2%
Both	188	18.9%	879	22.7%	462	19.5%	28	20.1%	137	22.5%	1715	16.8%	582	28.5%	3,991	19.7%
Total	994	100.0%	3,871	100.0%	2,370	100.0%	139	100.0%	609	100.0%	10,214	100.0%	2,044	100.0%	20,241	100.0%
Grand Total																
Early	3,570	61.3%	13,462	59.7%	8,638	63.7%	512	63.3%	2,358	59.9%	42,906	67.5%	6,677	58.7%	78,123	64.2%
Late	1,106	19.0%	3,947	17.5%	2,308	17.0%	150	18.5%	683	17.4%	10,624	16.7%	1,515	13.3%	20,333	16.7%
Both	1,148	19.7%	5,156	22.8%	2,611	19.3%	147	18.2%	893	22.7%	10,073	15.8%	3,192	28.0%	23,220	19.1%
Total	5,824	100.0%	22,565	100.0%	13,557	100.0%	809	100.0%	3,934	100.0%	63,603	100.0%	11,384	100.0%	121,676	100.0%
Relative Share	4.8%		18.5%		11.1%		0.7%		3.2%		52.3%		9.4%		100.0%	

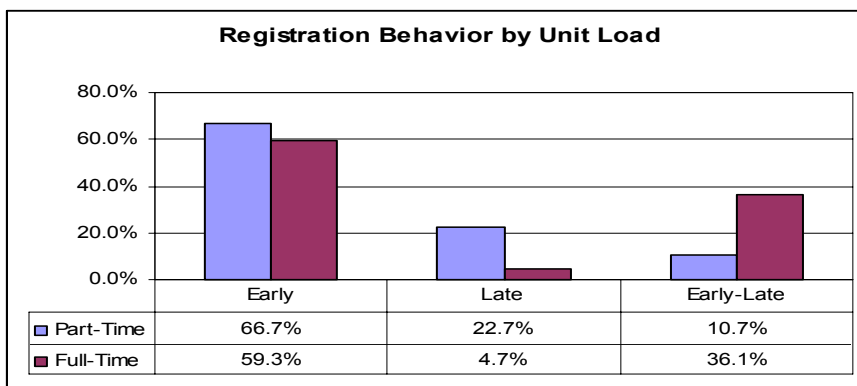
Source: Datatel

Unit Load

The following observations may be made regarding the registrations patterns by unit load:

- Of the total 121,676 students who participated in registration at DVC in the past three years, 66.9% enrolled in a part-time course load (<12 units) and 33.1% enrolled in a full-time load (≥ 12 units). These percentages reflect the distribution of part-time and full-time students in the general student population at DVC..
- Part-time students participated in early registration at an above average rate (66.7% vs. 64.2%). In addition, this group participated in late registration at a much higher rate than average (22.7% vs. 16.7%). In contrast, this group had a relatively lower than average participation rate in early-late registration (10.7% vs. 19.1%).
- Full-time students participated in late registration at one-fifth the rate of participation by part-time students (4.7% vs. 22.7%, respectively). Yet, they participated in the early-late registration at more than three times the rate of participation by part-time students (36.1% vs. 10.7 %, respectively). These disparities are due mostly to the differences in educational goals among both groups. Full-time students are mostly young students who intend to transfer to four-year institutions. In contrast, part-time students are mostly adult learners who enroll for a specific career or personal objective. Because of enrollment in a full load of course work, full-time students must secure their schedules early and can not afford to wait till the last minute to start putting their plans of study together--hence, a relatively lower rate of participation in late registration. However, once full-time students secure their initial schedules, they begin to change them around after the first day of instruction. This is the usual ritual on college campuses, where students change their classes because of the instructor, time conflicts, unexpected difficulty of the subject matter, and a host of other academic, financial, and personal reasons. Therefore, the percentage of early-late registration among these students is the highest.

Figure 6. Registration Behavior by Unit Load, 2001-02 to 2003-04



Source: Datatel

Table 6. Registration Behavior by Unit Load, 2001-02 to 2003-04

Type of Registration	<12 Units		≥12 Units		Total	
	Count	%	Count	%	Count	%
Fall 2001						
Early	8,879	67.1%	3,959	57.1%	12,838	63.7%
Late	3,007	22.7%	419	6.0%	3,426	17.0%
Both	1,350	10.2%	2,553	36.8%	3,903	19.4%
Total	13,236	100.0%	6,931	100.0%	20,167	100.0%
Fall 2002						
Early	9,036	68.1%	4,238	61.1%	13,274	65.7%
Late	2,891	21.8%	352	5.1%	3,243	16.0%
Both	1,348	10.2%	2,342	33.8%	3,690	18.3%
Total	13,275	100.0%	6,932	100.0%	20,207	100.0%
Fall 2003						
Early	8,843	68.1%	4,457	62.9%	13,300	66.2%
Late	2,753	21.2%	297	4.2%	3,050	15.2%
Both	1,393	10.7%	2,334	32.9%	3,727	18.6%
Total	12,989	100.0%	7,088	100.0%	20,077	100.0%
Spring 2002						
Early	9,192	65.8%	3,629	57.6%	12,821	63.3%
Late	3,258	23.3%	321	5.1%	3,579	17.7%
Both	1,513	10.8%	2,352	37.3%	3,865	19.1%
Total	13,963	100.0%	6,302	100.0%	20,265	100.0%
Spring 2003						
Early	9,294	64.7%	3,628	57.1%	12,922	62.4%
Late	3,505	24.4%	248	3.9%	3,753	18.1%
Both	1,570	10.9%	2,474	39.0%	4,044	19.5%
Total	14,369	100.0%	6,350	100.0%	20,719	100.0%
Spring 2004						
Early	9,013	66.4%	3,955	59.3%	12,968	64.1%
Late	3,042	22.4%	240	3.6%	3,282	16.2%
Both	1,518	11.2%	2,473	37.1%	3,991	19.7%
Total	13,573	100.0%	6,668	100.0%	20,241	100.0%
Grand Total						
Early	54,257	66.7%	23,866	59.3%	78,123	64.2%
Late	18,456	22.7%	1,877	4.7%	20,333	16.7%
Both	8,692	10.7%	14,528	36.1%	23,220	19.1%
Total	81,405	100.0%	40,271	100.0%	121,676	100.0%
Relative Share	66.9%		33.1%		100.0%	

