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Part-Time Undergraduates in Postsecondary Education: 2003–04

Postsecondary Education Descriptive Analysis Report

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Part-Time Undergraduates in Postsecondary Education: 2003–04

Postsecondary Education Descriptive Analysis Report

June 2007

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Executive Summary

After dramatic growth between 1970 and 1990, part-time students have formed a large and stable segment of the undergraduate population in U.S. postsecondary institutions (Hussar 2005). In fall 2004, approximately 5.5 million undergraduates were enrolled part time, making up 37 percent of the undergraduate enrollment in all degree-granting postsecondary institutions (U.S. Department of Education 2006). While part-time enrollment benefits postsecondary students in that it lowers their costs, increases their access, and offers them more flexibility, it provides no guarantee of academic success. In fact, part-time enrollment is often associated with certain behaviors (e.g., interrupting enrollment, working excessively) that may deter students from finishing their degree (Berkner, He, and Cataldi 2002; Carroll 1989; O'Toole, Stratton, and Wetzel 2003). Although it is difficult to determine whether the growth in part-time enrollment has brought about more benefits or limitations to individuals and institutions (Davies 1999; McCormick, Geis, and Vergun 1995), ongoing research on the associations between part-time enrollment and postsecondary outcomes helps advance our understanding of this issue.

This report uses data from the 2003–04 National Postsecondary Student Aid Study (NPSAS:2004) to provide a profile of part-time undergraduates enrolled in U.S. postsecondary institutions in 2003–04. It also uses longitudinal data from a nationally representative sample in the 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01) to examine associations between part-time enrollment and education outcomes (i.e., persistence and degree completion) 6 years after beginning postsecondary education.

While providing an overall picture of part-time students, this report also takes a closer look at a subgroup of part-time students who exhibited some characteristics commonly found among full-time students. A relevant question is why these students chose to attend part time even though they may have been able to attend full time given their characteristics. Although this report cannot fully address this question, a descriptive look at this subgroup helps determine whether and how these students behaved differently from their full-time counterparts and other part-time peers in postsecondary education and what factors were related to degree completion. The major findings of this report are summarized below. It should be noted, however, that these findings are descriptive in nature and do not demonstrate causality.

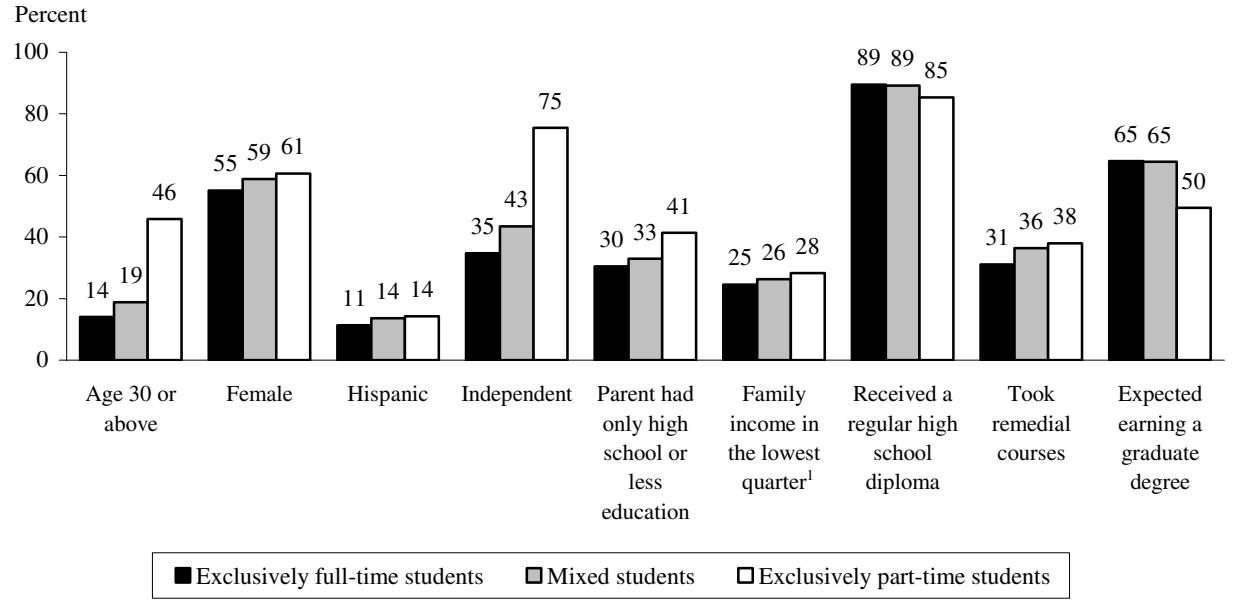
Overall Picture of Part-Time Undergraduates

About 84 percent of undergraduates maintained the same enrollment status throughout the 2003–04 academic year: 49 percent were enrolled exclusively full time and 35 percent were enrolled exclusively part time. The remaining 16 percent changed their enrollment status during the year. According to these enrollment patterns, this report classified students into three groups: exclusively full-time

students, exclusively part-time students, and students with mixed enrollment intensity (regardless of whether they started as part-time students and subsequently changed to full-time students or vice versa).

Exclusively part-time students differed from their full-time peers in many respects. Compared with exclusively full-time students, exclusively part-time students tended to be older, female, Hispanic, financially independent, and first-generation students (i.e., their parents did not attend college) (figure A).[1] They also tended to come from low-income families (for dependent students), had weaker academic preparation, and had lower expectations for postsecondary education. Students with mixed enrollment intensity typically fell in between these two groups, with some characteristics similar to those of exclusively full-time students (e.g., type of high school diploma and educational expectations) and others similar to those of exclusively part-time students (e.g., gender, race/ethnicity, and remedial coursetaking).

Figure A. Percentage of undergraduates with selected demographic and academic characteristics, by enrollment intensity: 2003–04



[1] For dependent students only.
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Hispanic includes Latino. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

[1] All comparisons made in the report were tested using Student's *t* statistic. All differences cited were statistically significant at the .05 level unless noted otherwise.

Part-Time Students Who Looked Like Typical Full-Time Students

Not all part-time students could be easily distinguished from full-time students, though. In fact, about 25 percent of part-time undergraduates in 2003–04 exhibited some characteristics common to full-time students—that is, they were traditional college age (23 years old or younger), financially dependent on their parents, graduated from high school with a regular diploma, and received financial help from their parents to pay for their postsecondary education. Referred to as "part-time students who looked like full-time students,"[2] this report compared this subgroup with both full-time students and other part-time students to determine whether and how their postsecondary education behaviors differed from their counterparts.

Part-time students who looked like full-time students appeared to be relatively advantaged when compared with other part-time students: they were more likely to be White, have well-educated parents, come from high-income families (for dependent students only), and expect to earn an advanced degree in the future, and they were less likely to be Black and have taken remedial courses (figure B). In addition, part-time students who looked like full-time students were more likely than other part-time students to be male.

Comparing part-time students who looked like full-time students to their full-time counterparts revealed both similarities and differences: they were slightly more likely than exclusively full-time students to be Hispanic, but less likely to be Black, and were more likely to come from families where parents held bachelor's or higher degrees and to have taken remedial courses after high school. The two groups could not be distinguished in terms of their gender distribution, family income (for dependent students only), and educational expectations.

[2] It should be noted that not all full-time students fit this typical profile. For example, in 2003–04, about one-half of full-time undergraduates had these characteristics.

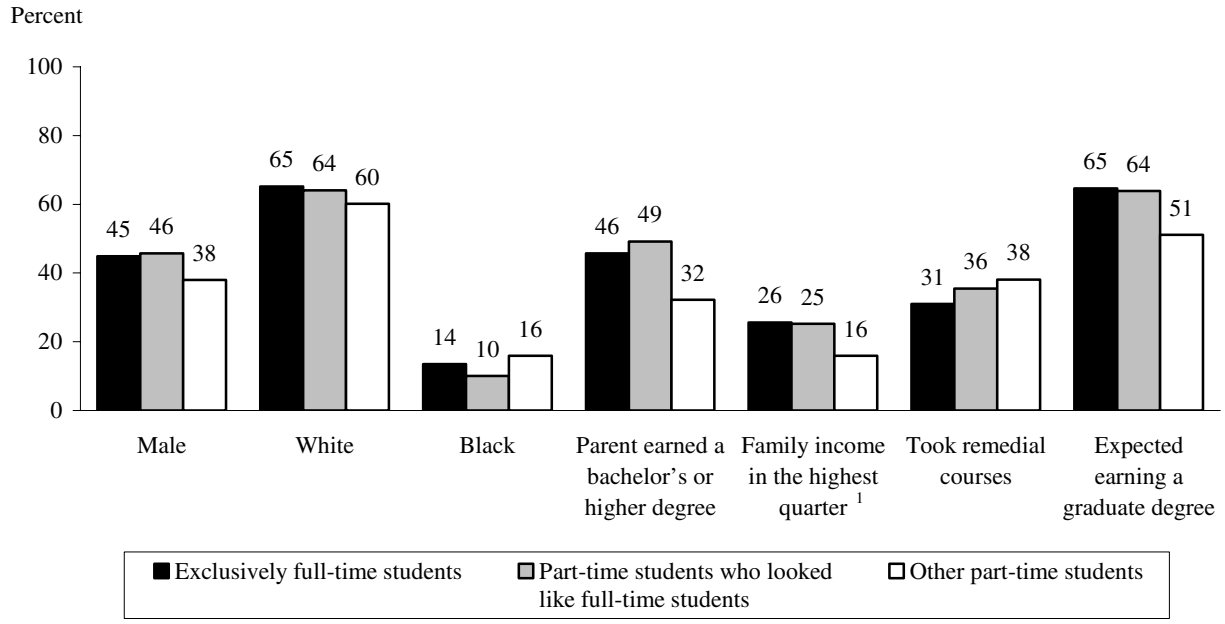
Enrollment Characteristics

Several enrollment characteristics distinguished exclusively part-time students from their full-time peers. For example, a majority of exclusively part-time students (64 percent) attended public 2-year institutions, compared with 25 percent of exclusively full-time students (figure C). On the other hand, exclusively full-time students were more likely than exclusively part-time students to attend public or private 4-year doctoral institutions (33 vs. 11 percent).

Consistent with their high concentrations in public 2-year institutions, exclusively part-time students were more likely than full-time students to be enrolled in an associate's degree program or not be in any degree/certificate program and much less likely to be enrolled in a bachelor's degree program. In addition, 31 percent of exclusively part-time students did not have a major field of study, compared with 16 percent of exclusively full-time students.

Although they somewhat resembled full-time students with respect to their demographics, family backgrounds, and educational expectations, part-time students who looked like full-time students retained many enrollment characteristics associated with part-time attendance, such as the tendency to attend 2-year colleges, enroll in subbaccalaureate or nondegree/certificate programs, and not have a

Figure B. Percentage of full-time and part-time undergraduates with selected demographic and academic characteristics: 2003–04



[1] For dependent students only.
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Black includes African American. Race categories exclude Hispanic origin unless specified. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

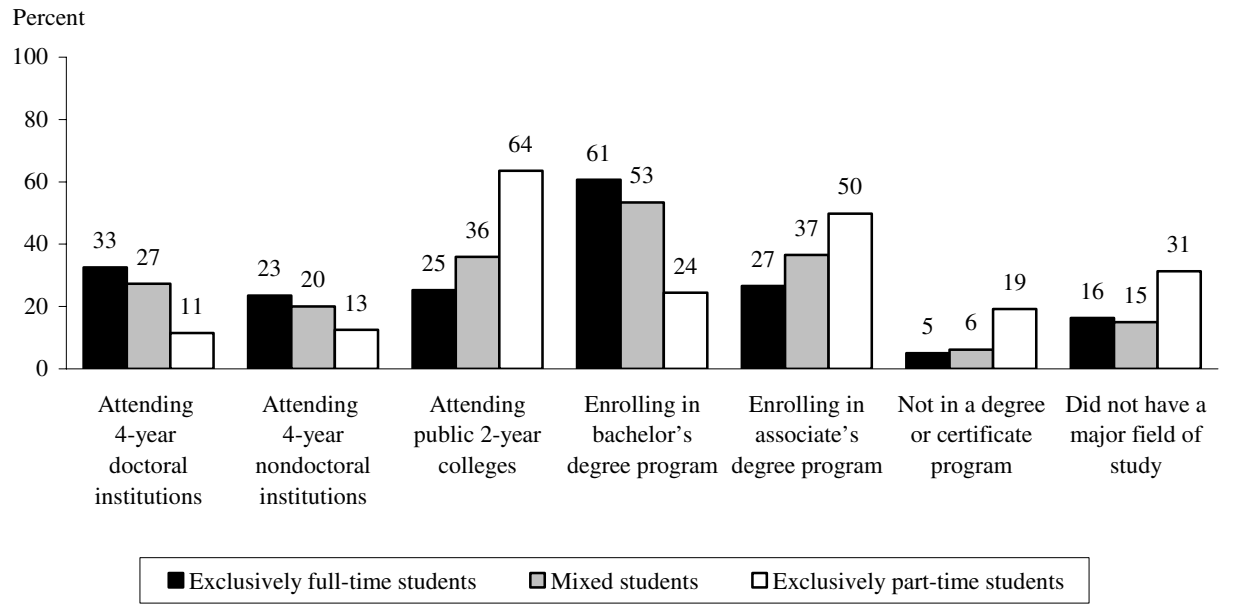
major field of study (figure D). These enrollment characteristics are generally associated with lower persistence and attainment rates in postsecondary education (Berkner, He, and Cataldi 2002).

Combining Work and School

Another important factor that distinguished part-time students from their full-time peers was employment. In 2003–04, 83 percent of exclusively part-time undergraduates worked while enrolled, more than one-half (53 percent) of them worked full time, and 47 percent considered themselves primarily employees (figure E). Although a majority of full-time students worked while enrolled (73 percent), just under one-fourth (23 percent) worked full time and 14 percent considered themselves primarily employees.

Compared with exclusively part-time students, working intensity tended to be lower for part-time students who looked like full-time students: 21 percent held a full-time job while enrolled (not significantly different from the 23 percent of full-time students who did so); 11 percent considered themselves primarily employees (lower than the 14 percent of full-time students); and 69 percent considered themselves primarily students (higher than the 59 percent of full-time students). These patterns

Figure C. Percentage of undergraduates with selected enrollment characteristics, by enrollment intensity: 2003–04



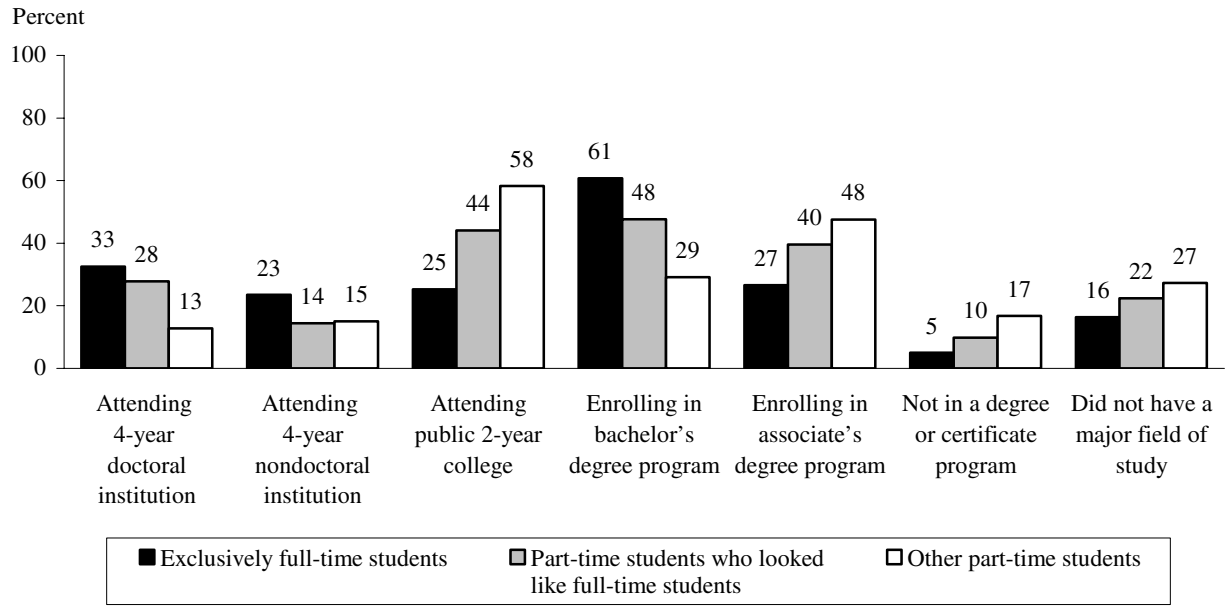
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

suggest that many students in this subgroup placed more importance on study than work.

Why did students work? Among students who worked but considered themselves primarily students, financial concerns appeared to be the dominant reason for working: 63 percent worked to help pay their tuition, fees, and living expenses, and 24 percent worked to earn some spending money. Less than 1 in 10 (7 percent) reported that they worked to gain job experience. Exclusively part-time students were especially concerned about their financial situations: 72 percent cited paying tuition, fees, or living expenses as the most important reason for working, compared with 59 percent of full-time students. However, part-time students who looked like full-time students were less likely than full-time students to cite this reason (55 vs. 60 percent).