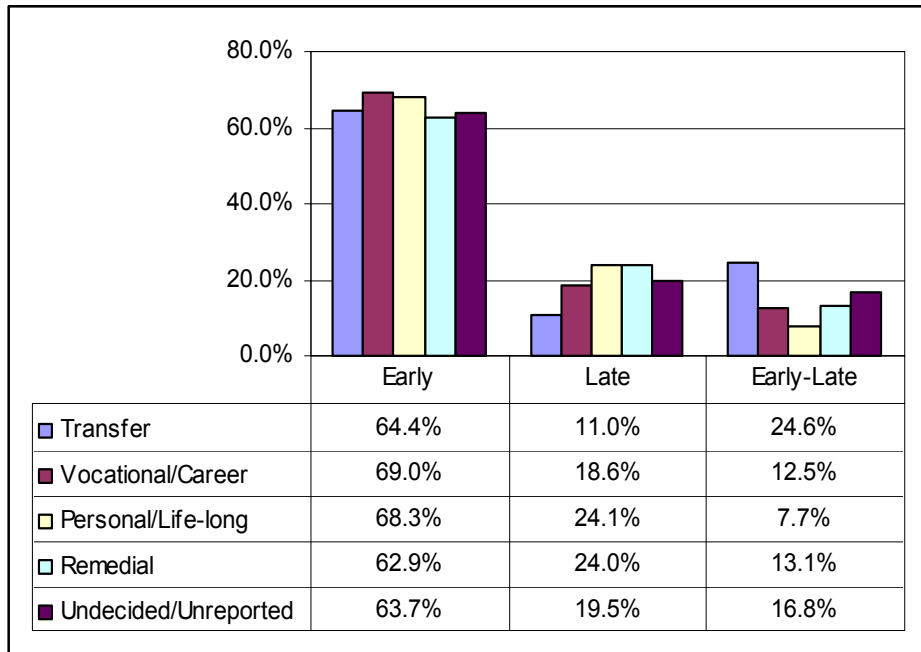
Source: Datatel

Student Educational Goals

The following observations may be made about student educational goals. This analysis covers a period of only three fall terms, fall 2001 to fall 2003.

- Students who had a **transfer goal** were more likely to shop around and change their schedules more frequently. Transfer-bound students had the highest rate of participation in early-late registration, compared to the overall average for this registration cohort (25% vs. 19%). In contrast, these students had the lowest rate of participation in late registration (11% vs. 16%) and their participation in early registration was slightly below the average (64% vs. 65%).
- Students with a **vocational goal** had an above average participation in early registration (69% vs. 65%) and above average participation in late registration (19% vs. 16%), but below average participation in course "shopping" or early-late registration (12% vs. 19%).
- Students with a **personal goal of life long learning** had an above average rate of participation in early registration (68% vs. 65%) and one of the highest levels of participation in late registration (24% vs. 16%). In contrast, these students had a lower level of participation in course "shopping" (8% vs. 19%).
- Students with a **remedial education goal** participated in early registration at a level slightly below average (63% vs. 65%). While their interest in "shopping" was below average (13% vs. 19%), they engaged in late registration at a much higher level than average (24% vs. 16%).
- **Undecided** students did not exhibit sharp differences from the average rates of participation in the three registration cohorts. However, they leaned more toward late registration (20% vs. 16%) and less toward early registration (64% vs. 65%) and early-late registration (17% vs. 19%).
- In summary, vocational and life-long learners who were mostly part-time, older students had the highest rate of participation in **early** registration. Furthermore, these two groups, together with the remedial and the undecided students, had a higher than average rate of participation in **late** registration. In contrast, course "shopping" or **early-late** registration was dominated by transfer-bound student who are mostly full-time, young, White, Asian, or international students. This profile matches the profiles discussed earlier under other student characteristics.

Figure 7. Registration Behavior by Student Educational Goals, Fall Terms 2001 to 2003



Summary of Student Characteristics

Table 7 provides a summary of the participation rates by registration cohorts and student characteristics. Table 8 provides information on the relative differences between the rates participation by each student characteristic and the participation rate for the respective registration cohort. These two tables and the charts that follow indicate the following:

- Early registrants are mostly part-time, adult, White females
- Late registrants are mostly part-time, adult, non-White males.
- Participants in both early and late registration are mostly full-time, young, non-White males.

Table 7. Summary of Registration by Student Characteristics, 2001-02 to 2003-04

Student Characteristics	Early	Late	Early-Late
Male	62.2%	17.5%	20.3%
Female	66.0%	15.9%	18.2%
Unknown Gender	62.4%	20.3%	17.3%
Young (<25 Yrs.)	62.1%	13.1%	24.7%
Old (>=25 Yrs.)	67.0%	21.5%	11.5%
White	67.5%	16.7%	15.8%
Non-White	61.1%	17.6%	21.3%
Unknown Ethnicity	58.7%	13.3%	28.0%
Part-Time (< 12 Units)	66.7%	22.7%	10.7%
Full-Time (>=12 Units)	59.3%	4.7%	36.1%
Average	64.2%	16.7%	19.1%

Table 8. Differences in Participation Rates, 2001-02 to 2003-04

Student Characteristics	Early	Late	Early-Late
Male	-3.1%	5.0%	6.2%
Female	2.7%	-5.1%	-4.7%
Unknown Gender	-2.8%	21.6%	-9.5%
Young (<25 Yrs.)	-3.2%	-21.5%	29.6%
Old (>=25 Yrs.)	4.3%	28.9%	-39.7%
White	5.1%	0.0%	-17.0%
Non-White	-4.8%	5.0%	11.7%
Unknown Ethnicity	-8.6%	-20.4%	46.9%
Part-Time (< 12 Units)	3.8%	35.7%	-44.0%
Full-Time (>=12 Units)	-7.7%	-72.1%	89.0%

Relative difference= (participation rate for each group in table 7 less the average for the respective registration cohort) divided by the average for the respective registration cohort [e.g., for early registration males = (62.2% - 64.2%)/64.2% = -3.1%].

Figure 8. Relative Differences for Early Registration, 2001-02 to 2003-04

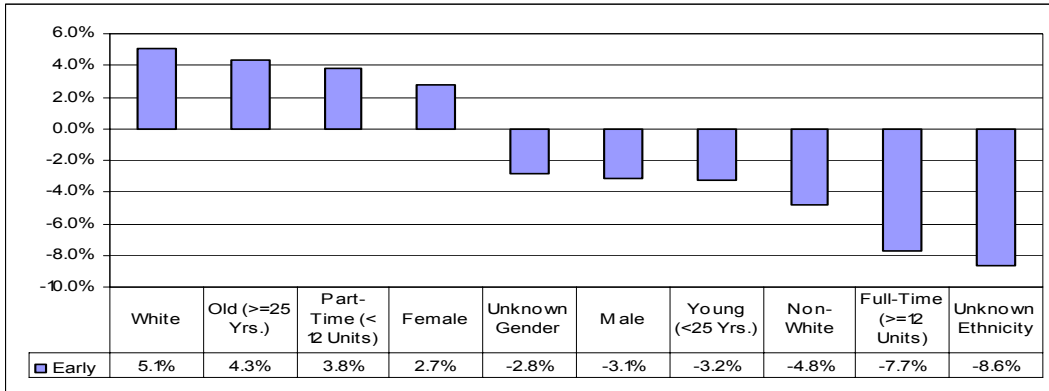


Figure 9. Relative Differences for Late Registration, 2001-02 to 2003-04

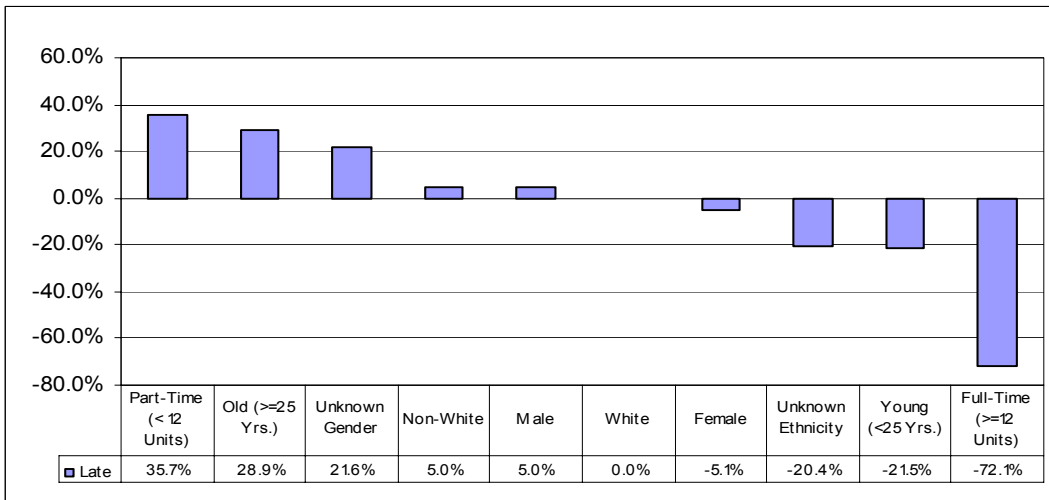
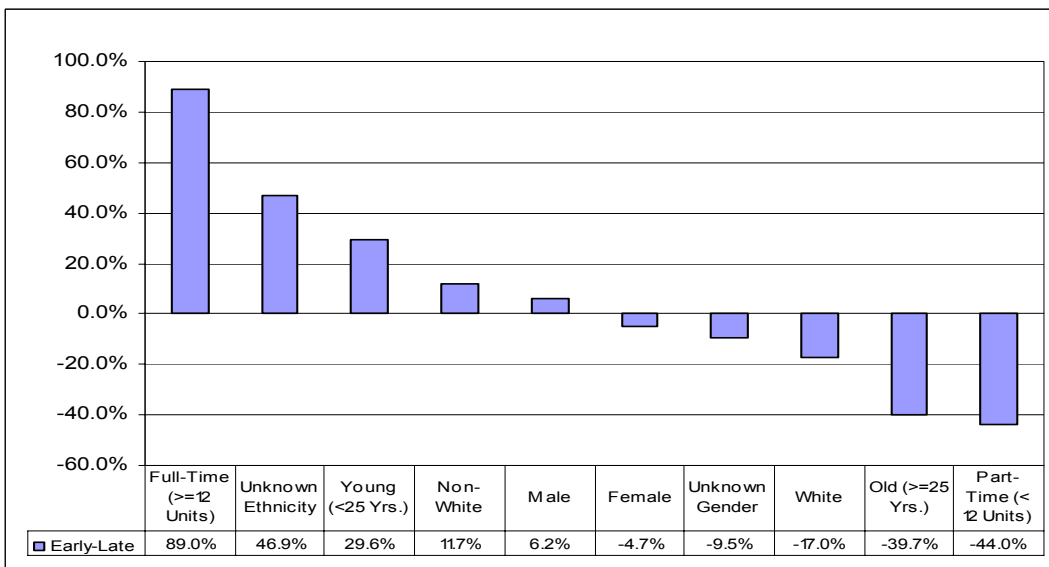


Figure 10. Relative Differences for Early-Late Registration, 2001-02 to 2003-04



5. Academic Performance

A. Overall Course Success

Figures 10 and 11 display the relationship between student registration behavior and course success and retention rates over six terms. Late registrants consistently performed below early registrants, who in turn consistently performed below early-late registrants. Course success rates refer to the percentage of the grades of “A”, “B”, “C”, and “CR” over all the grades earned in various courses. Course retention rates refer to the percentage of all grades except “W” over all grades earned in various courses. The following specific observations may be made about course success and retention in relationship to student registration behavior.

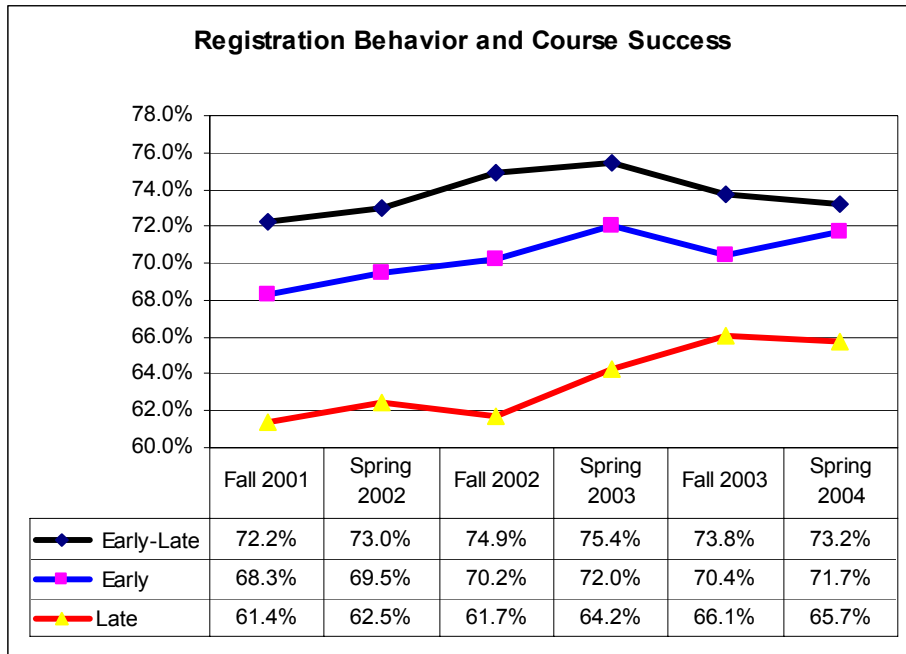
- On the average, the highest course success rates were attained by students who “shopped” for courses or who participated in early-late registration (73.7%). This was followed by those who registered early (70.5%) and then by those who registered late (63.5%). In effect, students who scrambled to register early, then fine-tuned their courses during the late registration period, had the best chance of success. They out-performed late registrants by more than 10 percentage points and early registrants by 3 percentage points.
- The same general observation may be made about course retention rates, albeit with less sharper contrast. Early-late registrants had an average course retention rate of 83.4%, compared to 80.7% for early registrants, and 77.1% for late registrants. In effect, early-late registrants outperformed late registrants by 6 percentage points and early registrants by 3 percentage points.
- The gap among the success rates for all three registration cohorts has been narrowing gradually in the past six terms. The disparity in the success rates of between early-late registrants and late registrants was 12% in fall 2001 but was narrowed to 8% in spring 2004. The same observation may be made about the retention rate. This change reflects to a large extent the overall increase in success and retention rates at DVC during this period.