Although 35 percent of those who considered themselves primarily students thought that working helped them with career preparation, fewer (14 percent) said that it helped them with coursework. On the other hand, between 31 and 48 percent said that working restricted their academic choices including class schedule, number of classes taken, and access to school facilities, and 41 percent reported that it had a negative effect on their grades. Exclusively part-time students were more likely than full-time students to report these problems. Part-time students who looked like full-time students were

Figure D. Percentage of full-time and part-time undergraduates with selected enrollment characteristics: 2003–04



NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

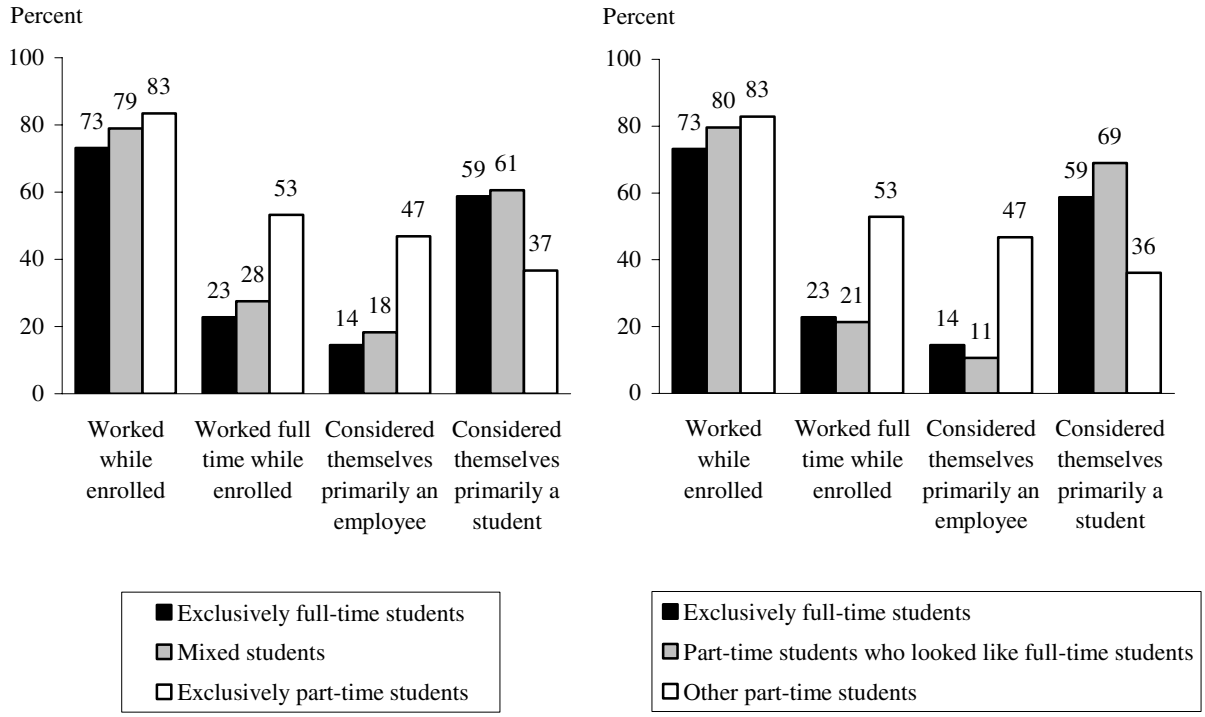
also more likely than full-time students to report the problems of class choice, class schedule, and number of classes they could take. In summary, working while enrolled seemed to present obstacles to those who considered themselves primarily students.

Persistence and Degree Attainment After 6 Years

This report uses longitudinal data from the 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01) to examine persistence and degree attainment 6 years after students entered postsecondary education.[3] Consistent with earlier research (Berkner, He, and Cataldi 2002; Carroll 1989; O'Toole, Stratton, and Wetzel 2003), this report found that part-time enrollment was negatively associated with long-term degree attainment and

[3] Because BPS:96/01 covers a longer interval of enrollment data than NPSAS:2004, the sample included a higher percentage of students who changed their enrollment status (i.e., students with mixed enrollment intensity) than in NPSAS:2004 (41 vs. 16 percent). Overall, 59 percent of BPS:96/01 students maintained the same enrollment status for the duration of their enrollment from 1995–96 to 2000–01: some 47 percent were enrolled exclusively full time, and 12 percent were enrolled exclusively part time. Like part-time students in NPSAS:2004, part-time students in BPS:96/01 were further divided into two subgroups: those who looked like full-time students and those who did not. A total of 47 percent of part-time students in BPS:96/01 were identified as part-time students who looked like full-time students.

Figure E. Percentage of undergraduates who worked while enrolled, worked full time while enrolled, or considered themselves primarily a student or an employee, by enrollment intensity: 2003–04

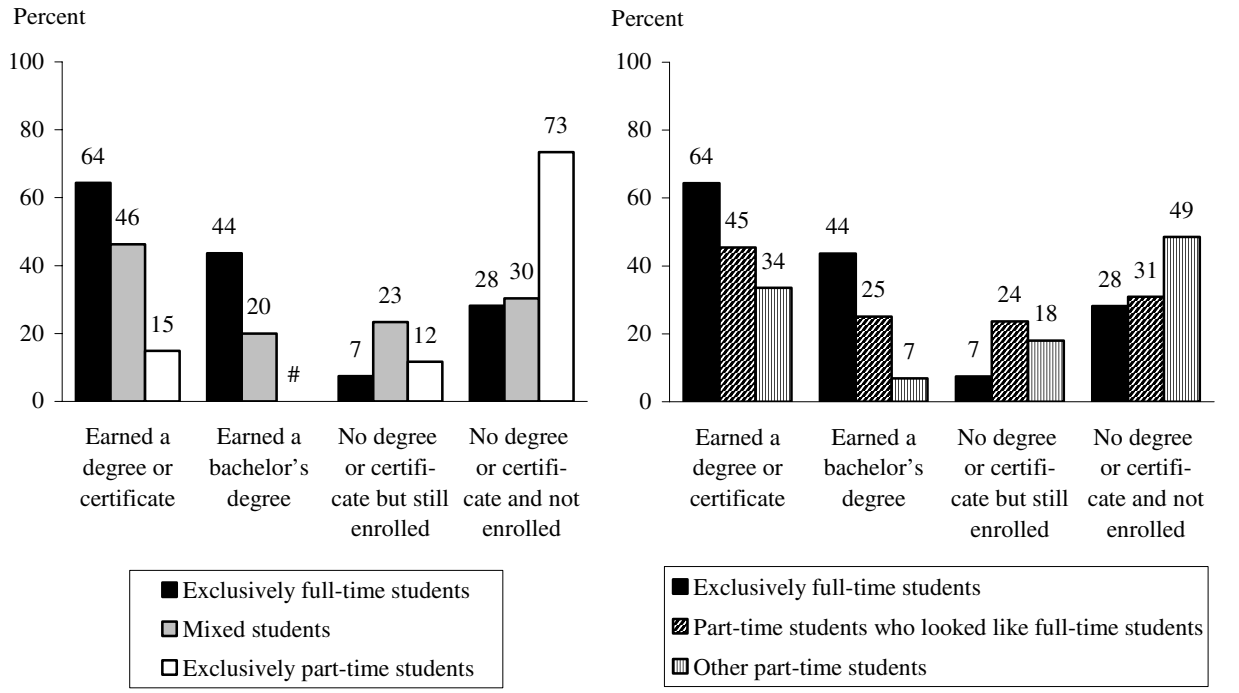


NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

persistence. Looking at 1995–96 beginning students who attended school exclusively part time for the duration of their enrollment through 2000–01, 15 percent had completed a degree or certificate by 2001; none had earned a bachelor's degree; 27 percent persisted (either had earned a degree or were still enrolled); a total of 73 percent had left without earning a degree; and 46 percent had left during the first year (figure F). In contrast, 64 percent of exclusively full-time students had completed a degree or certificate, 44 percent had earned a bachelor's degree, 72 percent persisted, 28 percent had left without a degree, and 12 percent had left during the first year. Although part-time students who looked like full-time students appeared to be more successful than other part-time students with respect to these same outcomes, they lagged behind their full-time counterparts in overall degree attainment (45 vs. 64 percent) and bachelor's degree completion (25 vs. 44 percent).

Part-time enrollment was negatively associated with students' postsecondary outcomes even after controlling for a wide range of related factors, including students' demographic and family backgrounds, academic preparation, and enrollment and employment characteristics. Regardless of whether they

Figure F. Percentage of 1995–96 beginning postsecondary students who had earned a degree/certificate or a bachelor's degree, who had not earned a degree but were still enrolled, and who had not earned a degree and were not enrolled, by enrollment intensity: 2001



Rounds to zero.
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

looked like full-time students, exclusively part-time students lagged far behind their full-time peers in terms of overall degree completion, bachelor's degree completion, and persistence toward a degree after controlling for many related factors. Mixed enrollment students also lagged behind their full-time peers with respect to bachelor's degree completion, although significant differences in their rates for overall degree attainment and persistence could not be detected after controlling for related factors.

Were factors related to degree attainment and persistence consistent across student groups? To address this question, separate commonality analyses were conducted for full-time students, part-time students who looked like full-time students, and other part-time students. The results of these analyses reveal both similarities and differences among these groups of students. First, across all three groups, some factors consistently had a negative association with students' postsecondary outcomes. These factors reflect poor academic preparation (i.e., remedial coursetaking and low scores on college entrance examinations), low commitment to postsecondary education (i.e., taking breaks in enrollment, low expectations for postsecondary education), concentrations in subbaccalaureate degree programs, and priority given to work

over study (i.e., students always considering themselves as employees or changing their primary role from students to employees). It is noteworthy that although students who took breaks in their enrollment had lower rates of degree attainment across all three groups, these students consistently had higher rates of persistence.

Not all factors were consistently related to students' postsecondary outcomes across all three groups of students. For example, gender was a significant factor (favoring females) for full-time students, but not for the two subgroups of part-time students. Full-time students who initially attended private doctoral institutions had better postsecondary outcomes than their peers who entered public doctoral institutions; however, for the two subgroups of part-time students, those initially attending private 4-year nondoctoral institutions had better outcomes than those who entered public doctoral institutions. Full-time students without degree goals had lower rates of degree attainment than those with bachelor's degree expectations; but this pattern was not observed among the two subgroups of part-time students (i.e., nondegree and bachelor's degree seekers both had relatively low rates of degree completion). In summary, while some factors had consistent relationships with postsecondary outcomes across all three groups, others did not. This information may be useful to postsecondary administrators in assisting them to design programs to help various groups of students persist in their postsecondary studies and attain a degree.

Conclusion

Part-time undergraduates, especially exclusively part-time students, were at a distinct disadvantage relative to those who were enrolled full time: they came from minority and low-income family backgrounds; they were not as well-prepared for college as their full-time peers; they were highly concentrated in 2-year colleges and nondegree/certificate programs; and many of them worked full time while enrolled, placed a priority on work over study, and did not enroll continuously.

In addition, the report found that part-time enrollment was negatively associated with long-term persistence and degree attainment even after controlling for a wide range of factors related to these outcomes. This was the case even for the group of students with characteristics that fit the typical profile of a full-time student (i.e., age 23 or younger, financially dependent on parents, graduated from high school with a regular diploma, and received financial help from parents to pay for postsecondary education); regardless of whether they resembled full-time students, part-time students (especially exclusively part-time students) lagged behind their full-time peers in terms of their postsecondary outcomes even after controlling for a variety of related factors.

Foreword

This report uses data from the 2003–04 National Postsecondary Student Aid Study (NPSAS:2004) to provide a profile of part-time undergraduates enrolled in U.S. postsecondary institutions in 2003–04. The NPSAS survey, which is carried out every 4 years, targets the population of all students in Title IV institutions in the United States and Puerto Rico between July 1 and June 30 in a given academic year. It provides detailed information about undergraduate and graduate/first-professional students in terms of their demographic characteristics, postsecondary experiences, and financial aid. This report uses data collected from about 80,000 undergraduates who were enrolled in postsecondary education at any time between July 1, 2003 and June 30, 2004.

In addition to data from NPSAS:2004, the report also uses longitudinal data from a nationally representative sample in the 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01) to examine associations between part-time enrollment and education outcomes (i.e., persistence and degree completion) 6 years after beginning postsecondary education. The BPS:96/01 focuses on students identified in NPSAS:96 as first-time beginning students in postsecondary education in 1995–96 and covers their experiences over 6 academic years. The survey provides rich information about the rates at which these students attained degrees, transferred to other institutions, and left postsecondary education without attaining any degree. This report used a sample of about 9,000 BPS students who participated in the initial survey in 1996 and the last survey in 2001.

The estimates presented in this report were produced using the NPSAS:2004 Undergraduate Student Data Analysis System (DAS) as well as BPS:96/01 DAS. The DAS is a computer application that allows users to specify and generate their own tables and produces the design-adjusted standard errors necessary for testing the statistical significance of differences between numbers shown in the tables. It is available for public use on the NCES website at http://nces.ed.gov/das. Appendix B of this report contains additional information on the DAS.

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At NCES, Dennis Carroll oversaw the development of the report and shepherded it through the review process. Paula Knepper provided thorough technical, methodological, and substantive reviews. The author is grateful for thoughtful comments from a number of other reviewers, including Clifford Adelman (Office of Vocational and Adult Education), Shelley Burns (NCES), Tricia Grimes (Minnesota Office of Higher Education), Daniel Goldenberg (NCES), and Mark Schneider (NCES). Lisa Bridges of IES also provided thoughtful comments and gathered and synthesized helpful comments from two anonymous external reviewers.

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Introduction

After dramatic growth between 1970 and 1990, part-time students have formed a large and stable segment of undergraduate population in the United States (Hussar 2005). In fall 2004, approximately 5.5 million undergraduate students were enrolled part time, making up 37 percent of the undergraduate enrollment in all degree-granting postsecondary institutions (U.S. Department of Education 2006). The part-time enrollment rates are much higher if one looks at students' enrollment data over a longer period of time. For instance, an examination of enrollment intensity over the entire 1999–2000 academic year reveals that 51 percent of undergraduates were enrolled part time for some or all of that year (Horn, Peter, and Rooney 2002). In addition, an examination of enrollment data of beginning postsecondary students who began in 1995–96 and who were subsequently followed up 6 years later (in 2000–01) indicates that 53 percent of these students had attended school part time at least once over this 6-year period (Berkner, He, and Cataldi 2002). The sizeable part-time population has drawn much attention in recent policy discussions on postsecondary education, and students' enrollment status has been used as a standard variable in predicting outcomes by the research community (Adelman 1999; Borden 2004; Davies 1999; Pascarella and Terenzini 1998).

Although many undergraduates attend part time at some time during their college enrollment, those who attend part time rather than full time share some distinctive characteristics. Earlier research showed that part-time students are more likely than full-time students to be older, Hispanic, married, and financially independent (McCormick, Geis, and Vergun 1995; Hearn 1992). Part-time students were also found to be more likely than full-time students to attend less-than-4-year colleges, enroll in lower degree programs, and work full time while enrolled, and they were less likely to receive financial aid. Partly reflecting these conditions, part-time students were more likely than full-time students to interrupt their enrollment, prolong their time to a degree, or terminate their studies prematurely without earning any degree (Berkner, He, and Cataldi 2002; Carroll 1989; O'Toole, Stratton, and Wetzel 2003). Because persisting in college and completing a degree are one of the important goals of college education, the lower rates of persistence and degree attainment among part-time students are of serious concern to postsecondary institutions, state and federal policymakers, and researchers.

This report uses data from the 2003–04 National Postsecondary Student Aid Study (NPSAS:2004) to provide an updated profile of part-time undergraduates enrolled in U.S.

postsecondary institutions in the 2003–04 academic year.[1] It also uses longitudinal data from the 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01) to examine the persistence and degree attainment of students 6 years after they initially enrolled in college. While providing an overall picture of part-time students, this report also takes a closer look at a subgroup of part-time students with characteristics similar to the profile of a typical full-time student—that is, who were of traditional college age (i.e., age 23 or younger when beginning college), financially dependent on their parents, graduated from high school with a regular diploma, and received help from their parents to pay for higher education. This analysis is intended to examine whether and how this subgroup behaved differently from their full-time and other part-time peers with respect to enrollment, employment, and subsequent persistence and attainment. The findings of this report provide a further understanding of part-time students and certain conditions that promote or hinder their success in postsecondary education.

Organization of the Report

The reminder of this report is divided into four main sections. The first section provides an overview of the demographic characteristics, family backgrounds, and academic preparation of part-time students. Following this initial overview, this section introduces the subgroup of part-time students who "looked like" full-time students. The next section examines enrollment-related characteristics of part-time students, including the type of institution attended, degree program, major field of study, and enrollment duration. The third section focuses on how part-time students combined school and work and how these concurrent activities were associated with their postsecondary experiences. The last section of the report provides an analysis of the rates of persistence and degree attainment of part-time students and concludes with multivariate commonality analyses of these outcomes after taking various interrelated factors into account.

Data Sources

The primary data source for this report is the 2003–04 National Postsecondary Student Aid Study (NPSAS:2004). The NPSAS survey, which is carried out every 4 years, targets the population of all students in Title IV institutions in the United States and Puerto Rico between July 1 and June 30 in a given academic year. This cross-sectional survey provides data for comprehensive descriptions of the undergraduate and graduate/first-professional student populations in terms of their demographic characteristics, academic programs, types of institutions attended, attendance patterns, employment, tuition and price of attendance, financial

[1] McCormick, Geis, and Vergun (1995) used data from the 1989–90 National Postsecondary Student Aid Study (NPSAS:90) to provide the first profile of part-time undergraduates enrolled in U.S. postsecondary institutions in 1989–90.

aid received, and the net price of attendance after aid. This report uses data collected from about 80,000 undergraduates who were enrolled at any time between July 1, 2003 and June 30, 2004 in about 1,300 postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. These students represent about 19 million undergraduates enrolled in postsecondary institutions in the 2003–04 academic year. More information about NPSAS:2004 can be found in appendix B.

In addition to data from NPSAS:2004, this study uses longitudinal data from the 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01) to provide information on the persistence and degree attainment of a nationally representative sample of students who began their postsecondary education in 1995–96. Approximately 12,000 students (representing about 3 million first-time beginning students) were first interviewed in 1996 when they initially enrolled in college. These students were interviewed again in 1998, 3 years after they had started postsecondary education; and interviewed for the last time in 2001, 6 years after their initial college entry. BPS:96/01, which covers the experiences of first-time beginning students over 6 academic years, provides rich information about the rates at which these students attained degrees, transferred to other institutions, and left postsecondary education without attaining any degree. To determine persistence and attainment rates over this 6-year period, this report selects a sample of about 9,000 students who participated in the initial survey in 1996 and the last survey in 2001. More information about BPS:96/01 can be found in appendix B.

This report focuses on the comparisons between students with different enrollment patterns. All comparisons made in the report were tested using Student's *t* statistic. All differences cited were statistically significant at the .05 level. In addition, this report uses multiple linear regressions (referred to as "commonality analysis") to explore the unique relationship between one particular independent variable (e.g., enrollment intensity) and outcome variable (e.g., degree completion) after controlling for all other factors or independent variables. Appendix B provides more information about these methods. Standard errors for all estimates are available at http://nces.ed.gov/das/library/reports.asp.

Results of this study should be interpreted with caution because this report is descriptive in nature and was not designed to test an underlying theoretical model. For example, many comparisons revealed significant differences between two or more subgroups of students. However, these comparisons do not account for complex interrelationships among variables and significant differences may disappear after controlling for other factors. Even though this report uses the commonality analysis to take into account the interrelations among the variables when looking for unique associations between particular dependent and independent variables, causality cannot be inferred. Furthermore, some independent variables are measured at a

particular time and do not reflect possible changes in these variables that may affect whether or not a student can and does persist toward degree completion (e.g., dependent students may become independent or vice versa; work intensity may change). Finally, many variables included in the analysis are self-reported and more accurate measures might reveal associations that are not evident in the current report.

Part-Time Undergraduates in Postsecondary Education

Part-time students are typically identified by their enrollment intensity at a single point in time in a given academic year. For example, as reported in *The Condition of Education 2006,* 37 percent of undergraduates in degree-granting 2- and 4-year postsecondary institutions were part-time students in fall 2004 (U.S. Department of Education 2006). Some researchers have argued that the estimate for a single point in time tends to understate the prevalence of part-time enrollment because it does not take into account the fact that many students change their enrollment status during the course of their studies (Adelman 1999). Using a time frame of 1 academic year in 1989–90, McCormick, Geis, and Vergun (1995) found that 14 percent of undergraduates changed their enrollment status at least once during the year. They also found that students who made this change did not entirely resemble those who always kept the same enrollment status.

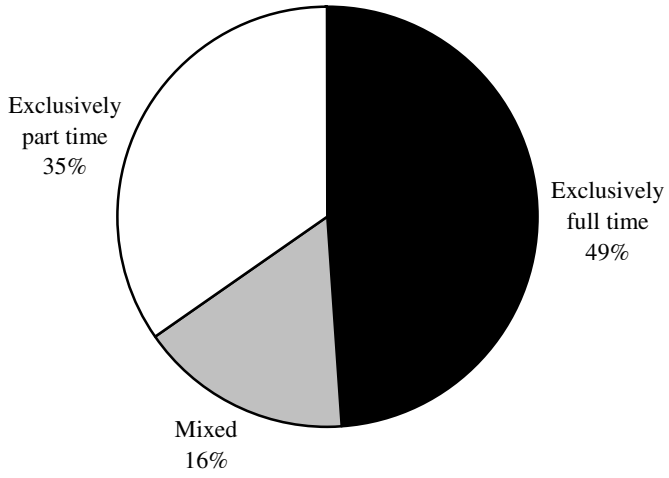
In order to examine the population of part-time students and their postsecondary experience in detail, this report uses the pattern of students' enrollment over a full year to identify part-time students. Based on students' reports of their enrollment status from July 2003 through June 2004, students can be classified into three groups: exclusively full time (i.e., enrolled full time only during the entire enrollment duration[2]), exclusively part time (i.e., enrolled part time only during the entire enrollment duration), and mixed (indicating a change in enrollment status during the academic year). Using this approach, 49 percent of undergraduates were identified as exclusively full-time students in 2003–04, 35 percent were identified as exclusively part-time students, and 16 percent were identified as students with mixed full-time and part-time enrollment[3] (figure 1).

Demographic and Academic Characteristics

Many findings from this study of part-time undergraduates in 2003–04 were consistent with an earlier report that profiled part-time undergraduates in 1989–90 (McCormick, Geis, and Vergun 1995). Exclusively part-time and full-time students differed in many of their characteristics, and those with mixed attendance patterns typically fell in between these two groups. Demographically, exclusively part-time students were more likely than exclusively

[2] The enrollment duration could be less than the full academic year (e.g., just one term or semester).
[3] About 64 percent of students with mixed attendance began as part-time students and subsequently enrolled full time and 36 percent shifted from full-time to part-time status. About 57 percent were enrolled mostly full time, 22 percent were enrolled mostly part time and 21 percent were enrolled full time and part time equally.

Figure 1. Percentage distribution of undergraduates by enrollment intensity: 2003–04



NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

full-time students to be age 30 or older (46 vs. 14 percent), female (61 vs. 55 percent), Hispanic (14 vs. 11 percent), and first-generation students (41 vs. 30 percent)[4] (table 1). Consistent with their age differences, exclusively part-time students were also more likely than exclusively full-time students to be financially independent (75 vs. 35 percent), married (36 vs. 17 percent), and have one or more dependents (39 vs. 27 percent).

Among independent students, exclusively part-time students were more likely than their full-time counterparts to have earnings in the top 25 percent of the income distribution (32 vs. 15 percent), reflecting in part their differences related to employment (see the section, "Combining School and Work"). Among dependent students, however, exclusively part-time students were more likely than their full-time counterparts to come from low-income families (28 vs. 24 percent) (table 1), and correspondingly they were less likely to receive financial help from their parents to pay for such costs as tuition and fees, education expenses, housing, and other living expenses (figure 2).

[4] A term used to describe a group of college students whose parents have never attended college.

Table 1. Percentage distribution of undergraduates by enrollment intensity and selected demographic characteristics: 2003–04

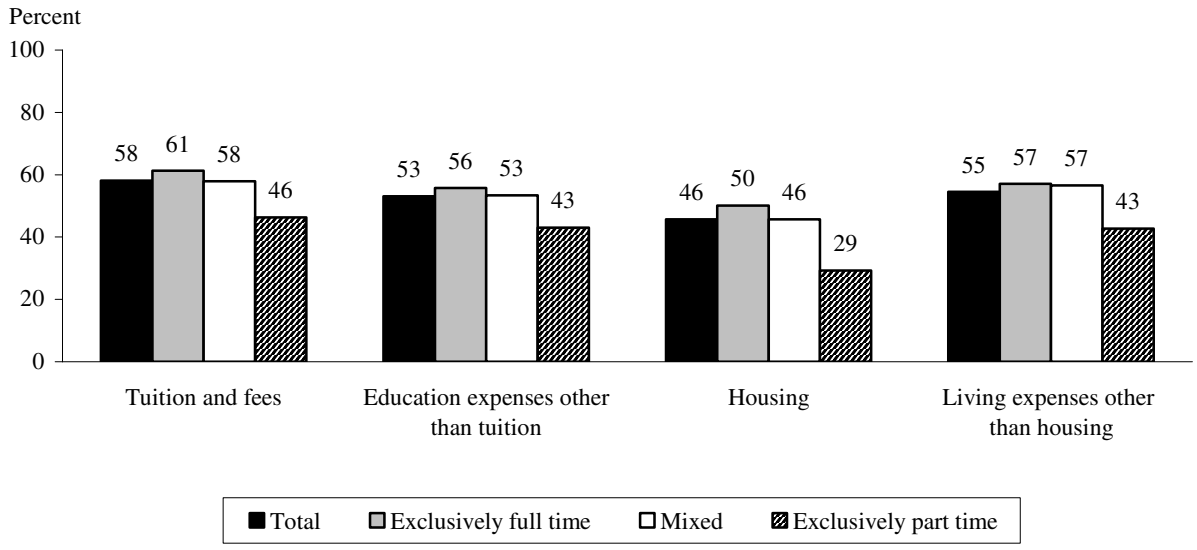
Selected demographic characteristics	Total	Enrollment intensity: Exclusively full time	Mixed	Exclusively part time
Total	100.0	100.0	100.0	100.0
Age as of 12/31/2003				
Younger than 24	56.8	72.4	64.2	31.3
24–29	17.3	13.5	17.0	22.9
30 or older	25.9	14.1	18.9	45.9
Gender				
Male	42.4	44.9	41.1	39.4
Female	57.6	55.1	58.9	60.6
Race/ethnicity[1]				
White	63.1	65.2	61.8	60.9
Black	14.0	13.5	13.6	14.8
Hispanic	12.7	11.4	13.6	14.2
Asian/Pacific Islander	5.9	5.8	6.9	5.7
American Indian	0.9	0.9	0.8	1.0
Other	3.3	3.3	3.4	3.4
Dependency and marital status				
Dependent	49.7	65.3	56.6	24.6
Independent	50.3	34.7	43.4	75.5
Single with no dependent	15.8	11.9	14.6	21.8
Married with no dependent	7.4	4.5	6.0	12.1
Single with one or more dependents	13.2	10.5	12.0	17.5
Married with one or more dependents	13.9	7.8	10.8	24.0
Parents' highest education level				
High school or less	34.6	30.4	33.0	41.4
Some college	24.4	23.9	25.2	24.7
Bachelor's degree	22.0	23.9	22.2	19.1
Graduate/professional degree	19.1	21.9	19.7	14.8
Family income of dependent students				
Lowest quarter	25.5	24.5	26.3	28.3
Middle two quarters	50.0	49.9	49.2	51.2
Highest quarter	24.5	25.6	24.5	20.6
Income of independent students				
Lowest quarter	25.5	35.1	31.1	17.7
Middle two quarters	50.0	49.8	51.4	49.8
Highest quarter	24.5	15.1	17.5	32.5

[1] Black includes African American, Hispanic includes Latino, Asian/Pacific Islander includes Native Hawaiian, and American Indian includes Alaska Native. The "other" category includes more than one race or those who identified themselves with another race not shown in the table. Race categories exclude Hispanic origin unless specified.

NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

Figure 2. Percentage of dependent undergraduates who reported that their parents helped pay various expenses for postsecondary education, by enrollment intensity: 2003–04



NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

Exclusively part-time students were also relatively disadvantaged in academic areas. As shown in table 2, exclusively part-time students were less likely than their full-time peers to have earned a regular high school diploma (85 vs. 89 percent), more likely to have taken a remedial course after high school (38 vs. 31 percent), and less likely to expect to earn a graduate degree in the future (50 vs. 65 percent).

Students with mixed enrollment intensity tended to fall in between the two groups of exclusively full-time and part-time students. For example, 19 percent of students with mixed attendance were age 30 or older, higher than the proportion for exclusively full-time students (14 percent) but lower than that for exclusively part-time students (46 percent) (table 1). About 43 percent of students with mixed attendance were independent students, again falling in between the 35 percent of exclusively full-time students and the 75 percent of exclusively part-time students. Students with mixed enrollment intensity also exhibited some characteristics similar to those of exclusively full-time students (e.g., income, type of high school diploma, and educational expectations) and had other characteristics resembling those of exclusively part-time students (e.g., gender, race/ethnicity, and remedial coursetaking) (tables 1 and 2).

Table 2. Percentage distribution of undergraduates by enrollment intensity and selected academic characteristics: 2003–04

Selected academic characteristics	Total	Enrollment intensity: Exclusively full time	Mixed	Exclusively part time
Total	100.0	100.0	100.0	100.0
Type of high school degree				
High school diploma	88.0	89.5	89.2	85.4
GED or equivalency	6.9	5.8	6.2	8.7
No high school degree or certificate	1.6	1.3	1.1	2.3
Other[1]	3.6	3.6	3.5	3.6
Ever took remedial course after high school				
Yes	34.3	31.0	36.4	38.0
No	65.7	69.0	63.6	62.0
Highest level of education ever expected				
No postsecondary degree/certificate	0.6	0.4	0.4	1.1
Certificate	2.2	2.3	1.3	2.5
Associate's degree	8.0	5.6	6.3	12.1
Bachelor's degree	29.8	27.1	27.6	34.7
Graduate degree	59.4	64.6	64.5	49.5

[1] Including those who were home schooled or attended foreign high schools.
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

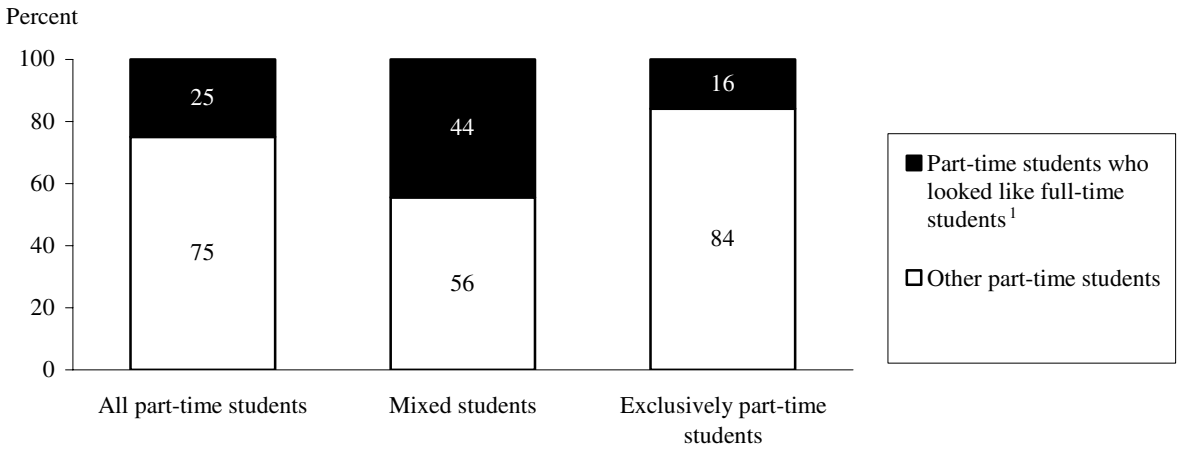
Part-Time Students Who Looked Like Typical Full-Time Students

In addition to making overall comparisons between part-time and full-time students, this report takes a closer look at a subgroup of part-time students who exhibited some characteristics commonly found among full-time students—that is, students who were of traditional college age (age 23 or younger when beginning college), financially dependent on their parents, graduated from high school with a regular diploma, and received financial help from their parents to pay for postsecondary education.[5] This report takes a detailed look at this subgroup of students to examine whether and how they behaved differently from their full-time counterparts and other part-time peers and what factors were related to their postsecondary outcomes.

[5] It is important to note that not all full-time students fit this typical profile. For example, in 2003–04, just about one-half of full-time undergraduates had these characteristics.

Overall, this subgroup of part-time students made up 25 percent of those who attended school part time for part or all of their enrollment in 2003–04 (figure 3). Students with mixed enrollment intensity were more likely than exclusively part-time students to fall into this subgroup (44 vs. 16 percent). Compared with other part-time students, these students were more likely to be male, White or Asian/Pacific Islander, have well-educated parents, come from middle- or high-income families (dependent students only), and expect to earn a graduate degree in the future. They were less likely to have taken any remedial courses after high school (table 3).

Figure 3. Percentage distribution of part-time undergraduates by whether they were part-time students who looked like full-time students: 2003–04



[1] These students meet all of the following characteristics: (1) age 23 or younger on December 31, 2003; (2) dependent; (3) had a regular high school diploma; and (4) received parental help to pay tuition and fees, educational expenses, housing, or living expenses other than housing.
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

Compared with their full-time peers, this subgroup of part-time students was slightly more likely to be Hispanic and Asian/Pacific Islander but less likely to be Black, and more likely to come from well-educated families and take remedial courses. The two groups could not be distinguished in terms of gender distribution, family income (for dependent students only), and educational expectations. In summary, this subgroup of part-time students generally resembled their full-time peers, and thus are often referred to as "part-time students who looked like full-time students" in the remainder of this report.

Table 3. Percentage distribution of part-time undergraduates with typical characteristics of full-time students, by enrollment intensity and selected demographic and academic characteristics: 2003–04

Selected demographic and academic characteristics	Exclusively full time	Part-time students who looked like full-time students			Other part-time students		
		Total	Exclusively part time	Mixed	Total	Exclusively part time	Mixed
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gender							
Male	44.9	45.8	48.2	44.0	38.0	37.7	38.9
Female	55.1	54.2	51.8	56.1	62.0	62.3	61.1
Race/ethnicity[1]							
White	65.2	64.1	60.0	67.2	60.2	61.0	57.5
Black	13.5	10.0	11.2	9.2	15.9	15.5	17.1
Hispanic	11.4	14.5	17.3	12.3	13.9	13.7	14.6
Asian/Pacific Islander	5.8	7.1	6.9	7.3	5.7	5.4	6.5
American Indian	0.9	0.6	0.9	0.4	1.1	1.0	1.1
Other	3.3	3.7	3.6	3.7	3.3	3.3	3.2
Parents' highest education level							
High school or less	30.4	26.0	30.4	22.8	43.0	43.5	41.3
Some college	23.9	24.8	24.8	24.8	24.9	24.7	25.5
Bachelor's degree	23.9	25.7	24.8	26.4	18.2	18.1	18.7
Graduate/professional degree	21.9	23.5	20.1	26.0	14.0	13.8	14.5
Family income of dependent students							
Lowest quarter	24.5	23.4	24.8	22.3	37.0	34.6	40.8
Middle two quarters	49.9	51.3	52.5	50.5	47.1	48.8	44.6
Highest quarter	25.6	25.3	22.7	27.2	15.9	16.7	14.7
Ever took remedial courses after high school							
Yes	31.0	35.5	39.8	32.3	38.1	37.6	39.7
No	69.0	64.5	60.2	67.7	61.9	62.4	60.3
Highest level of education ever expected							
No postsecondary degree/certificate	0.4	0.4	0.5	0.3	1.0	1.2	0.4
Certificate	2.3	0.8	1.3	0.5	2.5	2.7	1.9
Associate's degree	5.6	6.4	9.8	3.8	11.6	12.6	8.4
Bachelor's degree	27.1	28.6	33.8	24.7	33.7	34.9	29.9
Graduate degree	64.6	63.9	54.6	70.8	51.2	48.6	59.5

[1] Black includes African American, Hispanic includes Latino, Asian/Pacific Islander includes Native Hawaiian, and American Indian includes Alaska Native. The "other" category includes more than one race or those who identified themselves with another race not shown in the table. Race categories exclude Hispanic origin unless specified.

NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

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Enrollment Characteristics of Part-Time Undergraduates

Part-time and full-time students differ on many enrollment characteristics, including the type of institution attended, degree program in which they were enrolled, major field of study, and the length of enrollment time (McCormick, Geis, and Vergun 1995). This section examines the extent to which these enrollment characteristics differed between various groups of part-time students and their full-time counterparts in 2003–04.

Type of Institution

One characteristic that distinguishes exclusively part-time students from exclusively full-time students is the type of institutions they attend. In 2003–04, a majority of exclusively part-time students (64 percent) attended public 2-year institutions, compared with 25 percent of their exclusively full-time peers (table 4). On the other hand, exclusively full-time students were more likely than exclusively part-time students to attend public and private not-for-profit 4-year doctoral institutions (33 vs. 11 percent). Students with mixed enrollment intensity fell in between the two other groups; for example, 36 percent of them were enrolled in public 2-year institutions, higher than the proportion for exclusively full-time students (25 percent) but lower than that for exclusively part-time students (64 percent). In addition, students with mixed enrollment intensity were more likely than the other two groups of students to attend multiple institutions (12 vs. 6–7 percent).

Part-time students who looked like full-time students also tended to be clustered in 2-year institutions: about 44 percent of these students attended public 2-year institutions compared with 25 percent of exclusively full-time students. This pattern was especially true for those who attended school exclusively on a part-time basis (63 percent).

Degree Program

Consistent with their clustering in public 2-year institutions, exclusively part-time students were more likely than exclusively full-time students to be enrolled in an associate's degree program (50 vs. 27 percent) or not be in any degree or certificate program (19 vs. 5 percent) and were much less likely to be enrolled in a bachelor's degree program (24 vs. 61 percent) (table 5).

Table 4. Percentage distribution of undergraduates by type of institution and enrollment intensity: 2003–04

Enrollment intensity	Public 4-year doctoral	Private not-for-profit 4-year doctoral	Public 4-year nondoctoral	Private not-for-profit 4-year nondoctoral	Public 2-year	More than one institution	Other[1]
Total	19.3	5.1	10.7	8.4	40.3	7.5	8.7
Exclusively full time	25.1	7.5	12.2	11.3	25.2	6.4	12.4
Mixed	22.9	4.5	13.5	6.5	35.9	12.2	4.5
Exclusively part time	9.4	2.1	7.4	5.1	63.6	6.8	5.6
Part-time students who looked like full-time students							
Total	23.2	4.6	10.5	3.9	44.0	11.4	2.4
Mixed	29.7	6.4	13.3	5.4	29.4	14.1	1.8
Exclusively part time	14.6	2.3	6.9	2.0	63.3	7.7	3.1
Other part-time students							
Total	10.6	2.3	9.0	6.1	58.3	7.6	6.2
Mixed	17.4	3.0	13.8	7.5	41.0	10.7	6.6
Exclusively part time	8.4	2.0	7.5	5.7	63.6	6.7	6.1

[1] The "other" category includes private not-for-profit, less than 4-year institutions and any type of private for-profit institutions.
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

Again students with mixed enrollment patterns tended to fall in between the two other groups, with 53 percent in a bachelor's degree program and 37 percent in an associate's degree program.

Although part-time students who looked like full-time students had a higher enrollment rate in a bachelor's degree program than other part-time students (48 vs. 29 percent), they were still less likely than their exclusively full-time counterparts to be enrolled in a bachelor's degree program (48 vs. 61 percent). On the other hand, they were more likely than exclusively full-time students to be enrolled in an associate's degree program (40 vs. 27 percent) or not be in any degree or certificate program (10 vs. 5 percent).

Table 5. Percentage distribution of undergraduates by degree program and enrollment intensity: 2003–04

Enrollment intensity	Certificate	Associate's degree	Bachelor's degree	Not in a degree or certificate program
Total	6.7	36.3	46.9	10.2
Exclusively full time	7.7	26.6	60.7	5.1
Mixed	3.9	36.5	53.4	6.2
Exclusively part time	6.5	49.8	24.4	19.2
Part-time students who looked like full-time students				
Total	3.0	39.6	47.7	9.8
Mixed	1.7	30.1	62.5	5.7
Exclusively part time	4.6	52.1	28.1	15.2
Other part-time students				
Total	6.6	47.5	29.1	16.8
Mixed	5.6	41.7	46.2	6.6
Exclusively part time	6.9	49.4	23.8	20.0

NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

For students who attended less-than-4-year institutions or were not enrolled in any degree or certificate program, it is informative to examine the reasons why they pursued postsecondary education. As shown in table 6, the reasons most frequently cited by these students included pursuing personal interest or enrichment (47 percent), learning job skills (42 percent), completing an associate's degree (38 percent), and transferring to a 4-year institution (34 percent). Both exclusively part-time and full-time students were more likely than mixed enrollment students to indicate that they were enrolled in college for personal interest or enrichment or to learn job skills, whereas the latter group was more likely to cite the reason of earning an associate's degree or transferring to a 4-year institution. Transferring was cited as a major reason for pursuing postsecondary education among part-time students who looked like full-time students: 47 percent of these students who attended less-than-4-year institutions or were not enrolled in any degree or certificate program indicated that they wished to transfer to a 4-year college, 7 percent cited transferring to a 2-year college, and 12 percent cited transferring to another type of college, compared with 36, 6, and 10 percent, respectively, of their exclusively full-time counterparts.

Table 6. Among undergraduates who were enrolled in a less-than-4-year institution or not enrolled in a degree or certificate program, percentage who reported various reasons for enrolling in post-secondary education, by enrollment intensity: 2003–04

	Reasons for enrolling						
Enrollment intensity	Complete an associate's degree	Complete a certificate	Learn job skills	Personal interest or enrichment	Transfer to a 2-year college	Transfer to a 4-year college	Transfer to other type of college
Total	38.5	19.0	42.5	46.6	5.5	33.5	9.0
Exclusively full time	37.9	21.6	44.0	46.0	5.8	36.2	10.0
Mixed	41.0	17.4	38.2	42.6	6.0	39.9	8.5
Exclusively part time	38.2	17.7	42.6	48.2	5.1	29.7	8.4
Part-time students who looked like full-time students							
Total	38.7	16.9	31.9	43.8	7.3	46.6	11.6
Mixed	37.7	16.2	27.9	41.6	7.1	49.0	10.5
Exclusively part time	39.5	17.3	34.6	45.4	7.4	45.0	12.4
Other part-time students							
Total	38.8	17.8	44.1	47.7	4.8	28.3	7.6
Mixed	42.9	18.0	44.3	43.3	5.4	34.6	7.3
Exclusively part time	37.9	17.7	44.0	48.7	4.7	26.9	7.6

NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

Major Field of Study

Almost one-third of exclusively part-time students (31 percent) had not declared a major field of study, compared with 15 to 16 percent of the other two groups (table 7). In addition, exclusively part-time students were less likely than the other two groups to major in all fields except for computer or information science, health, and vocational or technical fields. Notably, exclusively part-time students were about half as likely as full-time students to major in the social and behavior sciences, life sciences, physical sciences, mathematics, and engineering.

Among part-time students who looked like full-time students, the percentage of those with no major field of study remained high (22 percent overall and 31 percent for those who were exclusively part time). This pattern may reflect the fact that a relatively high proportion of these students were not enrolled in a degree program.

Table 7. Percentage distribution of undergraduates by their major field of study and enrollment intensity: 2003–04

Enrollment intensity	Major field of study												
	Humanities	Social or behavioral sciences	Life sciences	Physical sciences	Mathematics	Computer or information science	Engineering	Education	Business or management	Health	Vocational or technical	Other technical or professional	Undeclared
Total	10.4	7.0	3.9	0.6	0.5	4.9	4.2	6.7	15.6	12.9	2.4	9.7	21.3
Exclusively full time	10.7	8.6	4.8	0.8	0.6	5.0	5.0	7.2	15.9	11.7	2.5	11.2	16.3
Mixed	11.3	8.2	4.5	1.0	0.6	4.7	4.4	8.3	17.0	13.2	2.0	9.9	15.0
Exclusively part time	9.4	4.2	2.3	0.3	0.3	4.9	2.9	5.3	14.6	14.4	2.5	7.6	31.3
Part-time students who looked like full-time students													
Total	12.3	8.1	4.8	0.7	0.7	3.6	4.4	7.6	14.3	9.8	1.9	9.5	22.4
Mixed	12.1	9.7	5.5	1.0	0.8	3.6	4.9	8.9	16.0	9.5	1.7	10.5	15.8
Exclusively part time	12.6	6.1	3.8	0.3	0.5	3.6	3.6	5.9	11.9	10.3	2.2	8.2	31.1
Other part-time students													
Total	9.3	4.6	2.4	0.4	0.3	5.2	3.1	5.9	15.8	15.4	2.5	7.9	27.3
Mixed	10.8	7.1	3.6	0.9	0.4	5.7	3.9	7.8	17.9	16.1	2.2	9.5	14.3
Exclusively part time	8.8	3.8	2.0	0.3	0.3	5.1	2.8	5.2	15.1	15.2	2.6	7.5	31.4

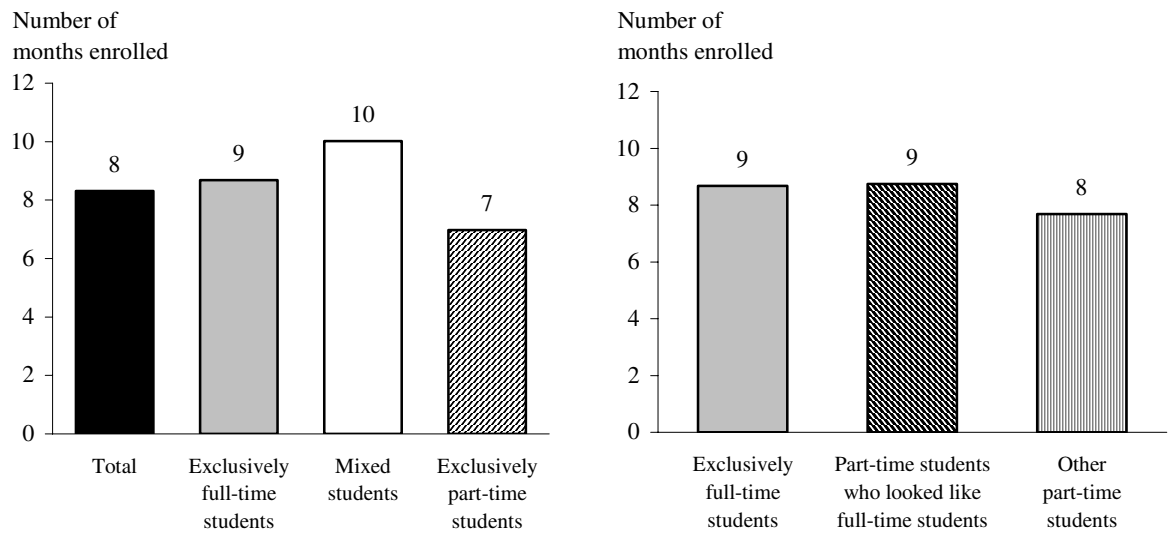
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

Enrollment Duration

Many students took time off from their studies (Berkner, He, and Cataldi 2002). Some returned later to complete a program, and others left permanently without attaining a degree. Figure 4 presents a comparison of the average number of months enrolled in the 2003–04 academic year for students with different patterns of enrollment intensity. Overall, students with mixed enrollment intensity stayed in school the longest, averaging 10 months of enrollment in 2003–04. This reflects the fact that students must have attended two terms for a change in enrollment status, while those who attended for only one term are necessarily assigned to one of the exclusive categories. Exclusively full-time students were enrolled for 9 months, equivalent to one academic year.[6] Exclusively part-time students were enrolled for fewer months than the other two groups, averaging 7 months. This pattern held among part-time students who looked like full-time students as well as other part-time students.

Figure 4. Average number of months enrolled by enrollment intensity: 2003–04



NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

[6] A full academic year typically lasts 9 months (e.g., starting in September and ending in May).

Short enrollment duration may indicate three possible outcomes: early degree completion, late entry, stopout or dropout behavior, or nondegree enrollment in which students finish their program in a single term or semester (McCormick, Geis, and Vergun 1995). By focusing attention on first- and second-year students who began in the fall and were enrolled in a degree program, shorter enrollment likely indicates stopout or dropout behavior. The differences in enrollment duration described above remained after these sample restrictions (table 8), suggesting that exclusively part-time students may have been more likely than full-time students or those with mixed enrollment intensity to stop out or drop out.

Table 8. Number of months enrolled by enrollment intensity: 2003–04

Enrollment intensity	All undergraduates	First- and second-year students who began in the fall and were enrolled in a degree program
Total	8.3	9.2
Exclusively full time	8.7	9.3
Mixed	10.0	10.1
Exclusively part time	7.0	8.5
Part-time students who looked like full-time students		
Total	8.7	9.4
Mixed	10.2	10.2
Exclusively part time	6.8	8.2
Other part-time students		
Total	7.7	9.0
Mixed	9.9	10.1
Exclusively part time	7.0	8.5

NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

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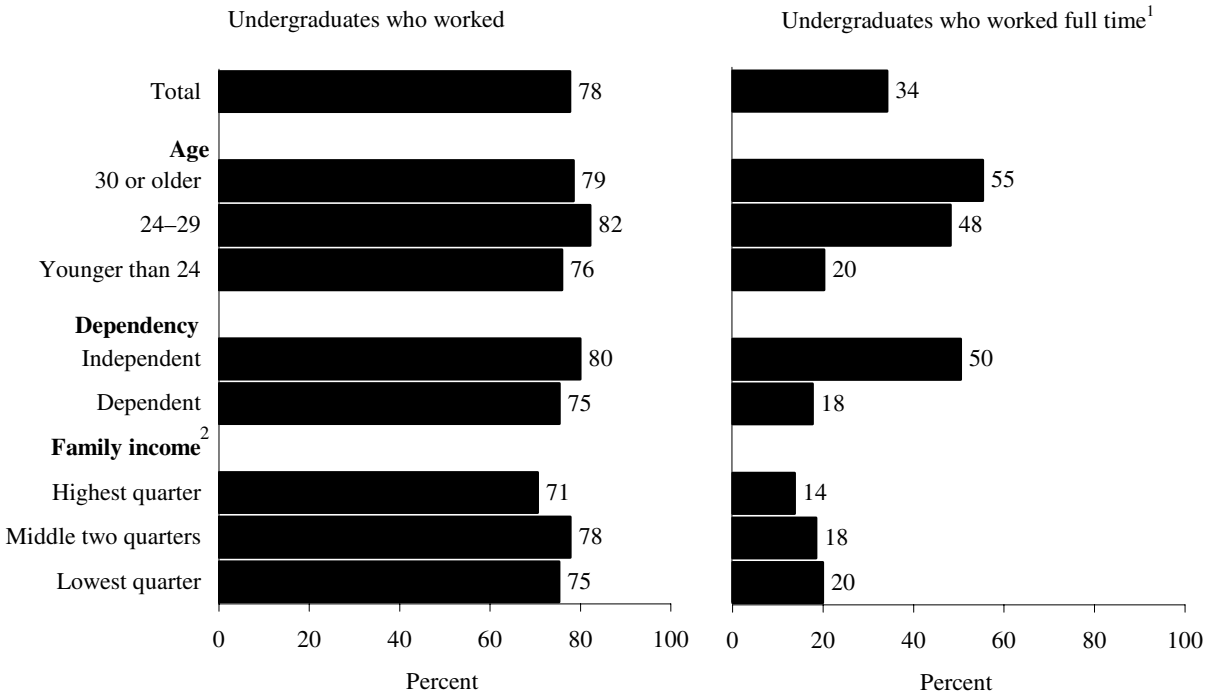
Combining School and Work

As college costs rise, increasing numbers of students turn to work to pay for their education (King and Bannon 2002). In 2003–04, 82 percent of undergraduates reported that they would not be able to attend college if they did not work.[7] Indeed, a majority of undergraduates (78 percent) worked while enrolled in postsecondary education in 2003–04 (figure 5). Although working

Figure 5. Percentage of undergraduates who worked while enrolled and who worked full time, by age, dependency status, and family income of dependent students: 2003–04



[1] Worked 35 hours or more per week.
[2] For dependent students only.
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

[7] Estimates from the 2003–04 National Postsecondary Student Aid Study (NPSAS:2004), Data Analysis System.

while enrolled was common among all subgroups of students (i.e., by age, dependency status, and family income), it was their work intensity (full time vs. part time) that set students apart. For example, younger and dependent students (particularly those from high-income families) were less likely than older and independent students to work full time. Previous studies have indicated that some students report that working while enrolled helps them with their coursework and preparation for their future careers, but other students reported that working compromises the quality of their college experience and represents a barrier to advancing academically (Horn 1994; Hudson and Hurst 2002; King and Bannon 2002). This section examines how part-time and full-time students combined school and work and how these concurrent activities affected their postsecondary experiences.

Employment and Primary Role

In 2003–04, 83 percent of exclusively part-time undergraduates worked while enrolled, more than one-half (53 percent) of them worked full time, and 47 percent considered themselves primarily employees who decided to enroll in school (table 9). Although a majority of exclusively full-time students (73 percent) worked while enrolled, just under one-fourth (23 percent) worked full time and 14 percent considered themselves primarily employees. For students with mixed enrollment intensity, their employment rate, work intensity, and perceived primary roles were more like those of exclusively full-time students than those of exclusively part-time students.

Working intensity was significantly reduced among part-time students who looked like full-time students: 21 percent had a full-time job while enrolled (not measurably different from the 23 percent of full-time students); the number of hours they worked per week was 26 hours, on average (not significantly different from full-time students); 11 percent considered themselves primarily employees (lower than 14 percent of full-time students); and 69 percent considered themselves primarily students (higher than the 59 percent of full-time students). These results suggest that many of these students may have placed more emphasis on study than work.

Unlike part-time students who looked like full-time students, other part-time students had a heavy work load: 83 percent worked while enrolled, 53 percent of them worked full time, and their average work week was 35 hours. In addition, more of them considered themselves primarily employees than students (47 vs. 36 percent).