Table 9. Course Success and Retention By Early and Late Registration

Indicator	Total		Only Early Reg.		Both Early and Late Reg.		Only Late Reg.	
	Count	%	Count	Rate	Count	Rate	Count	Rate
Fall 2001								
Seat Count	62,388	100.0%	37,357	100.0%	18,007	100.0%	7,024	100.0%
Success	42,846	68.7%	25,528	68.3%	13,005	72.2%	4,313	61.4%
Retention	48,019	77.0%	28,563	76.5%	14,456	80.3%	5,000	71.2%
Fall 2002								
Seat Count	61,772	100.0%	38,757	100.0%	16,543	100.0%	6,470	100.0%
Success	43,610	70.6%	27,221	70.2%	12,394	74.9%	3,995	61.7%
Retention	50,124	81.1%	31,356	80.9%	13,914	84.1%	4,854	75.0%
Fall 2003								
Seat Count	59,457	100.0%	37,702	100.0%	16,013	100.0%	5,740	100.0%
Success	42,149	70.9%	26,542	70.4%	11,813	73.8%	3,794	66.1%
Retention	49,246	82.8%	31,063	82.4%	13,527	84.5%	4,656	81.1%
Spring 2002								
Seat Count	58,718	100.0%	34,840	100.0%	17,140	100.0%	6,736	100.0%
Success	40,935	69.7%	24,214	69.5%	12,513	73.0%	4,208	62.5%
Retention	47,404	80.7%	27,941	80.2%	14,267	83.2%	5,194	77.1%
Spring 2003								
Seat Count	59,825	100.0%	35,264	100.0%	17,858	100.0%	6,701	100.0%
Success	43,175	72.2%	25,399	72.0%	13,472	75.4%	4,304	64.2%
Retention	49,794	83.2%	29,208	82.8%	15,259	85.4%	5,325	79.5%
Spring 2004								
Seat Count	59,080	100.0%	35,970	100.0%	17,286	100.0%	5,822	100.0%
Success	42,265	71.5%	25,793	71.7%	12,646	73.2%	3,826	65.7%
Retention	48,458	82.0%	29,420	81.8%	14,374	83.2%	4,662	80.1%
Total								
Seat Count	361,240	100.0%	219,890	100.0%	102,847	100.0%	38,493	100.0%
Success	254,980	70.6%	154,697	70.4%	75,843	73.7%	24,440	63.5%
Retention	293,044	81.1%	177,551	80.7%	85,797	83.4%	29,691	77.1%

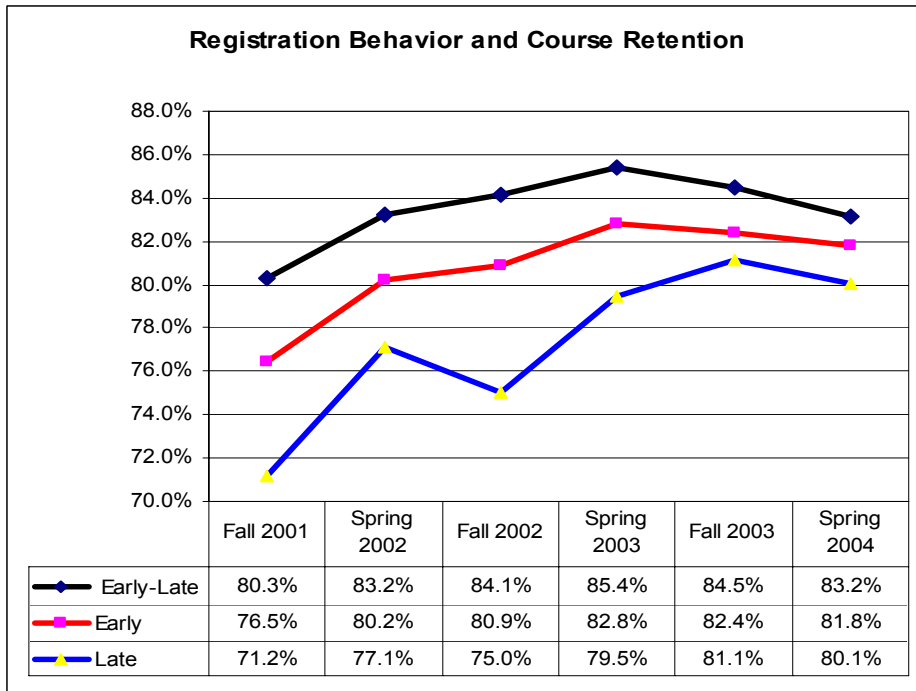
Source: Datatel

Figure 11. Registration Behavior and Course Success Rates , Fall 2001 to Spring 2004



Source: Datatel

Figure 12. Registration Behavior and Course Retention Rates, Fall 2001to Spring 2004



Source: Datatel

B. Basic Skills

Basic skills students exhibit a similar behavior as that of the overall students at DVC, where 64.2% were early registrants, while 16.7% were late registrants and 19.1% registered both early and late. However, basic skills students had a lower overall success and retention rates regardless of the registration cohort.

Early-late registrants in basic skills out-performed both other groups with a 66.7% success rate. Early registrants followed with a 60.6% success rate, and those registering late had a 57.3% success rate, which is 13% below the college overall success rate. These students will have a difficult time in their studies.