Table 9. Percentage of undergraduates who worked while enrolled and who worked full time, average number of hours worked per week, and percentage distribution by their primary role, by enrollment intensity: 2003–04

	Worked while enrolled[1]			Primary role		
Enrollment intensity	Total	Percent who worked full time[2]	Of those who worked, number of hours worked per week	Primarily student who worked	Primarily employee who studied	Student who did not work
Total	77.7	34.2	29.5	51.4	26.3	22.3
Exclusively full time	73.2	22.8	25.7	58.7	14.4	26.8
Mixed	78.9	27.5	27.7	60.6	18.3	21.1
Exclusively part time	83.5	53.3	34.8	36.6	46.9	16.5
Part-time students who looked like full-time students						
Total	79.6	21.4	25.9	69.0	10.6	20.4
Mixed	79.3	14.5	23.4	73.5	5.9	20.7
Exclusively part time	80.0	30.6	29.1	63.1	16.9	20.0
Other part-time students						
Total	82.8	52.9	34.8	36.1	46.7	17.2
Mixed	78.6	38.0	31.0	50.3	28.3	21.4
Exclusively part time	84.1	57.5	35.9	31.6	52.5	15.9

[1] Including work-study/assistantship.
[2] Worked 35 hours or more per week.
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

Reasons for and Effects of Working While Enrolled

Why did students work? This question was asked of those who worked but considered themselves primarily students. According to their responses, financial concerns appeared to be the dominant reason for working: 63 percent worked to help pay tuition, fees, and living expenses, and 24 percent worked to earn some spending money (table 10). Less than 1 in 10 (7 percent) cited that they worked to gain job experience.

Table 10. Among students who worked while enrolled but still considered themselves primarily students, percentage distribution by their main reasons for working and enrollment intensity: 2003–04

Enrollment intensity	Earn spending money	Pay tuition, fees, or living expenses	Gain job experience	Other
Total	24.2	63.4	7.3	5.1
Exclusively full time	28.5	59.5	7.3	4.7
Mixed	25.1	62.2	7.7	5.0
Exclusively part time	14.5	72.5	6.9	6.1
Part-time students who looked like full-time students				
Total	32.0	55.2	8.2	4.6
Mixed	35.9	51.6	8.1	4.4
Exclusively part time	26.1	60.6	8.3	5.0
Other part-time students				
Total	10.9	76.3	6.6	6.3
Mixed	12.3	74.8	7.2	5.8
Exclusively part time	10.2	77.0	6.3	6.5

NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

Exclusively part-time students were more likely than exclusively full-time students to cite paying tuition, fees, or living expenses as a reason for working (72 vs. 59 percent), whereas exclusively full-time students were more likely to cite earning spending money (29 vs. 15 percent). However, among students who looked like full-time students, the percentage who cited paying college-related expenses as a reason for working was reduced: 55 percent cited this reason, compared with 59 percent of exclusively full-time students and 76 percent of other part-time students.

Students who worked while enrolled but considered themselves primarily students were also asked about the impact of employment on their study. Overall, their responses indicated more limitations than benefits. Although some students reported that working helped them with career preparation (35 percent), a smaller percentage (14 percent) thought that it helped them with coursework (table 11). On the other hand, between 31 and 48 percent thought that employment limited their class schedule (48 percent), reduced the number of classes they could take (40 percent), restricted their choice of classes (34 percent), and limited their access to the

Table 11. Among students who worked while enrolled but still considered themselves primarily students, percentage who reported various effects of working, by enrollment intensity: 2003–04

Enrollment intensity	Helped with career preparation	Helped with coursework	Restricted class choice	Limited class schedule	Limited facility access	Limited number of classes	Had negative effects on grade
Total	34.6	13.5	33.7	47.6	30.9	40.2	41.1
Exclusively full time	33.2	12.7	27.8	40.4	26.9	32.3	38.5
Mixed	35.2	13.0	34.0	48.3	30.6	40.1	42.5
Exclusively part time	37.3	15.9	46.8	63.4	39.9	58.4	45.6
Part-time students who looked like full-time students							
Total	36.2	13.1	32.6	48.0	27.4	39.5	37.5
Mixed	36.1	12.7	27.7	41.3	25.5	32.7	35.8
Exclusively part time	36.3	13.9	40.2	58.5	30.4	49.9	40.1
Other part-time students							
Total	36.5	15.6	46.6	62.4	41.2	57.3	48.6
Mixed	34.0	13.4	41.2	56.6	36.6	48.7	50.3
Exclusively part time	37.7	16.7	49.3	65.3	43.5	61.5	47.7

NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

facility (31 percent). In addition, 41 percent reported that working had a negative effect on their grades.

Students who attended part time for all or some of their enrollment in 2003–04 were more likely than their full-time peers to report each of these limitations of working. Part-time students who looked like full-time students were also more likely than exclusively full-time students to report various limits imposed by their employment. In addition, the likelihood of reporting each problem was highest among other part-time students, which was not a surprising result given the amount of time they worked each week (table 9).

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Persistence and Attainment After 6 Years

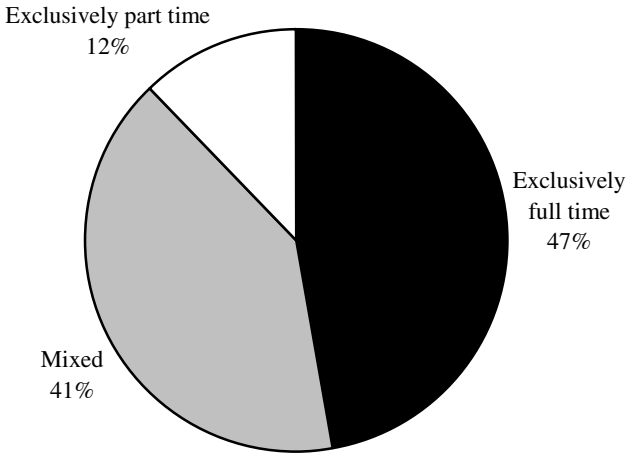
Persistence toward and completion of a degree are among the most important indicators of students' success in postsecondary education. This section examines these two outcomes. Unlike earlier research that typically treated part-time students as one group (McCormick, Geis, and Vergun 1995; O'Toole, Stratton, and Wetzel 2003), this analysis divides part-time students into various subgroups and compares their persistence and degree attainment among themselves and with those of full-time students. The findings of this analysis provide useful information about the experiences of part-time students that may be related to their outcomes in postsecondary education.

Persistence and degree attainment are best studied using longitudinal data. For this purpose, data from the 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01) are used here to examine the rates of persistence and degree attainment of students 6 years after they entered postsecondary education. Since BPS:96/01 covers a longer interval of enrollment data than the 2003–04 National Postsecondary Student Aid Study (NPSAS:2004), one would expect to see more mixed enrollment students (indicating a change in enrollment status) in the BPS cohort than in the NPSAS:2004. As shown in figure 6, some 41 percent of BPS:96/01 students were identified as mixed enrollment students over 6 years, higher than the 16 percent of NPSAS:2004 students. Overall, 59 percent of BPS:96/01 students maintained the same enrollment status for the duration of their enrollment from 1995–96 through 2000–01: 47 percent were enrolled exclusively full time, and 12 percent were enrolled exclusively part time.

Like part-time students in NPSAS:2004, part-time students in BPS:96/01 were distinguished from full-time students based on age, dependency status, type of high school diploma obtained, and whether they received financial help from their parents at the time of their initial enrollment. Because BPS:96/01 includes only students who enrolled in postsecondary education for the first time in 1995–96, it contains a higher proportion of young and dependent students[8] and, therefore, a higher proportion of part-time students who looked like full-time students than the NPSAS:2004 population discussed above. As shown in figure 7, among 1995–96 beginning students who had attended school part time at least once over 6 years, 47 percent were classified as part-time students who looked like full-time students, a higher

[8] For example, 81 percent of BPS:96/01 students were under 24 years old and 73 percent were dependent, compared with 57 and 50 percent of NPSAS:2004 students, respectively (Berkner, He, and Cataldi 2002; see table 1).

Figure 6. Percentage distribution of 1995–96 beginning students by enrollment intensity through 2001



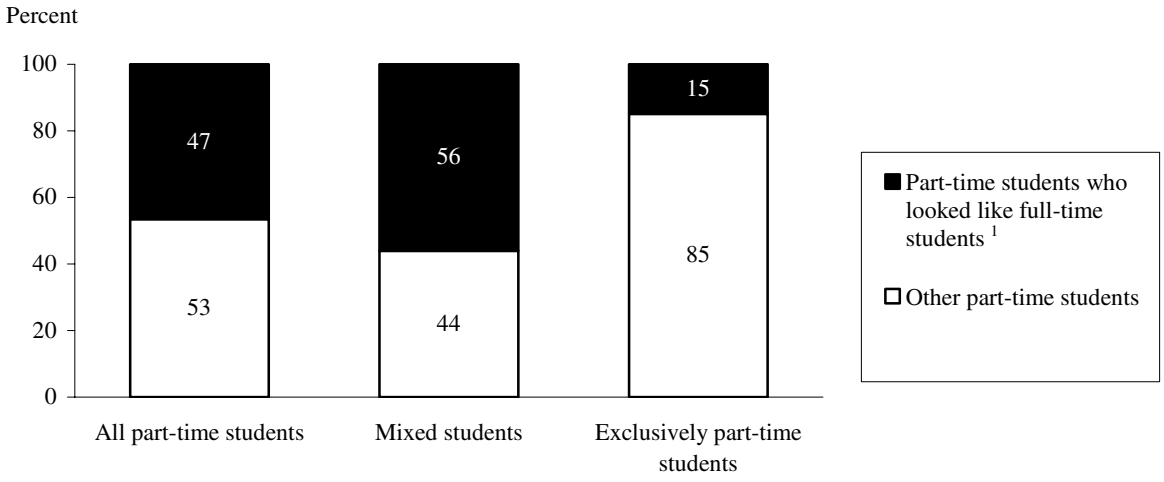
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

proportion than the 25 percent of part-time students in NPSAS:2004. Students with mixed enrollment intensity were more likely than exclusively part-time students to be classified as part-time students who looked like full-time students (56 vs. 15 percent).

Degree Attainment and Persistence After 6 Years

Consistent with earlier research (Berkner, He, and Cataldi 2002; Carroll 1989; O'Toole, Stratton, and Wetzel 2003), part-time enrollment was negatively associated with long-term degree attainment and persistence. Looking at 1995–96 beginning students who attended school exclusively part time for their entire enrollment through 2001, 15 percent had completed a degree or certificate by 2001, none had earned a bachelor's degree, and 73 percent were no longer enrolled and had not earned any degree (table 12). In contrast, 64 percent of exclusively full-time students had earned a degree or certificate, 44 percent had earned a bachelor's degree, and 28 percent had left without a degree. Students with mixed enrollment intensity fell in between these two groups, with 46 percent attaining a degree or certificate, 20 percent attaining a bachelor's degree, and 30 percent leaving without a degree.

Figure 7. Among 1995–96 beginning postsecondary students who attended school part time between 1995–96 and 2000–01, percentage distribution by whether they were part-time students who looked like full-time students



[1] These beginning postsecondary students meet all of the following characteristics when first enrolled in 1995–96: (1) age 23 or younger; (2) dependent; (3) had a regular high school diploma; and (4) received parental help to pay tuition and fees, educational expenses, housing, or living expenses other than housing.
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

Large attainment gaps were even observed among students who started postsecondary education with a degree goal (figure 8). Again exclusively part-time students were less likely than their full-time counterparts to have earned a degree or certificate (15 vs. 65 percent) and were more likely to have left without earning a degree (70 vs. 26 percent).

Part-time students who looked like full-time students appeared to be more successful than other part-time students with respect to these outcomes: 45 versus 34 percent completed a degree, 25 versus 7 percent earned a bachelor's degree, 24 versus 18 percent were still enrolled, and 31 versus 49 percent left without a degree (table 12). Because they needed more time to accumulate credits, part-time students who looked like full-time students still lagged behind their full-time peers in terms of overall degree attainment (45 vs. 64 percent) and bachelor's degree completion (25 vs. 44 percent) and were more likely than full-time students to be still enrolled 6 years after they had started postsecondary education (24 vs. 7 percent). Combining this

Table 12. Percentage distribution of 1995–96 beginning postsecondary students by highest degree of attainment and persistence through 2001 and enrollment intensity

	Attained a degree/certificate				Did not attain a degree/certificate			
Enrollment intensity	Total	Bachelor's degree	Asso-ciate's degree	Certificate	Total	Enrolled at 4-year institution	Enrolled at less-than-4-year institution	Not enrolled
Total	51.0	28.7	10.0	12.3	49.0	8.8	5.6	34.6
Exclusively full time	64.4	43.7	8.3	12.4	35.6	6.0	1.5	28.2
Mixed	46.3	20.0	14.3	12.1	53.7	14.0	9.4	30.4
Exclusively part time	14.9	#	2.3	12.7	85.1	2.9	8.8	73.4
Part-time students who looked like full-time students								
Total	45.4	25.0	13.6	6.8	54.6	14.3	9.4	30.9
Mixed	48.5	27.0	14.5	6.9	51.5	15.3	8.6	27.7
Exclusively part time	7.2	#	2.5	4.7	92.8	1.8	19.8	71.3
Other part-time students								
Total	33.5	6.9	9.7	16.9	66.5	8.9	9.1	48.5
Mixed	43.6	10.9	14.0	18.6	56.4	12.3	10.4	33.8
Exclusively part time	16.3	#	2.2	14.1	83.7	3.1	6.9	73.8

Rounds to zero.
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

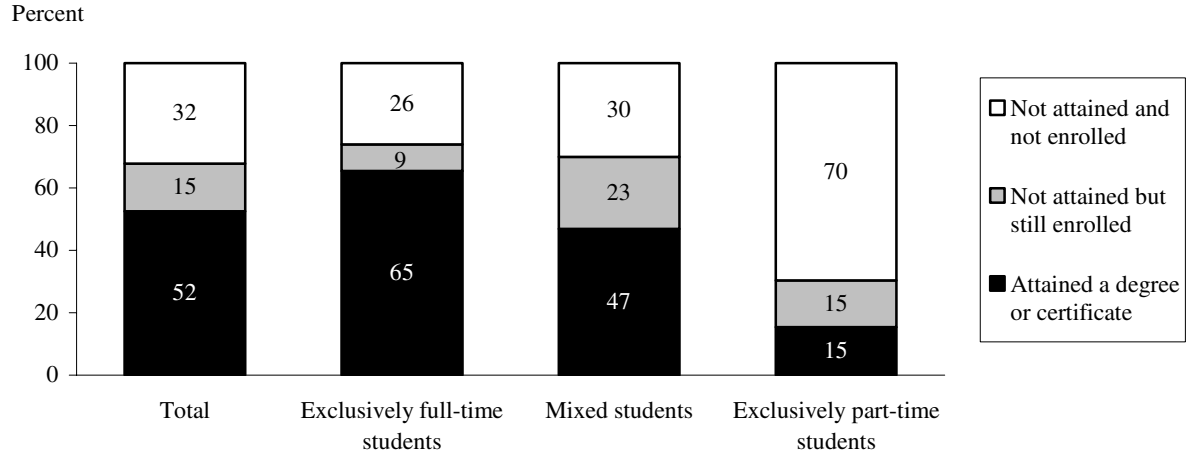
enrollment rate with the overall degree completion rate, both groups had persistence rates of roughly 70 percent (not shown in table 12).[9]

Timing of Departure

The high attrition rates of exclusively part-time students are of serious concern. Thus, it is important to obtain information about when they are most likely to leave postsecondary education. Table 13 presents the persistence and annual attrition rates of students who began their postsecondary education in 1995–96. About 27 percent of exclusively part-time students

[9] Persistence is measured by the sum of the percentage who had attained a degree or certificate by 2001 and the percentage who were still enrolled by 2001. Thus, the persistence rate is 72 percent (64+6+2) for exclusively full-time students and 69 percent (46+14+9) for part-time students who looked like full-time students.

Figure 8. Among 1995–96 beginning postsecondary students who started postsecondary education with a degree goal, percentage distribution by degree attainment and persistence in 2001 and enrollment intensity



NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

persisted (i.e., still enrolled or had attained a degree) 6 years after their initial entry, a proportion that was substantially lower than the 72 percent for their full-time peers. Looking at the pattern of annual attrition rates reveals that the first year was the most common time for students to leave postsecondary education. Nearly half of exclusively part-time students (46 percent) left college during their first year, compared with 12 percent of exclusively full-time students. Only 3 percent of students with mixed enrollment intensity left in the first year, which was the lowest rate among the three groups. However, mixed enrollment students had somewhat higher attrition rates than full-time students starting in the third year.

As a group, part-time students who looked like full-time students had lower first-year attrition rates than other part-time students and exclusively full-time students (4 vs. 20 and 12 percent, respectively). However, considerable differences existed among part-time students who looked like full-time students: a total of 62 percent of those who attended school exclusively on a part-time basis left during their first 3 years, a rate that was much higher than that among those with mixed enrollment intensity (13 percent). For both groups, attrition rates peaked in the third year and declined subsequently.

Table 13. Percentage distribution of 1995–96 beginning postsecondary students by whether they attained any degree or certificate in 2001, or if they did not attain, the year they left postsecondary education, by enrollment intensity

	No degree/certificate, the year leaving postsecondary education without return						6-year persistence summary		
Enrollment intensity	1995–1996	1996–1997	1997–1998	1998–1999	1999–2000	2000–2001	Still enrolled in 2001	Attained a degree/ certificate by 2001	Persistence[1]
Total	12.3	5.4	6.6	4.4	3.9	2.0	14.4	51.0	65.4
Exclusively full time	11.6	5.6	4.4	3.2	2.3	1.1	7.5	64.4	71.8
Mixed	2.8	4.2	8.2	6.5	5.7	2.9	23.3	46.3	69.7
Exclusively part time	46.3	8.8	9.6	2.1	4.4	2.3	11.7	14.9	26.6
Part-time students who looked like full-time students									
Total	4.4	3.8	8.7	6.2	5.0	2.8	23.7	45.4	69.1
Mixed	2.4	3.2	7.8	6.7	5.1	2.5	23.9	48.5	72.3
Exclusively part time	29.1	11.7	20.8	0.1	3.5	6.1	21.5	7.2	28.8
Other part-time students									
Total	20.3	6.6	8.4	4.8	5.7	2.8	18.0	33.5	51.5
Mixed	3.4	5.5	8.8	6.2	6.3	3.5	22.7	43.6	66.3
Exclusively part time	49.2	8.3	7.6	2.4	4.6	1.6	9.9	16.3	26.2

[1] Persistence is measured by the percentage of students who had attained a degree or certificate by 2001 or were still enrolled in 2001.

NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at http://nces.ed.gov/das/library/reports.asp.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

Factors Related to Degree Attainment and Persistence

The tabular analyses described above show that part-time enrollment was associated with many demographic, academic, enrollment, and employment characteristics as well as long-term persistence and degree attainment. Although these relationships are informative, they are bivariate and may reflect more complex relationships among multiple factors. For example, the data in table 12 indicate that exclusively part-time students were less likely than exclusively full-time students to attain a degree. This may be due to the fact that the latter group had family and academic backgrounds that were relatively advantaged, which may have had positive effects on their long-term persistence and degree completion. Because the independent variables included

in this study are interrelated, it may be useful to examine the unique relationships between each independent variable and each dependent variable (i.e., persistence and degree completion) after controlling for the shared, or common, variability among the independent variables included in the analysis. This approach is sometimes referred to as "commonality analysis," in which a multiple linear regression is used to look at the relationship between an independent variable and an outcome variable while adjusting for the common variation among a group of independent variables. It should be noted that commonality analyses conducted in this study are descriptive in nature and are not designed to test an underlying theoretical model. A significant coefficient for a particular independent variable only indicates the unique relationship between this independent variable and the dependent variable when other independent variables are controlled. It does not imply causality. For the purpose of this study, commonality analyses were performed on three outcomes for 1995–96 beginning postsecondary students: overall degree completion rate, bachelor's degree completion rate, and persistence to a degree. Four commonality analyses were performed for each outcome variable, controlling for the common variation among all independent variables included in the analysis. The first analysis used the entire student sample and focused on the independent relationship of students' enrollment intensity to three outcome variables. The results of this analysis reveal persistence and degree attainment rates for each part-time subgroup relative to those of full-time students after controlling for other factors. The next three analyses restricted the sample to exclusively full-time students, part-time students who looked like full-time students, and other part-time students, respectively.[10] The results of these analyses help identify whether the factors related to full-time students' persistence and degree attainment are different from those for the two subgroups of part-time students.

The commonality analyses included the following independent variables: demographic characteristics (gender, race/ethnicity, dependency status, and family socioeconomic status);[11] academic characteristics (type of high school diploma, remedial coursetaking, SAT composite test scores, and education expectations); enrollment characteristics (type of institution when first enrolled, degree program when first enrolled, major field of study when first enrolled, and enrollment continuity and intensity through 2001);[12] and employment characteristics (employment status when first enrolled and primary role perceived).

[10] However, commonality analysis of bachelor's degree completion rate was not performed for other part-time students because there were too few bachelor's degree recipients in this group to obtain reliable estimates.
[11] Age was excluded because it was highly correlated with dependency status.
[12] Enrollment intensity was included as an independent variable only in the first commonality analysis. It was used as the selection filter for the remaining three analyses.

Relationship Between Enrollment Intensity and Degree Attainment and Persistence

Table 14 presents the least squares coefficients from the commonality analyses that examined students' likelihood of earning any degree or certificate, earning a bachelor's degree, and persisting toward a degree over a period of 6 years after they had first entered college. These coefficients represent the difference (either higher or lower) in percentage points that might be expected between the analysis group (e.g., female students) and the comparison group (e.g., male students) after controlling for the interrelationships of all other independent variables included in the analysis. Comparison groups are shown in italics. Significant coefficients (indicated by asterisks) mean that the observed differences in the likelihood of achieving an outcome between the comparison groups and the analysis groups remain even after taking into account the covariation of all other independent variables included in the analysis. Standard errors for the coefficients are presented in tables B-2 through B-5 in appendix B.

After controlling for many related factors, part-time enrollment continued to have a negative relationship with long-term postsecondary outcomes. In particular, regardless of whether they resembled full-time students, exclusively part-time students significantly lagged behind their full-time peers in terms of overall degree completion, bachelor's degree completion, and persistence toward a degree even after controlling for many factors related to these outcomes. Regardless of their resemblance to full-time students, mixed enrollment students also lagged behind their full-time peers with respect to bachelor's degree completion, but their rates of overall degree attainment and persistence were not significantly different after controlling for other factors. Two implications can be drawn from these results. First, the extent of students' part-time enrollment (i.e., exclusively versus partially) was related to their postsecondary outcomes. Exclusively part-time students fared poorly in comparison with partially part-time students in terms of postsecondary persistence and degree completion. Second, the results indicate that possessing some characteristics common to full-time students did not guarantee that part-time students would be as likely to attain a degree or to persist in college as their full-time peers.

Besides enrollment intensity, several other independent variables were also consistently related to postsecondary outcomes. After controlling for other related factors, students who entered college without any degree goal, had ever taken remedial courses after high school, performed poorly on college entrance examinations, worked full time while enrolled in the first year, and always considered themselves primarily employees or changed their primary role from students to employees were less likely than their corresponding comparison groups (shown in italics) to attain a degree or certificate, to earn a bachelor's degree, and to persist toward a degree. Students who took breaks in their enrollment had lower degree attainment rates but

Table 14. Least squared coefficients for percentage of 1995–96 beginning postsecondary students who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics

	Least squared coefficients[1]		
Student characteristics	Earned a degree or certificate	Earned a bachelor's degree	Persistence[2]
Total	77.8	78.8	80.0
Enrollment intensity through 2001			
Exclusively part-time student who looked like full-time students	-35.6 *	-14.7 *	-28.5 *
Other exclusively part-time student	-27.2 *	-10.4 *	-22.6 *
Mixed enrollment student who looked like full-time students	-7.3	-11.8 *	2.1
Other mixed enrollment student	-4.1	-5.9 *	4.1
Exclusively full-time student	†	†	†
Gender			
Female	2.4	2.3	1.9
Male	†	†	†
Race/ethnicity[3]			
Black	-9.0 *	-4.2	-9.4 *
Hispanic	-5.6 *	-5.2 *	-3.8
Asian/Pacific Islander	1.9	4.2	2.0
Other	0.9	9.1	0.0
White	†	†	†
Socioeconomic status index in 1995–96			
Moderately disadvantaged	-1.8	-3.3	-3.9 *
Highly disadvantaged	-3.5	-6.2 *	-3.4
Not disadvantaged	†	†	†
Dependency status in 1995–96			
Independent without dependents	-6.2 *	-5.8	-0.8
Independent with dependents	-0.6	-3.6	2.2
Dependent	†	†	†
Highest level of education expected in 1995–96			
No postsecondary degree or certificate	-14.9 *	-5.7 *	-17.1 *
Certificate	0.9	-6.4 *	-1.1
Associate's degree	0.9	-4.7	-4.6
Graduate degree	7.0 *	7.8 *	8.1 *
Bachelor's degree	†	†	†
Type of high school diploma			
GED or equivalency	-2.3	-4.2	-3.6
No high school degree or certificate	-8.8	-5.6	-11.8 *
Regular high school diploma	†	†	†

See notes at end of table.

Table 14. Least squared coefficients for percentage of 1995–96 beginning postsecondary students who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics —Continued

Student characteristics	Least squared coefficients[1]		
	Earned a degree or certificate	Earned a bachelor's degree	Persistence[2]
Remedial coursetaking after high school			
Yes	-12.8 *	-6.2 *	-8.7 *
No	†	†	†
SAT/ACT composite score			
Did not take/missing	-10.9 *	-22.9 *	-7.5 *
Lowest quarter	-14.7 *	-21.6 *	-8.4 *
Middle two quarters	-5.8 *	-11.0 *	-3.3 *
Highest quarter	†	†	†
Type of first institution			
Private not-for-profit doctoral	9.7 *	9.9 *	5.7
Public 4-year nondoctoral	-4.3	-6.8 *	-3.3
Private not-for-profit 4-year nondoctoral	6.2 *	6.0 *	1.1
Public 2-year	-0.9	-2.8	-3.1
Other	7.9	-12.0 *	3.7
Public 4-year doctoral	†	†	†
Degree program in 1995–96			
Certificate	5.9	-20.7 *	-1.1
Associate's	-5.4	-20.6 *	-8.0 *
Bachelor's	†	†	†
Major field of study in 1995–96			
Humanities	-0.4	-0.9	-1.6
Vocational/technical	-7.6	-5.9	-6.7
Other technical/professional	1.1	-2.9	-0.1
Undeclared	-2.9	-4.0	-0.4
Social/behavioral sciences	-2.7	0.3	-3.7
Life sciences	-1.2	0.0	4.9
Physical sciences	-10.0	-5.0	-5.5
Mathematics	-5.1	3.0	-9.5
Computer/information science	-3.8	-5.0	-3.8
Engineering	3.5	-2.8	5.6
Education	2.9	5.4	0.9
Health	1.7	-4.3	0.6
Business/management	†	†	†
Enrollment continuity through 2001			
Not continuously enrolled	-16.1 *	-19.7 *	7.6 *
Continuously enrolled	†	†	†

See notes at end of table.

Table 14. Least squared coefficients for percentage of 1995–96 beginning postsecondary students who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics —Continued

	Least squared coefficients[1]		
Student characteristics	Earned a degree or certificate	Earned a bachelor's degree	Persistence[2]
Employment status while enrolled in 1995–96			
Worked part time	-3.0	-1.8	0.9
Worked full time	-7.8 *	-4.6 *	-4.6 *
Did not work	†	†	†
Perceived primary role through 2001			
Always considering themselves primarily as an employee	-6.9 *	-5.7 *	-10.9 *
Shifting from primarily a student to primarily an employee	-5.2 *	-8.9 *	-6.5 *
Shifting from primarily an employee to primarily a student	3.9	-1.6	1.8
Always considering themselves primarily as a student	†	†	†

† Not applicable for the reference group.
* $p < .05$.
[1] Least squares coefficients, multiplied by 100 to reflect percentage (see appendix B).
[2] Persistence is measured by the sum of the percentage who had attained a degree or certificate by 2001 and the percentage who were still enrolled in 2001.
[3] Black includes African American, Hispanic includes Latino, and Asian/Pacific Islander includes Native Hawaiian. The "other" category includes American Indian/Alaska Native, those who identified more than one race, and those who identified themselves with another race not shown in the table. Race categories exclude Hispanic origin unless specified.
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. The italicized group in each category is the reference group being compared. Standard errors for the least squares coefficients were presented in table B-2 in appendix B and also available at http://nces.ed.gov/das/library/reports.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

higher persistence rates than those who continued their enrollment, suggesting that many of those who took time off but subsequently resumed their education were continuing to persist in obtaining a postsecondary degree.

Several independent variables were primarily related to bachelor's degree completion. It is obvious that students enrolled in certificate or associate's degree programs were less likely than those in bachelor's degree programs to attain a bachelor's degree within 6 years of first enrolling in a postsecondary institution regardless of other characteristics. Compared with their peers who began their postsecondary education at public 4-year doctoral institutions, those who initially attended private 4-year institutions (both doctoral and nondoctoral) were more likely to attain a

bachelor's degree within 6 years, whereas those who initially attended public 4-year nondoctoral institutions or other institutions were less likely to do so.

Black and Hispanic students were less successful in their postsecondary outcomes than White students. Compared with White students, students from both minority groups had lower overall degree completion rates. Hispanic students also had a lower bachelor's degree completion rate than White students, whereas Black students had a lower persistence rate. Different outcomes were also found by students' family socioeconomic status: students from highly disadvantaged families had lower bachelor's degree completion rates than students from advantaged families, and students from moderately disadvantaged families were less likely to persist than their advantaged counterparts.

Were Factors Related to Degree Attainment and Persistence Consistent Across Student Groups?

Three commonality analyses were conducted for exclusively full-time students, part-time students who looked like full-time students, and other part-time students. The results presented in table 15 led to several conclusions. First, factors that were significant for full-time students were not necessarily significant for part-time students after controlling for all related factors. For example, gender was a significant factor (favoring female students) for full-time students, but not for the two subgroups of part-time students. Among full-time students, those who entered college without any degree goal had lower degree attainment and persistence rates than their peers with a bachelor's degree goal; however, such differences were not replicated for the two subgroups of part-time students (i.e., those without degree goals and those seeking a bachelor's degree had similarly low rates of degree completion). Performance on college entrance examinations were significantly associated with full-time students' overall degree attainment and persistence, but it was a significant factor in bachelor's degree attainment only for the two subgroups of part-time students. In addition, full-time students who initially attended private not-for-profit doctoral institutions had better postsecondary outcomes than their peers who entered public doctoral institutions; however, among the two subgroups of part-time students, those who initially attended private not-for-profit nondoctoral institutions had a higher bachelor's degree completion rate than those who entered public doctoral institutions.

There were, however, several conditions that were consistently associated with postsecondary outcomes for all three subgroups. For example, remedial coursetaking was negatively associated with overall degree attainment and persistence for all three subgroups even after controlling for other related factors. Regardless of their subgroup, those enrolled in certificate or associate's degree programs were less likely than their peers in bachelor's degree

Table 15. Among 1995–96 beginning postsecondary students with various enrollment intensity, least squared coefficients for percentage who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics

	Least squared coefficients[1]							
	Exclusively full time students			Part-time students who looked like full-time students			Other part-time students[2]	
Student characteristics	Earned a degree or certificate	Earned a bachelor's degree	Persistence[3]	Earned a degree or certificate	Earned a bachelor's degree	Persistence[3]	Earned a degree or certificate	Persistence[3]
Total	85.4	79.6	89.7	78.2	76.8	78.8	31.2	47.3
Gender								
Female	4.0 *	3.4	3.2 *	2.2	3.0	-0.7	2.7	1.7
Male	†	†	†	†	†	†	†	†
Race/ethnicity[4]								
Black	-12.6 *	-5.0	-12.0 *	-9.6	-9.2 *	-13.0 *	-2.9	0.7
Hispanic	-6.3 *	-6.1	-4.8	0.8	-3.9	-0.2	-9.0	-6.1
Asian/Pacific Islander	3.0	6.5	1.2	5.5	0.1	2.2	2.4	9.0
Other	-8.7	-1.7	-1.9	1.7	8.9	-4.0	18.1	17.5
White	†	†	†	†	†	†	†	†
Socioeconomic status index in 1995–96								
Moderately disadvantaged	-1.5	-4.6	-3.1	-3.0	-3.4	-4.6	-0.8	-5.0
Highly disadvantaged	-2.5	-5.1	-1.1	-12.0 *	-8.2 *	-6.9	6.0	1.1
Not disadvantaged	†	†	†	†	†	†	†	†
Dependency status in 1995–96								
Independent without dependents	-4.0	-6.0	-0.4	—	—	—	-8.8	-6.1
Independent with dependents	-0.4	-3.8	0.2	—	—	—	-3.5	-2.1
Dependent	†	†	†	—	—	—	†	†

See notes at end of table.

Table 15. Among 1995–96 beginning postsecondary students with various enrollment intensity, least squared coefficients for percentage who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics—Continued

	Least squared coefficients[1]							
	Exclusively full time students			Part-time students who looked like full-time students			Other part-time students[2]	
Student characteristics	Earned a degree or certificate	Earned a bachelor's degree	Persistence[3]	Earned a degree or certificate	Earned a bachelor's degree	Persistence[3]	Earned a degree or certificate	Persistence[3]
Highest level of education expected in 1995–96								
No postsecondary degree or certificate	-29.2 *	-11.8 *	-37.4 *	3.3	5.3	20.1	-11.8	-15.1
Certificate	7.0 *	-3.9	1.7	-3.0	-8.5	-10.8	-2.2	-3.1
Associate's degree	7.4 *	-5.6	0.9	11.0	-8.7	10.9	-4.7	-13.6 *
Graduate degree	6.8 *	9.7 *	7.2 *	5.2	9.1 *	13.4 *	10.7 *	2.8
Bachelor's degree	†	†	†	†	†	†	†	†
Type of high school diploma								
GED or equivalency	-12.6 *	-2.6	-9.7 *	—	—	—	5.8	0.4
No high school degree or certificate	-4.5	0.4	-4.8	—	—	—	-10.6	-19.5 *
Regular high school diploma	†	†	†	—	—	—	†	†
Remedial coursetaking after high school								
Yes	-9.8 *	-5.1	-9.8 *	-9.9 *	-7.5 *	-6.0 *	-15.8 *	-5.9 *
No	†	†	†	†	†	†	†	†
SAT/ACT composite score								
Did not take/missing	-16.1 *	-24.0 *	-13.6 *	-9.2	-13.9 *	-10.5	-1.9	14.9
Lowest quarter	-14.9 *	-21.7 *	-14.2 *	-7.2	-14.9 *	0.4	-15.4	3.8
Middle two quarters	-6.8 *	-9.2 *	-4.8 *	-2.8	-10.4 *	-3.5	2.2	17.0
Highest quarter	†	†	†	†	†	†	†	†

See notes at end of table.