Retention followed a similar pattern. Basic skills students who registered both early and late had a retention rate of 82.2%, followed by early registrants (77.5%) and late regis-

Table 10: Head Count Enrollment for Basic Skill Students, Fall 2001 to Spring 2004

Term	Total		Early Registration		Both Early and Late Registration		Late Registration	
	Count	%	Count	%	Count	%	Count	%
Fall 2001	1,193	100.0%	754	63.2%	280	23.5%	159	13.3%
Fall 2002	1,201	100.0%	790	65.8%	252	21.0%	159	13.2%
Fall 2003	1,139	100.0%	734	64.4%	265	23.3%	140	12.3%
Spring 2002	1,019	100.0%	628	61.6%	225	22.1%	166	16.3%
Spring 2003	1,049	100.0%	654	62.3%	244	23.3%	151	14.4%
Spring 2004	1,040	100.0%	698	67.1%	216	20.8%	126	12.1%
Total	6,641	100.0%	4,258	64.1%	1,482	22.3%	901	13.6%

DVC	121,676	100.0%	78,132	64.2%	23,220	19.1%	20,333	16.7%
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Table 11: Success Rate for Basic Skills Students, Fall 2001 to Spring 2004

Term	Total Seat Count	Average for Basic Skills	Early Registration	Both Early and Late Registration	Late Registration
Fall 2001	1,642	58.3%	56.8%	63.4%	55.6%
Fall 2002	1,706	61.4%	61.0%	66.4%	54.9%
Fall 2003	1,556	63.7%	61.3%	70.8%	61.5%
Spring 2002	1,443	59.7%	57.9%	66.9%	55.2%
Spring 2003	1,397	63.7%	63.2%	65.6%	62.5%
Spring 2004	1,420	63.4%	63.6%	67.3%	54.9%
Total	9,164	61.6%	60.6%	66.7%	57.3%

Source: Datatel

Table 12. Retention Rate for Basic Skills Students, Fall 2001 to Spring 2004

Term	Total Seat Count	Average for Basic Skills	Early Registration	Both Early and Late Registration	Late Registration
Fall 2001	1,642	72.1%	70.5%	77.4%	69.7%
Fall 2002	1,706	79.2%	79.6%	82.7%	71.4%
Fall 2003	1,556	81.4%	80.1%	85.4%	79.7%
Spring 2002	1,443	78.8%	76.2%	83.1%	82.4%
Spring 2003	1,397	79.2%	78.8%	80.6%	78.8%
Spring 2004	1,420	80.8%	80.1%	84.6%	78.0%
Total	9,164	78.5%	77.5%	82.2%	76.5%

Figure 13. Basic Skills Students' Course Success Rates by Early and Late Registration, Fall 2001 to Spring 2004

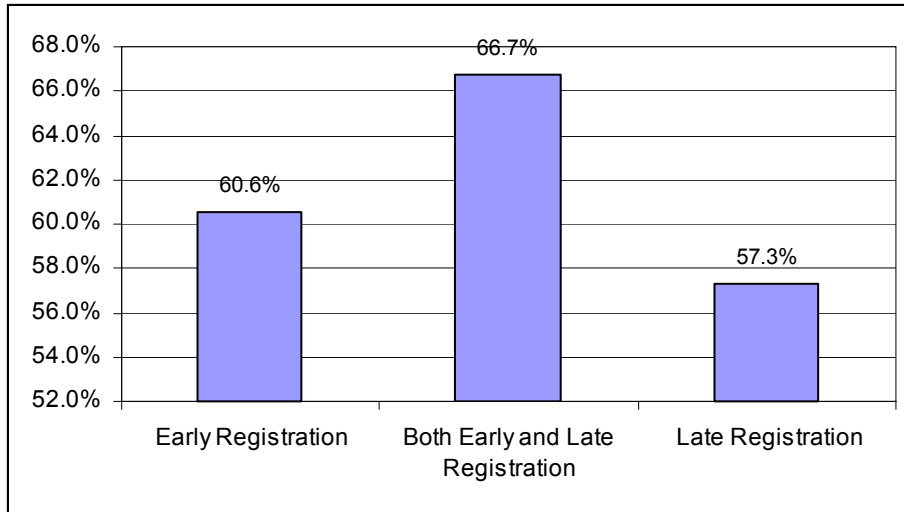
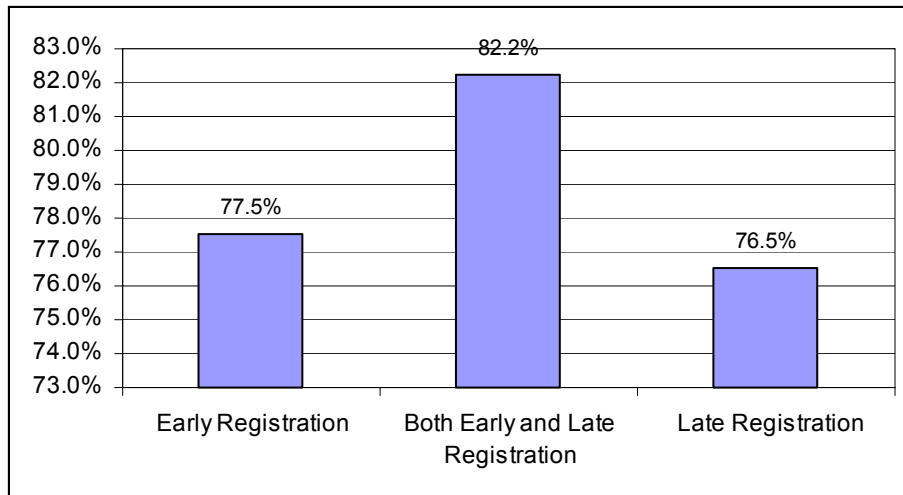


Figure 14. Basic Skills Students' Retention Rates by Early and Late Registration, Fall 2001 to Spring 2004



Source: Datatel

C. Multiple Variables

When considering the course success rates of students in the three registrant cohorts, the question arises, is the performance level of students related more to their characteristics or to their registration behavior? Matrix analysis seeks to answer this question. The objective of analyzing three cohorts of registrants in a matrix combining student characteristics with course success rates, is to see if variations in characteristics go against the general pattern.

Gender

The general pattern is that Early-Late registrants have the highest success rates, then the Early registrants are lower, followed by the Late registrants. For example, male Early-Late registrants have a 71.3% average course success rate over three fall terms; male Early registrants have a 66.6% average course success rate (4.7 percentage points lower), and male Late registrants have a 60.4% average course success rate (10.9 percentage points lower than Early-Late registrants). Female and Unknown gender follow the same pattern.

At the same time it is apparent that women performed better than Unknown gender, and both women and Unknown performed better than men across all three cohorts of registrants.

In summary, the ranking of registrant cohorts according to course success rates was first Early-Late, then Early, then Late. At the same time, the ranking of gender groups was first women, then Unknown, then men.

Ethnicity

Again, the general and consistent pattern is that Early-Late registrants outperformed Early registrants, who in turn outperformed Late registrants, across the spectrum of ethnic groups. For example, African-American Early-Late registrants had an average course success rate of 58.2% over three fall terms; African-American Early registrants had an average course success rate of 55.4% (2.8% lower); and African-American Late registrants had a course success rate of 47.3% (10.9% lower than African-American Early registrants). This relationship between registrant cohorts was similar for the various ethnic groups.

Given this record of performance, we would expect Early-Late, Unknown registrants to have the highest average course success rate, and Late African-American registrants to have the lowest. This is the pattern repeated for the three registrant cohorts and ethnic groups Unknown, White, Asian, and African-American. Three ethnicity groups are more changeable: Hispanic, Other, and Native-American students. It is important to note that the unknown group includes international students.

Age

The age groupings show more variability across registrant groups. The general pattern set by gender and ethnicity holds true for age groups up to 35-39 years of age. For example, of the under-20 students, average course success was highest among Early-Late registrants (74.2%), next highest among Early registrants (71.2% or 3 percentage points lower), and lowest among Late registrants (63.4% or 10.8 percentage points lower than Early-Late registrants' course success rate). The same pattern is followed for age groups 20-24, 25-29, and 30-34. However, the relationship of Early-Late to the other two groups is irregular for 35-39 year olds, where Late registrants did second-best, and for students aged 50 and above, where Late registrants achieved the highest average course success rate. The implications here for both registration date changes and for marketing need to be noted. Older students do not perform worse when they register late.

The three oldest age groups perform consistently in relation to each, ranking from 50+ down to 35-39. Even though the lowest four age groups shift positions in their ranking, it is clear that the 20-24 and 25-29 age groups performed the worst overall. And to be young and also late almost guarantees a poor course success rate (55.8%, or 23.6 percentage points below the highest course success rate (50+ Late registrants)).

Unit Load

Whether students took a full-time or a part-time unit load, their average course success rate was best if they were Early-Late registrants, next best if they were Early registrants, and worst if they were late registrants. For example, part-time students (taking less than 12 units) had a 67.3% average course success rate if they were Early-Late registrants, a 64.2% course success rate if they were Early registrants, and a 63.8% success rate if they were Late registrants.

And full-time students (taking 12 units or more) performed better than part-time students if they were Early-Late or Early registrants. However, they had an even lower course success rate than part-time students if they registered late. The message here is very clear: it pays to register earlier rather than later.

Table 13. Registration Behavior and Course Success by Student Characteristics, Fall Terms 2001 to 2003

Demographic	Demographic Detail	Fall 2001-2002-2003			Average
		Early	Late	Early-Late	
Gender	Male	66.6%	60.4%	71.3%	67.2%
	Female	71.6%	65.5%	75.7%	72.2%
	Unknown	67.5%	64.9%	73.6%	68.8%
Ethnicity	African-American	55.4%	47.3%	58.2%	54.9%
	Asian/Pacific Islander	70.4%	61.9%	73.2%	70.3%
	Hispanic	63.1%	55.5%	68.2%	63.6%
	Native American	61.3%	59.3%	69.5%	63.2%
	Other	67.6%	52.0%	70.0%	66.5%
	White	71.2%	67.8%	74.8%	71.7%
	Unknown	75.2%	68.1%	76.3%	75.1%
Age	<20	71.2%	63.4%	74.2%	71.4%
	20-24	67.6%	55.8%	72.9%	68.3%
	25-29	66.5%	58.9%	70.4%	66.4%
	30-34	69.4%	63.2%	76.3%	70.0%
	35-39	71.2%	72.8%	76.1%	72.3%
	40-49	75.5%	73.9%	78.1%	75.7%
	50+	78.5%	79.4%	78.7%	78.7%
Units	<12	64.2%	63.8%	67.3%	64.6%
	>=12	74.4%	60.5%	75.7%	74.2%
Average		69.7%	62.9%	72.9%	69.8%

Source: Datatel

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Appendices

Table 14. Performance and Demographics of Three Registrant Groups over Three Fall Terms, Fall 2001-Fall 2003

Early

Demographic Detail	Success		Retention		W		Total	
	No.	%	No.	%	No.	%	No.	%
Male	33,952	66.6%	40,112	78.7%	10,862	21.3%	50,974	100.0%
Female	43,172	71.6%	48,347	80.2%	11,927	19.8%	60,274	100.0%
Unknown	1,733	67.5%	2,071	80.6%	497	19.4%	2,568	100.0%
African-American	2,885	55.4%	3,724	71.5%	1,488	28.5%	5,212	100.0%
Asian/Pacific Islander	14,055	70.4%	16,125	80.8%	3,838	19.2%	19,963	100.0%
Hispanic	7,835	63.1%	9,380	75.6%	3,030	24.4%	12,410	100.0%
Native American	451	61.3%	544	73.9%	192	26.1%	736	100.0%
Other	2,533	67.6%	2,955	78.9%	790	21.1%	3,745	100.0%
White	42,962	71.2%	48,647	80.6%	11,705	19.4%	60,352	100.0%
Unknown	8,570	75.2%	9,607	84.3%	1,791	15.7%	11,398	100.0%
<20	18,635	71.2%	21,878	83.6%	4,297	16.4%	26,175	100.0%
20-24	36,440	67.6%	42,338	78.6%	11,559	21.4%	53,897	100.0%
25-29	6,976	66.5%	7,912	75.4%	2,578	24.6%	10,490	100.0%
30-34	3,630	69.4%	4,050	77.4%	1,183	22.6%	5,233	100.0%
35-39	2,938	71.2%	3,269	79.2%	860	20.8%	4,129	100.0%
40-49	5,879	75.5%	6,412	82.4%	1,374	17.6%	7,786	100.0%
50+	4,793	78.5%	5,123	83.9%	983	16.1%	6,106	100.0%
<12	34,056	64.2%	39,957	75.4%	13,069	24.6%	53,026	100.0%
>=12	45,235	74.4%	51,025	83.9%	9,765	16.1%	60,790	100.0%

Early-Late

Demographic Detail	Success		Retention		W		Total	
	No.	%	No.	%	No.	%	No.	%
Male	16,825	71.3%	19,267	81.6%	4,346	18.4%	23,613	100.0%
Female	19,563	75.7%	21,694	84.0%	4,136	16.0%	25,830	100.0%
Unknown	824	73.6%	936	83.6%	184	16.4%	1,120	100.0%
African-American	1,501	58.2%	1,896	73.5%	685	26.5%	2,581	100.0%
Asian/Pacific Islander	8,300	73.2%	9,350	82.5%	1,989	17.5%	11,339	100.0%
Hispanic	3,714	68.2%	4,367	80.1%	1,082	19.9%	5,449	100.0%
Native American	207	69.5%	241	80.9%	57	19.1%	298	100.0%
Other	1,386	70.0%	1,618	81.7%	363	18.3%	1,981	100.0%
White	16,017	74.8%	17,809	83.1%	3,617	16.9%	21,426	100.0%
Unknown	5,716	76.3%	6,616	88.3%	873	11.7%	7,489	100.0%
<20	8,756	74.2%	9,960	84.4%	1,839	15.6%	11,799	100.0%
20-24	20,458	72.9%	23,172	82.6%	4,897	17.4%	28,069	100.0%
25-29	2,802	70.4%	3,169	79.6%	810	20.4%	3,979	100.0%
30-34	1,469	76.3%	1,590	82.6%	336	17.4%	1,926	100.0%
35-39	895	76.1%	972	82.7%	204	17.3%	1,176	100.0%
40-49	1,638	78.1%	1,763	84.1%	334	15.9%	2,097	100.0%
50+	1,194	78.7%	1,271	83.8%	246	16.2%	1,517	100.0%
<12	8,699	67.3%	10,049	77.8%	2,872	22.2%	12,921	100.0%
>=12	28,513	75.7%	31,848	84.6%	5,794	15.4%	37,642	100.0%