Table 15. Among 1995–96 beginning postsecondary students with various enrollment intensity, least squared coefficients for percentage who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics—Continued

Student characteristics	Least squared coefficients[1]							
	Exclusively full time students			Part-time students who looked like full-time students			Other part-time students[2]	
	Earned a degree or certificate	Earned a bachelor's degree	Persistence[3]	Earned a degree or certificate	Earned a bachelor's degree	Persistence[3]	Earned a degree or certificate	Persistence[3]
Type of first institution								
Private not-for-profit, doctoral	8.6 *	8.2 *	6.4 *	7.9	8.4	2.5	9.0	0.9
Public 4-year nondoctoral	-3.3	-6.3	-2.8	-9.4	-9.8 *	-3.3	-3.6	-8.0
Private not-for-profit 4-year nondoctoral	3.6	2.6	1.9	6.1	8.7 *	-1.2	13.1	-3.7
Public 2-year	-4.8	-8.6	-3.7	-2.4	-8.9	-5.0	1.1	-7.8
Other	10.4 *	-14.6 *	5.7	15.4	-12.0	13.9	16.7	4.9
Public 4-year doctoral	†	†	†	†	†	†	†	†
Degree program in 1995–96								
Certificate	0.9	-24.7 *	-1.3	7.1	-16.0 *	-0.8	7.6	-8.6
Associate's	-4.7	-18.7 *	-6.7	-1.6	-14.2 *	-4.0	-1.0	-9.6
Bachelor's	†	†	†	†	†	†	†	†
Major field of study in 1995–96								
Humanities	-5.6	0.5	-7.7 *	4.2	-9.2 *	11.8	-0.1	-7.4
Vocational/technical	-14.0 *	-4.6	-12.5 *	3.7	-12.5	-11.9	13.8	7.7
Other technical/professional	-13.5 *	-4.2	-12.1 *	7.5	-4.9	5.6	24.7 *	18.1 *
Undeclared	-7.1 *	-1.3	-6.4 *	-9.9	-10.9 *	1.3	10.5	8.8
Social/behavioral sciences	-4.7	3.0	-5.1	-5.9	-12.7 *	-5.6	6.5	5.7
Life sciences	-4.6	2.6	-0.3	-6.2	-12.1 *	11.6	9.1	7.1
Physical sciences	-10.0	-3.2	-4.4	-11.4	-5.6	-1.2	-10.6	-17.9
Mathematics	-12.0	3.8	-13.9	36.9	30.6	22.6	-37.4	-50.2
Computer/information science	-2.9	-3.6	-3.4	-15.3	-14.6	-9.3	3.7	-1.5
Engineering	-3.0	-4.6	-2.4	-5.1	-12.3 *	3.8	21.7 *	21.8 *
Education	0.7	6.9	-1.7	-0.6	-1.9	3.7	15.8	13.5
Health	-5.2	-5.3	-5.2	3.1	-8.8 *	8.9	17.8 *	11.1
Business/management	†	†	†	†	†	†	†	†

See notes at end of table.

Table 15. Among 1995–96 beginning postsecondary students with various enrollment intensity, least squared coefficients for percentage who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics—Continued

Student characteristics	Least squared coefficients[1]							
	Exclusively full time students			Part-time students who looked like full-time students			Other part-time students[2]	
	Earned a degree or certificate	Earned a bachelor's degree	Persistence[3]	Earned a degree or certificate	Earned a bachelor's degree	Persistence[3]	Earned a degree or certificate	Persistence[3]
Enrollment continuity through 2001								
Not continuously enrolled	-17.2 *	-26.5 *	6.9 *	-15.7 *	-23.0 *	5.6 *	-10.1 *	17.4 *
Continuously enrolled	†	†	†	†	†	†	†	†
Employment status while enrolled in 1995–96								
Worked part time	-1.5	-1.5	-1.1	-13.6 *	-7.6 *	-3.2	2.4	10.1
Worked full time	-8.8 *	-3.1	-7.7 *	-17.1 *	-11.9 *	-8.5 *	-6.6	0.4
Did not work	†	†	†	†	†	†	†	†
Perceived primary role through 2001								
Always considering themselves primarily as an employee	-14.7 *	-9.1 *	-15.9 *	-26.5 *	-9.3 *	-31.2 *	-8.1 *	-15.5 *
Shifting from primarily a student to primarily an employee	6.0	-5.5	4.8	-13.7 *	-13.6 *	-16.9 *	-3.1	-4.8
Shifting from primarily an employee to primarily a student	2.2	3.4	0.2	-2.9	-7.2	4.4	13.4	1.3
Always considering themselves primarily as a student	†	†	†	†	†	†	†	†

— Not applicable. (The variable was used to select the sample for this analysis)

† Not applicable for the reference group.

* $p < .05$.

[1] Least squares coefficients, multiplied by 100 to reflect percentage (see appendix B).

[2] Regression on bachelor's degree completion rate was not conducted for this group because too few students had attained a bachelor's degree by 2001, making it difficult to obtain reliable estimates.

[3] Persistence is measured by the sum of the percentage who had attained a degree or certificate by 2001 and the percentage who were still enrolled in 2001.

[4] Black includes African American, Hispanic includes Latino, and Asian/Pacific Islander includes Native Hawaiian. The "other" category includes American Indian/Alaska Native, those who identified more than one race, and those who identified themselves with another race not shown in the table. Race categories exclude Hispanic origin unless specified.

NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. The italicized group in each category is the reference group being compared. Standard errors for the least squares coefficients were presented in tables B-3 through B-5 in appendix B and also available at http://nces.ed.gov/das/library/reports.asp.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

programs to attain a bachelor's degree. Across all three subgroups, students who took breaks in their enrollment had lower rates of degree attainment after 6 years, but they had higher rates of persistence. Lower degree attainment and persistence rates were also consistently observed among students who always considered themselves primarily employees rather than students.

Finally, some relationships were not consistent across the three subgroups of students. For example, Black students were less successful in their postsecondary outcomes than White students among full-time students and part-time students who looked like full-time students; however, this pattern did not hold among other part-time students. Among part-time students who looked like full-time students, highly disadvantaged students were less likely than their more advantaged peers to earn any degree or a bachelor's degree, but such a relationship was not observed among full-time students and other part-time students. Working full time while enrolled had a negative association with the degree attainment and persistence of full-time students and part-time students who looked like full-time students; however, such association was not found among other part-time students. Working part time while enrolled had a negative relationship to degree attainment only for part-time students who looked like full-time students, not for the other two groups.

In summary, while some factors—such as remedial coursetaking, type of degree program, enrollment continuity, and perceived primary role—were consistently related to postsecondary outcomes among all three subgroups, other factors showed different results for each subgroup. This finding may be useful to postsecondary administrators in assisting them to design programs to help various groups of students persist in their postsecondary studies and attain a degree.

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Summary and Conclusions

Many undergraduate students are enrolled part time in postsecondary education. For example, a snapshot of recent college enrollment data indicates that 37 percent of undergraduates were enrolled part time in fall 2004 (U.S. Department of Education 2006). Using enrollment data covering 1 academic year, this report shows that a majority of undergraduates (51 percent) attended school part time for some or all of their enrollment in 2003–04. Thus, it is evident that part-time enrollment figures prominently in undergraduate education and is expected to continue to do so in the future (Hussar 2005). This report uses data from the 2003–04 National Postsecondary Student Aid Study (NPSAS:2004) and the 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01) to provide insight into part-time students' experiences and outcomes in postsecondary education. However, this report is descriptive and was not designed to test an underlying theoretical model. Thus, readers should bear in mind several caveats when interpreting the results of the study. First, the group differences do not account for complex interrelationships among variables and significant differences may change or disappear after controlling for other factors. Second, even though this report uses the commonality analysis to take into account the interrelations among the variables when looking for unique associations between particular dependent and independent variables, causality cannot be inferred because the variables included in the commonality analysis are not exhaustive. Third, some independent variables are measured at a particular time and do not reflect possible changes in these variables that may affect whether or not a student can and does persist toward degree completion; and many variables included in the analysis are self-reported and more accurate measures might reveal associations that are not evident in the current report. With these limitations in mind, the major findings of the study are summarized below.

Part-time students, especially exclusively part-time students, differed from their full-time peers in many respects. For example, compared with full-time students, students who attended school on an exclusively part-time basis were more likely than full-time students to be older, female, Hispanic, married, and financially independent. They were relatively disadvantaged in their family and academic backgrounds, were highly concentrated in public 2-year institutions and subbaccalaureate or nondegree programs, frequently worked full time while enrolled, and had a low level of commitment to college education. Students who had mixed enrollment patterns often fell in between the two groups, with some characteristics similar to those of full-time students and others to those of exclusively part-time students.

In order to provide more information about part-time students, this report further divided part-time students into two subgroups—those who resembled full-time students based on age, dependency status, high school diploma, and whether they received financial help from their parents (referred to as "part-time students who looked like full-time students" here), and those who did not have these characteristics (referred to as "other part-time students"). Overall, part-time students who looked like full-time students were, on average, more advantaged relative to other part-time students in terms of their family backgrounds, academic preparation, educational expectations, enrollment characteristics, and work intensity. Comparing them with full-time students revealed both similarities and differences. Although they resembled full-time students with respect to their demographics, family backgrounds, and educational expectations, part-time students who looked like full-time students possessed many enrollment characteristics associated with part-time attendance, such as being more likely to enroll in public 2-year colleges, enroll in subbaccalaureate or nondegree programs, have no major field, and take breaks in their enrollment. These enrollment characteristics are generally associated with lower persistence and attainment rates in postsecondary education (Berkner, He, and Cataldi 2002).

The findings of this report showed that part-time enrollment was negatively associated with long-term postsecondary outcomes (persistence and degree attainment). This negative relationship remained even after controlling for a wide range of interrelated factors such as students' demographic and family backgrounds, academic preparation, and enrollment and employment characteristics. Furthermore, the results indicate that possessing characteristics common to full-time students did not guarantee that part-time students would be as successful as their full-time peers. In fact, regardless of whether they resembled full-time students, part-time students—especially exclusively part-time students—lagged far behind their full-time peers in persisting toward and completing a postsecondary degree even after controlling for a variety of related factors. Consistent with earlier reports, this finding indicates that part-time students, especially exclusively part-time students, are at relatively greater risk for not persisting in postsecondary education, and for not completing a degree.

Some factors consistently showed negative relationships with degree attainment across various subgroups of students. These factors generally reflected poor academic preparation (i.e., remedial coursetaking and low test scores on college entrance examinations); low commitment to postsecondary education (i.e., having low educational expectations); and priority given to work over education (i.e., always considering themselves as primarily employees). One finding regarding enrollment continuity is worthy of further note: although students who took breaks in their enrollment were more likely to have lower rates of degree attainment than those who did not take breaks, they had higher persistence rates, suggesting that those who took time off, but

who subsequently resumed their education, may persist in their efforts to obtain a postsecondary degree.

The findings reported here also revealed that not all factors showed consistent relationships across student groups. For example, gender was a significant factor for full-time students, but not for the two subgroups of part-time students. Full-time students who initially attended private not-for-profit doctoral institutions had higher overall and bachelor's degree completion rates than their peers who entered public doctoral institutions; however, for the two subgroups of part-time students, those who initially attended private not-for-profit nondoctoral institutions had higher bachelor's degree completion rates than those who initially attended public doctoral institutions. For full-time students, degree attainment was significantly related to their educational goals; however, this was not evident for the two subgroups of part-time students (i.e., those who were not seeking any degree and those who sought a bachelor's degree had low rates of degree completion). In summary, while some factors bear consistent relationships with postsecondary outcomes across subgroups of students, others did not. Information about the factors that are important to each group is useful to college administrators in tailoring programs for specific groups of students and helping them persist in and complete postsecondary education.

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Appendix A—Glossary

This glossary describes the variables used in this report, which come from the NPSAS:2004 and BPS:96/01 Data Analysis System (DAS), a software application developed by NCES to generate tables from the survey data. These variables were either items taken directly from the NPSAS or BPS surveys or derived by combining one or more items in these surveys. A general description of the DAS software and of the NPSAS:2004 and BPS:96/01 surveys can be found in appendix B. In the index below, the variables are organized by general topic and, within topic, listed in the order in which they appear in the tables. The glossary items are listed in alphabetical order by variable names (displayed in capital letters to the right of the variable label).

Glossary Index

Degree program when first enrolled DGPGMY1
Major field when first enrolled SEMAJ2Y1
Enrollment continuity through 2001 ..... ENSENU2B
Worked when first enrolled J1HOURY1
Primary role as student or employee
through 2001 ..... PRIROLE

DAS Variable

Age as of 12/31/1995 (BPS:96/01) **AGE**

This variable indicates the student's age as of 12/31/1995. It was recoded to have the following categories used in this report:

23 years or younger
24–29 years
30 years or older

Age as of 12/31/2003 (NPSAS:2004) **AGEGROUP**

This variable indicates the student's age as of 12/31/2003 with the following three categories:

23 years or younger
24–29 years
30 years or older

Type of institution enrolled (NPSAS:2004) **AIDSECT**

This variable indicates the type of institution that the student attended in 2003–04. It also includes a separate category for students who attended more than one institution. This variable was recoded to have the following categories used in this report:

Public 4-year doctoral
Private not-for-profit 4-year doctoral
Public 4-year nondoctoral
Private not-for-profit 4-year nondoctoral
Public 2-year
Other (including private not-for-profit less-than-4-year and any type of private for-profit institution)
More than one institution

Reason to enroll: To complete an associate's degree (NPSAS:2004) **ATTENDA**

This dichotomous variable indicates that the student's main reason to enroll in a NPSAS institution is to complete an associate's degree. This question was only asked of students who were enrolled in a less-than-4-year institution or were not in a degree program.

Reason to enroll: To complete a certificate (NPSAS:2004) **ATTENDB**

This dichotomous variable indicates that the student's main reason to enroll at a NPSAS institution is to complete a certificate. This question was only asked of students who were enrolled in a less-than-4-year institution or were not in a degree program.

Reason to enroll: To learn job skills or prepare for a job (NPSAS:2004) **ATTENDC**

This dichotomous variable indicates that the student's main reason to enroll at a NPSAS institution is to learn job skills or prepare for a job. This question was only asked of students who were enrolled in a less-than-4-year institution or were not in a degree program.

DAS Variable

Reason to enroll: For personal interest or enrichment (NPSAS:2004) **ATTENDD**

This dichotomous variable indicates that the student's main reason to enroll at a NPSAS institution is for personal interest or enrichment. This question was only asked of students who were enrolled in a less-than-4-year institution or were not in a degree program.

Reason to enroll: To transfer to a 2-year college (NPSAS:2004) **ATTENDE**

This dichotomous variable indicates that the student's main reason to enroll at a NPSAS institution is to transfer to a 2-year college. This question was only asked of students who were enrolled in a less-than-4-year institution or were not in a degree program.

Reason to enroll: To transfer to a 4-year college (NPSAS:2004) **ATTENDF**

This dichotomous variable indicates that the student's main reason to enroll at a NPSAS institution is to transfer to a 4-year college. This question was only asked of students who were enrolled in a less-than-4-year institution or were not in a degree program.

Reason to enroll: To transfer to other type of college (NPSAS:2004) **ATTENDG**

This dichotomous variable indicates that the student's main reason to enroll at a NPSAS institution is to transfer to another college. This question was only asked of students who were enrolled in a less-than-4-year institution or were not in a degree program.

Enrollment intensity (NPSAS:2004) **ATTNPTRN**

This variable indicates the student's attendance intensity at all institutions attended for all months from July 2003 through June 2004. It was derived based on institutions' reports (or if missing, students' reports) of the number of months enrolled full time and part time between July 2003 and June 2004. This variable has the following categories:

Exclusively full time
Exclusively part time
Mixed

Dependency status (NPSAS:2004) **DEPEND5B**

This variable indicates the student's dependency status including his or her marital status and whether he or she had one or more dependents in 2003–04. Student's dependency status was determined first based on the dependency status reported in the federal financial aid application; if not available, it was determined according to the federal criteria for independence—age 24 or older on December 31, 2003; a veteran of the U.S. Armed Forces; enrolled in a graduate or professional program beyond a bachelor's degree, married, orphan or ward of the court, or have legal dependents other than a spouse. If these were not available, dependency status was obtained from institution records. Both martial status and parenthood refer to the status in the 2003–04 academic year and were derived from the status reported in the federal financial aid application, students' interview, or institution records. This variable has the following categories:

DAS Variable

Dependency status (NPSAS:2004)–continued **DEPEND5B**

Dependent
Independent, single with no dependent
Independent, married with no dependent
Independent, single with one or more dependents
Independent, married with one or more dependents

Degree program when first enrolled (BPS:96/01) **DGPGMY1**

This variable indicates the first type of degree program at the first institution attended in 1995−96. It has the following categories:

Vocational certificate
Associate's (including transfer)
Bachelor's

Socioeconomic status when first enrolled (BPS:96/01) **DISADVAN**

This variable represents an index of socioeconomic diversity with the following three categories based on the status of students on three indicators of socioeconomic disadvantage: total family income as a percentage of the 1994 federal poverty level (the lowest category is family income below 125 percent of the poverty level for family size), the highest educational level completed by either parent (the lowest category is students whose parents had no more than a high school diploma), and the proportion of the student body in the student's high school eligible for the free or reduced-price lunch program in 1994–95 (the lowest category is schools in which 25 percent or more of the student body was eligible for the program). Students not in the lowest category on any of the three factors are labeled "Not disadvantaged;" those in the lowest category on any one of the three factors are categorized as "Moderately disadvantaged;" and those in the lowest category on two or all three of the factors are labeled "Highly disadvantaged."

Not disadvantaged
Moderately disadvantaged
Highly disadvantaged

Enrollment intensity through 2001 (BPS:96/01) **ENIPTT2B**

This variable indicates the pattern of enrollment intensity of the student for all months enrolled from July 1995 to June 2001. It has the following categories:

Exclusively full time
Exclusively part time
Mixed

Number of months enrolled (NPSAS:2004) **ENLEN**

This continuous variable indicates the number of months students were enrolled between July 2003 and June 2004.

DAS Variable

Enrollment continuity through 2001 (BPS:96/01) **ENSENU2B**

This variable indicates the number of enrollment spells through June 2001. An enrollment spell is defined as a period of enrollment (in one or more institutions) of more than 4 months without a break. An enrollment spell may end either with a stopout or leaving without returning. This variable was recoded to have the following categories used in this report:

Continuously enrolled (one spell)
Not continuously enrolled (more than one spell)

Highest education expectations when first enrolled (BPS:96/01) **EPHDEGY1**

This variable indicates the highest level of education that the student expected to complete in 1995–96. It was recoded to have the following categories used in this report:

Don't know
No postsecondary degree or certificate
Certificate
Associate's degree
Bachelor's degree
Graduate or first-professional degree

Gender (NPSAS:2004) **GENDER**

This variable indicates the student's gender.