Source: Datatel

Table 14. Demographic and Performance Matrix of Three Registrant Cohorts Summarized over Three Fall Terms, Fall 2001-Fall 2003 (Cont.)

Late

Demographic Detail	Success		Retention		W		Total	
	No.	%	No.	%	No.	%	No.	%
Male	5,883	60.4%	7,264	74.6%	2,477	25.4%	9,741	100.0%
Female	5,864	65.5%	6,823	76.3%	2,123	23.7%	8,946	100.0%
Unknown	355	64.9%	423	77.3%	124	22.7%	547	100.0%
African-American	648	47.3%	908	66.3%	461	33.7%	1,369	100.0%
Asian/Pacific Islander	2,490	61.9%	3,051	75.8%	972	24.2%	4,023	100.0%
Hispanic	1,318	55.5%	1,682	70.8%	694	29.2%	2,376	100.0%
Native American	70	59.3%	86	72.9%	32	27.1%	118	100.0%
Other	395	52.0%	519	68.4%	240	31.6%	759	100.0%
White	6,109	67.8%	7,026	77.9%	1,988	22.1%	9,014	100.0%
Unknown	1,072	68.1%	1,238	78.6%	337	21.4%	1,575	100.0%
<20	2,120	63.4%	2,591	77.5%	752	22.5%	3,343	100.0%
20-24	4,218	55.8%	5,430	71.9%	2,126	28.1%	7,556	100.0%
25-29	1,358	58.9%	1,620	70.3%	684	29.7%	2,304	100.0%
30-34	843	63.2%	989	74.2%	344	25.8%	1,333	100.0%
35-39	727	72.8%	808	80.9%	191	19.1%	999	100.0%
40-49	1,346	73.9%	1,487	81.6%	335	18.4%	1,822	100.0%
50+	1,490	79.4%	1,585	84.4%	292	15.6%	1,877	100.0%
<12	9,026	63.8%	10,675	75.4%	3,474	24.6%	14,149	100.0%
>=12	3,076	60.5%	3,835	75.4%	1,250	24.6%	5,085	100.0%

Source: Datatel

Table 14. Demographic and Performance Matrix of Three Registrant Cohorts Summarized over Three Fall Terms, Fall 2001-Fall 2003 (Cont.)

Demographic	Demographic Detail	Fall 2001		
		Early	Late	Early-Late
Gender	Male	65.5%	59.6%	69.3%
	Female	70.7%	63.4%	74.9%
	Unknown	68.0%	60.4%	72.3%
Ethnicity	African-American	52.0%	47.6%	54.7%
	Asian/Pacific Islander	69.5%	59.6%	72.3%
	Hispanic	61.5%	54.5%	67.2%
	Native American	63.8%	37.5%	69.3%
	Other	65.9%	56.1%	72.0%
	White	70.1%	65.2%	73.5%
	Unknown	73.4%	67.8%	64.1%
Age	<20	72.4%	69.6%	72.9%
	20-24	67.5%	54.8%	72.2%
	25-29	63.3%	54.0%	67.6%
	30-34	66.5%	59.4%	75.1%
	35-39	68.1%	68.1%	71.5%
	40-49	73.1%	73.0%	75.8%
	50+	74.3%	77.8%	75.6%
Units	<12	63.0%	62.0%	66.5%
	>=12	73.2%	60.0%	74.0%

Demographic	Demographic Detail	Fall 2002		
		Early	Late	Early-Late
Gender	Male	65.7%	58.8%	72.5%
	Female	72.0%	64.9%	77.1%
	Unknown	67.4%	63.1%	73.0%
Ethnicity	African-American	59.1%	43.7%	60.2%
	Asian/Pacific Islander	70.2%	61.1%	75.6%
	Hispanic	64.8%	52.5%	68.8%
	Native American	57.4%	45.8%	69.2%
	Other	70.5%	50.4%	68.9%
	White	71.6%	67.5%	75.6%
	Unknown	74.3%	68.7%	82.5%
Age	<20	72.5%	59.5%	76.3%
	20-24	66.8%	54.0%	73.1%
	25-29	67.4%	59.9%	73.1%
	30-34	70.5%	65.4%	77.4%
	35-39	72.0%	73.5%	80.3%
	40-49	77.1%	72.4%	78.3%
	50+	79.9%	78.1%	80.9%
Units	<12	64.7%	62.7%	68.5%
	>=12	75.1%	59.1%	77.2%

Source: Datatel

Table 14. Demographic and Performance Matrix of Three Registrant Cohorts Summarized over Three Fall Terms, Fall 2001-Fall 2003 (Cont.)

Demographic	Demographic Detail	Fall 2003		
		Early	Late	Early-Late
Gender	Male	68.6%	63.2%	72.1%
	Female	72.2%	68.8%	75.2%
	Unknown	67.1%	71.4%	74.9%
Ethnicity	African-American	54.8%	50.7%	60.5%
	Asian/Pacific Islander	71.5%	65.4%	71.7%
	Hispanic	63.1%	60.2%	68.5%
	Native American	62.0%	84.8%	70.0%
	Other	66.4%	48.8%	68.7%
	White	71.9%	71.3%	75.3%
	Unknown	77.6%	67.7%	82.5%
Age	<20	69.4%	63.8%	72.6%
	20-24	68.6%	59.2%	73.7%
	25-29	69.4%	64.9%	71.5%
	30-34	71.7%	65.8%	76.3%
	35-39	74.1%	77.5%	76.6%
	40-49	76.6%	76.6%	80.8%
	50+	82.1%	82.8%	80.2%
Units	<12	65.0%	67.1%	67.0%
	>=12	74.9%	63.1%	76.2%

Source: Datatel

**Table 15. Student Educational Goals in Relation to Registration Behavior, Fall 2001-
Fall 2003**

		Fall 2001					
		Early		Late		Early-Late	
Code	Goal	No.	%	No.	%	No.	%
A	Obtain an associate degree and transfer to a 4-year institution	3,626	28.2%	673	19.6%	1,474	37.8%
B	Transfer to a 4-year institution without an associate degree	1,455	11.3%	329	9.6%	730	18.7%
C	Obtain a two year associate's degree without transfer	373	2.9%	86	2.5%	92	2.4%
D	Obtain a two year vocational degree without transfer	206	1.6%	34	1.0%	42	1.1%
E	Earn a vocational certificate without transfer	524	4.1%	114	3.3%	92	2.4%
F	Discover/formulate career interests, plans, goals	517	4.0%	155	4.5%	108	2.8%
G	Prepare for a new career (acquire job skills)	316	2.5%	102	3.0%	37	0.9%
H	Advance in current job/career (update job skills)	378	2.9%	115	3.4%	42	1.1%
I	Maintain certificate or license	81	0.6%	17	0.5%	15	0.4%
J	Educational development (intellectual, cultural)	897	7.0%	322	9.4%	98	2.5%
K	Improve basic skills in English, reading or math	185	1.4%	66	1.9%	25	0.6%
L	Complete credits for high school diploma or GED	120	0.9%	52	1.5%	52	1.3%
M	Undecided on goal	2,275	17.7%	783	22.9%	622	15.9%
X	Uncollected/unreported	1,885	14.7%	578	16.9%	474	12.1%
	Total	12,838	100.0%	3,426	100.0%	3,903	100.0%

		Fall 2002					
		Early		Late		Early-Late	
Code	Goal	No.	%	No.	%	No.	%
A	Obtain an associate degree and transfer to a 4-year institution	4,000	30.1%	642	19.8%	1,357	36.8%
B	Transfer to a 4-year institution without an associate degree	1,657	12.5%	274	8.4%	692	18.8%
C	Obtain a two year associate's degree without transfer	364	2.7%	74	2.3%	100	2.7%
D	Obtain a two year vocational degree without transfer	190	1.4%	40	1.2%	47	1.3%
E	Earn a vocational certificate without transfer	453	3.4%	121	3.7%	84	2.3%
F	Discover/formulate career interests, plans, goals	495	3.7%	162	5.0%	83	2.2%
G	Prepare for a new career (acquire job skills)	345	2.6%	120	3.7%	58	1.6%
H	Advance in current job/career (update job skills)	417	3.1%	131	4.0%	27	0.7%
I	Maintain certificate or license	76	0.6%	24	0.7%	20	0.5%
J	Educational development (intellectual, cultural)	916	6.9%	286	8.8%	114	3.1%
K	Improve basic skills in English, reading or math	230	1.7%	78	2.4%	27	0.7%
L	Complete credits for high school diploma or GED	188	1.4%	55	1.7%	67	1.8%
M	Undecided on goal	2,563	19.3%	811	25.0%	709	19.2%
X	Uncollected/unreported	1,380	10.4%	425	13.1%	305	8.3%
	Total	13,274	100.0%	3,243	100.0%	3,690	100.0%

Source: Datatel

Table 15. Student Educational Goals in Relation to Registration Behavior, Fall 2001-Fall 2003 (Cont.)

		Fall 2003					
		Early		Late		Early-Late	
Code	Goal	No.	%	No.	%	No.	%
A	Obtain an associate degree and transfer to a 4-year institution	4,382	32.9%	672	22.0%	1,563	41.9%
B	Transfer to a 4-year institution without an associate degree	1,943	14.6%	321	10.5%	685	18.4%
C	Obtain a two year associate's degree without transfer	401	3.0%	100	3.3%	89	2.4%
D	Obtain a two year vocational degree without transfer	196	1.5%	39	1.3%	46	1.2%
E	Earn a vocational certificate without transfer	432	3.2%	102	3.3%	106	2.8%
F	Discover/formulate career interests, plans, goals	527	4.0%	138	4.5%	83	2.2%
G	Prepare for a new career (acquire job skills)	316	2.4%	87	2.9%	58	1.6%
H	Advance in current job/career (update job skills)	417	3.1%	115	3.8%	29	0.8%
I	Maintain certificate or license	64	0.5%	31	1.0%	24	0.6%
J	Educational development (intellectual, cultural)	942	7.1%	364	11.9%	97	2.6%
K	Improve basic skills in English, reading or math	245	1.8%	102	3.3%	30	0.8%
L	Complete credits for high school diploma or GED	248	1.9%	110	3.6%	53	1.4%
M	Undecided on goal	2,414	18.2%	596	19.5%	684	18.4%
X	Uncollected/unreported	773	5.8%	273	9.0%	180	4.8%
	Total	13,300	100.0%	3,050	100.0%	3,727	100.0%

		Fall 2001-2002-2003							
		Early		Late		Early-Late		Average	
Code	Goal	No.	%	No.	%	No.	%	No.	%
A	Obtain an associate degree and transfer to a 4-year institution	12,008	30.5%	1,987	20.4%	4,394	38.8%	18,389	30.4%
B	Transfer to a 4-year institution without an associate degree	5,055	12.8%	924	9.5%	2,107	18.6%	8,086	13.4%
C	Obtain a two year associate's degree without transfer	1,138	2.9%	260	2.7%	281	2.5%	1,679	2.8%
D	Obtain a two year vocational degree without transfer	592	1.5%	113	1.2%	135	1.2%	840	1.4%
E	Earn a vocational certificate without transfer	1,409	3.6%	337	3.5%	282	2.5%	2,028	3.4%
F	Discover/formulate career interests, plans, goals	1,539	3.9%	455	4.7%	274	2.4%	2,268	3.8%
G	Prepare for a new career (acquire job skills)	977	2.5%	309	3.2%	153	1.4%	1,439	2.4%
H	Advance in current job/career (update job skills)	1,212	3.1%	361	3.7%	98	0.9%	1,671	2.8%
I	Maintain certificate or license	221	0.6%	72	0.7%	59	0.5%	352	0.6%
J	Educational development (intellectual, cultural)	2,755	7.0%	972	10.0%	309	2.7%	4,036	6.7%
K	Improve basic skills in English, reading or math	660	1.7%	246	2.5%	82	0.7%	988	1.6%
L	Complete credits for high school diploma or GED	556	1.4%	217	2.2%	172	1.5%	945	1.6%
M	Undecided on goal	7,252	18.4%	2,190	22.5%	2,015	17.8%	11,457	19.0%
X	Uncollected/unreported	4,038	10.2%	1,276	13.1%	959	8.5%	6,273	10.4%
	Total	39,412	100.0%	9,719	100.0%	11,320	100.0%	60,451	100.0%

Source: Datatel