Male
Female

Highest level of education ever expected (NPSAS:2004) **HIGHLVEX**

This variable indicates the highest level of education that the student has ever expected to complete. It was recoded to have the following categories used in this report:

No postsecondary degree or certificate
Certificate
Associate's degree
Bachelor's degree
Graduate or first professional degree

Type of high school diploma (NPSAS:2004) **HSDEG**

This variable indicates whether the student has graduated from high school and the type of high school diploma received. It was recoded to have the following categories used in this report:

High school diploma
GED or other equivalency
No high school degree or certificate
Other (i.e., homeschooling or attending a foreign high school)

DAS Variable

Type of high school diploma (BPS:96/01) **HSDIPLOM**

This variable indicates whether the student has graduated from high school and the type of high school diploma received. It was recoded to have the following categories used in this report:

High school diploma
GED or other equivalency
No high school degree or certificate

Type of first institution enrolled (BPS:96/01) **ITNPS2**

This variable indicates the type of first institution enrolled with the highest offering in 1995–96. It was recoded to have the following categories used in this report:

Public 4-year doctoral
Private not-for-profit 4-year doctoral
Public 4-year nondoctoral
Private not-for-profit 4-year nondoctoral
Public 2-year
Other

Worked when first enrolled (BPS:96/01) **J1HOURY1**

This variable indicates the number of hours that the student worked per week while enrolled during 1995–96. It was recoded to have the following categories used in this report:

Worked full time
Worked part time
Did not work

Job effect: Helped with career preparation (NPSAS:2004) **JOBEFFA**

This dichotomous variable indicates whether the student having a job while going to school helped him or her with career preparation. This question was only asked of students who considered themselves primarily students working to meet expenses.

Job effect: Helped with coursework (NPSAS:2004) **JOBEFFB**

This dichotomous variable indicates whether the student having a job while going to school helped him or her with coursework. This question was only asked of students who considered themselves primarily students working to meet expenses.

Job effect: Limited class choice (NPSAS:2004) **JOBEFFC**

This dichotomous variable indicates whether the student having a job while going to school limited his or her class choice. This question was only asked of students who considered themselves primarily students working to meet expenses.

DAS Variable

Job effect: Limited class schedule (NPSAS:2004) **JOBEFFD**

This dichotomous variable indicates whether the student having a job while going to school limited his or her class schedule. This question was only asked of students who considered themselves primarily students working to meet expenses.

Job effect: Limited facility access (NPSAS:2004) **JOBEFFE**

This dichotomous variable indicates whether the student having a job while going to school limited his or her access to facilities. This question was only asked of students who considered themselves primarily students working to meet expenses.

Job effect: Limited number of classes taken (NPSAS:2004) **JOBEFFF**

This dichotomous variable indicates whether the student having a job while going to school limited the number of classes he or she could take. This question was only asked of students who considered themselves primarily students working to meet expenses.

Employment status while enrolled, hours worked per week, worked full time (NPSAS:2004) **JOBHOUR2**

This variable indicates the number of hours worked per week while the student was enrolled. It also provides information about student's employment status while enrolled (0 hour as "did not work while enrolled" and 1 hour or more as "worked while enrolled") and whether the student worked full time (35 hours or more as full-time employment).

Main reason for working for primarily students (NPSAS:2004) **JOBMAIN**

This variable indicates the main reason for working while enrolled for those who considered themselves primarily students working to meet expenses. It has the following categories:

Earn spending money
Pay tuition, fees, or living expenses
Gain job experience
Other
No job

Primary role as a student or an employee (NPSAS:2004) **JOBROLE2**

This variable indicates the primary role perceived by the student while enrolled. It has the following categories:

A student working to meet expenses
An employee enrolled in school
Did not work

DAS Variable

Major field of study (NPSAS:2004) **MAJORS12**

This variable indicates the student's undergraduate major field of study in 2003–04 with the following categories:

Undeclared or not in a degree program

Humanities—English, liberal arts, philosophy, theology, art, music, speech/drama, history/fine arts, area studies, African-American studies, ethnic studies, foreign languages, liberal studies, women's studies

Social/behavioral sciences—Psychology, economics, political science, American civilization, clinical pastoral care, social work, anthropology/archaeology, history, sociology

Life sciences—Natural resources, forestry, biological science including zoology, biophysics, geography, interdisciplinary studies, including biopsychology, environmental studies

Physical sciences—Physical sciences including chemistry, physics

Mathematics—Mathematics, statistics

Computer/information science—Computer/information science, computer programming

Engineering—Electrical, chemical, mechanical, civil, or other engineering; engineering technology; electronics

Education—Early childhood, elementary, secondary, special, or physical education; leisure studies; library/archival sciences

Business management—Accounting, finance, secretarial, data processing, business/management, public administration, marketing/distribution, business support, international relations

Health—Nursing, nurse assisting, community/mental health, medicine, physical education/recreation, audiology, clinical health, dentistry, veterinary medicine, health/hospital, public health, dietetics, other/general health

Vocational/technical—Science technologies, protective services, construction trades, mechanic and repair technologies, precision production, and transportation and material moving

Other professional or technical—Agriculture, agricultural science, architecture, professional city planning, journalism, communications, communications technology, cosmetology, military science, dental/medical technology, home economics, vocational home economics including child care, law, basic/personal skills

Parent's highest education level (NPSAS:2004) **PAREDUC**

This variable indicates the highest level of education achieved by either parent of the student. It was recoded to have the following categories used in this report:

High school or less
Some college
Bachelor's degree
Graduate/professional degree

DAS Variable

Parents helped pay housing (NPSAS:2004) **PARHELPA**

This dichotomous variable indicates whether parents/guardians helped the student pay housing such as rent or dorm cost and utilities.

Parents helped pay education expenses other than tuition and fees (NPSAS:2004) **PARHELPB**

This dichotomous variable indicates whether parents/guardians helped the student pay education expenses other than tuition such as books and supplies.

Parents helped pay other living expenses (NPSAS:2004) **PARHELPC**

This dichotomous variable indicates whether parents/guardians helped the student pay living expenses other than housing such as food and transportation.

Parents helped pay tuition and fees (NPSAS:2004) **PARHELPD**

This dichotomous variable indicates whether parents/guardians helped the student pay tuition and fees.

Family income of dependent students (NPSAS:2004) **PCTDEP**

This variable indicates the income percentile distribution among parents of dependent students in 2002. It was recoded to have the following categories used in this report:

Lowest quarter
Middle two quarters
Highest quarter

Income of independent students (NPSAS:2004) **PCTINDEP**

This variable indicates the income percentile distribution among independent students in 2002. It was recoded to have the following categories used in this report:

Lowest quarter
Middle two quarters
Highest quarter

Highest degree attainment and persistence status as of 2001 (BPS:96/01) **PRENRL2B**

This variable indicates the highest degree that the student had attained by 2001 and the level of the institution in which he or she was still enrolled if no degree had been attained. It has the following categories:

Attained bachelor's degree
Attained associate's degree
Attained certificate
Never attained, enrolled at 4-year
Never attained, enrolled at less-than-4-year
Never attained, not enrolled

DAS Variable

Last academic year enrolled without a degree (BPS:96/01) **PRENYR2B**

This variable indicates whether the student had attained a degree by 2001; if not, whether the student was still enrolled; or if no degree attained or not enrolled, the last academic year in which the student had left without return. It has the following categories:

Never attained, left without return in 1995–96
Never attained, left without return in 1996–97
Never attained, left without return in 1997–98
Never attained, left without return in 1998–99
Never attained, left without return in 1999–00
Never attained, left without return in 2000–01
Never attained, still enrolled
Attained by 2001

Primary role as student or employee through 2001 (BPS:96/01) **PRIROLE**

This variable was derived to describe the student's perception of his or her primary role as a student working to meet expenses or an employee deciding to enroll in school through 2001. It has the following categories:

Worked while enrolled but always considering primarily a student
Worked while enrolled and always considering primarily an employee
Worked while enrolled, considering primarily a student first and an employee later
Worked while enrolled, considering primarily an employee first and a student later
Did not work while enrolled

Part-time students who looked like full-time students (BPS:96/01) **PTSTSUB**

This variable indicates whether a student who enrolled part time for some or all of their enrollment from 1995 to 2001 had some characteristics typically found among full-time students—that is, students who were traditional college age (age 23 or younger), financially dependent on their parents, graduated from high school with a regular diploma, and received financial help from their parents to pay for postsecondary education. It has the following categories:

Exclusively full-time student
Exclusively part-time student who looked like full-time student
Other exclusively part-time student
Mixed enrollment student who looked like full-time student
Other mixed enrollment student

Part-time students who looked like full-time students (NPSAS:2004) **PTSTSUB**

This variable indicates whether a student who enrolled part time for some or all of their enrollment in 2003–04 had some characteristics typically found among full-time students—that is, students who were traditional college age (age 23 or younger), financially dependent on their parents, graduated from high school with a regular diploma, and received financial help from their parents to pay for postsecondary education. It has the following categories:

Not part-time student
Part-time student who looked like full-time student
Other part-time student

DAS Variable

Race/ethnicity (NPSAS:2004) **RACE**

This variable indicates race/ethnicity. It was recoded to have the following categories used in this report:

White
Black
Hispanic
Asian/Pacific Islander
American Indian
Other

Remedial coursetaking after high school (NPSAS:2004) **REMEVER**

This dichotomous variable indicates whether the student has taken remedial or developmental courses to improve basic skills since he or she completed high school.

Remedial coursetaking when first enrolled (BPS:96/01) **RMANYY1**

This dichotomous variable indicates whether the student took one or more remedial instruction or developmental courses in reading, writing, mathematics, study skills, or English language skills in 1995–96.

Dependency status when first enrolled (BPS:96/01) **SBDEP3Y1**

This variable indicates the student's dependency status including his or her marital status and whether he or she had one or more dependents in 1995–96. It has the following categories:

Dependent
Independent, no dependent, unmarried
Independent, no dependent, married
Independent with dependents

Gender (BPS:96/01) **SBGENDER**

This variable indicates the student's gender.

Male
Female

Race/ethnicity (BPS:96/01) **SBRACECI**

This variable indicates race/ethnicity. It was recoded to have the following categories used in this report:

White
Black
Hispanic
Asian/Pacific Islander
American Indian
Other

DAS Variable

Major field when first enrolled (BPS:96/01) **SEMAJ2Y1**

This variable indicates the student's major field of study during the first term enrolled 1995–96 with the following categories:

Humanities—English, liberal arts, philosophy, theology, art, music, speech/drama, history/fine arts, area studies, African-American studies, ethnic studies, foreign languages, liberal studies, women's studies

Social/behavioral sciences—Psychology, economics, political science, American civilization, clinical pastoral care, social work, anthropology/archaeology, history, sociology

Life sciences—Natural resources, forestry, biological science including zoology, biophysics, geography, interdisciplinary studies, including biopsychology, environmental studies

Physical sciences—Physical sciences including chemistry, physics

Mathematics—Mathematics, statistics

Computer/information science—Computer/information science, computer programming

Engineering—Electrical, chemical, mechanical, civil, or other engineering; engineering technology; electronics

Education—Early childhood, elementary, secondary, special, or physical education; leisure studies; library/archival sciences

Business management—Accounting, finance, secretarial, data processing, business/management, public administration, marketing/distribution, business support, international relations

Health—Nursing, nurse assisting, community/mental health, medicine, physical education/recreation, audiology, clinical health, dentistry, veterinary medicine, health/hospital, public health, dietetics, other/general health

Vocational/technical— Science technologies, protective services, construction trades, mechanic and repair technologies, precision production, and transportation and material moving

Other professional or technical—Agriculture, agricultural science, architecture, professional city planning, journalism, communications, communications technology, cosmetology, military science, dental/medical technology, home economics, vocational home economics including child care, law, basic/personal skills

College entrance exam score (BPS:96/01) **TESATDER**

This is the student's SAT combined score, derived by either the sum of SAT verbal and mathematics scores or the ACT composite score converted to an estimated SAT combined score. It was recoded to have the following categories used in this report:

Lowest quarter
Middle two quarters
Highest quarter
Did not take the exam or missing

DAS Variable

Undergraduate degree program (NPSAS:2004) **UGDEG**

This variable indicates the student's undergraduate degree program in 2003–04. It has the following categories:

Certificate
Associate's degree
Bachelor's degree
Not in a degree program or others

Appendix B—Technical Notes and Methodology

The 2003–04 National Postsecondary Student Aid Study

The 2003–04 National Postsecondary Student Aid Study (NPSAS:2004) is the latest in a series of comprehensive studies of all students enrolled in postsecondary education in the United States and Puerto Rico. The study is conducted by the U.S. Department of Education's National Center for Education Statistics (NCES) to determine how students and their families pay for postsecondary education. It also provides data for comprehensive descriptions of the undergraduate and graduate/first-professional student populations in terms of their demographic characteristics, academic programs, types of institutions attended, attendance patterns, employment, and participation in civic and volunteer activities. The first NPSAS was conducted in 1986–87 (NPSAS:87), and since then, five additional studies have been conducted (NPSAS:90, NPSAS:93, NPSAS:96, NPSAS:2000, and NPSAS:2004).[1]

The NPSAS:04 target population consists of all eligible students enrolled at any time between July 1, 2003 and June 30, 2004 in postsecondary institutions in the United States or Puerto Rico that had signed Title IV participation agreements with the U.S. Department of Education making them eligible for federal student aid programs (Title IV institutions). To be eligible for NPSAS, students had to be enrolled in either an academic program with at least one course for credit that could be applied toward fulfilling the requirements for an academic degree or enrolled in an occupational or vocational program that requires at least 3 months or 300 clock hours of instruction to receive a degree, certificate, or other formal award. Eligible students could not be concurrently enrolled in high school or in other high school completion program.

In NPSAS:04, a two-stage sampling design was used: the first stage involved selecting eligible institutions, and the second stage involved selecting eligible respondents within each eligible institution. The institutional sampling frame for NPSAS:2004 was constructed from the 2000–01 Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics (IC) file. The institutions in the sampling frame were partitioned into 58 institutional strata based on institutional control, highest level of offering, and Carnegie classification. Initially, a total of 1,670 institutions were selected for NPSAS:2004, and all but 40 of these institutions were found to be NPSAS eligible institutions and 1,360 of these eligible institutions provided student

[1] More information about NPSAS is available at http://nces.ed.gov/surveys/npsas.

enrollment lists for use as the second stage (i.e., student) sampling frame. Sampling frames for selecting students consisted of enrollment lists or data files provided by the institutions for those students enrolled during the NPSAS:2004 year. The sampling procedures resulted in the selection of 109,200 students (including undergraduate, graduate, and first-professional students), of which a total of 101,000 students were found to be eligible. Upon the completion of data collection, 90 percent of the 101,000 sample members were determined to have sufficient key data to be included in NPSAS:2004. This report is based on a nationally representative sample of all undergraduates in postsecondary education institutions. The information about undergraduate students in NPSAS:2004 was obtained from a sample of about 80,000 undergraduates who were enrolled at any time between July 1, 2003 and June 30, 2004, in about 1,300 postsecondary institutions that offered undergraduate programs of study. Information for NPSAS:04 was obtained from several sources, including (1) student records from institutional financial aid and registrar records at the institutions currently attended (these data were entered at the institution by institutional personnel or field data collectors in 2004 using a computer-assisted data entry program or directly downloaded from a data file; (2) student interview collected directly from sampled students via web-based self-administered or interviewer-administered questionnaires; (3) Central Processing System (CPS) which is the U.S. Department of Education database of federal financial aid applications for the 2003–04 academic year; (4) National Student Loan Data System (NSLDS) which is the U.S. Department of Education database of federal Title IV loans and Federal Pell Grant; and (5) Integrated Postsecondary Education Data System (IPEDS) which is the NCES database of descriptive information about individual postsecondary institutions. The weighted institutional response rate was 80 percent, and the weighted student response rate was 91 percent, resulting in an overall response rate of 72 percent. The NPSAS:2004 sample of undergraduates represents about 19 million undergraduates who were enrolled at any time between July 1, 2003 and June 30, 2004 in postsecondary institutions in the United States or Title IV institutions in Puerto Rico.

The 1996/01 Beginning Postsecondary Students Longitudinal Study

The Beginning Postsecondary Students (BPS) Longitudinal Study was first conducted in the 1989–90 academic year. The 1996/01 BPS (BPS:96/01) was the second in the series of studies focusing on first-time beginning students in postsecondary education and is derived from a sample of students who participated in the 1995–96 National Postsecondary Student Aid Study (NPSAS:96). The BPS:96/01 began with a sample of approximately 12,400 students identified in NPSAS:96 who were beginning postsecondary education for the first time at some point in the 1995–96 academic year. Beginning students had to be enrolled in either an academic program with at least one course for credit that could be applied toward fulfilling the requirements for an

academic degree or enrolled in an occupational or vocational program that requires at least 3 months or 300 clock hours of instruction to receive a degree, certificate, or other formal award, and could not be concurrently enrolled in high school or other high school completion program. The first follow-up of the BPS cohort (BPS:96/98) was conducted in 1998, approximately 3 years after these students first enrolled. Approximately 10,300 of the students who first began in 1995–96 were located and interviewed in the 1998 follow-up, for an overall weighted response rate of 79.8 percent. The second follow-up of the BPS cohort (BPS:96/01) was conducted between February and September in 2001, approximately 6 years after college entry. All respondents to the first follow-up as well as a sample of nonrespondents in 1998 were eligible to be interviewed. Over 9,100 students were located and interviewed, all of whom were included in this report. The overall weighted student response rate was 76 percent overall, a product of the institutional response rate (91 percent) and student response rate (84 percent).[2] Information about beginning students in BPS:96/01 were obtained from student interviews conduced in base year and follow-ups and various sources used for NPSAS data collection (see above). Student interviews were conducted using computer-assisted telephone interviewing (CATI).

Weighting

All estimates in this report are weighted to compensate for unequal probability of selection into the survey sample and to adjust for nonresponse. The weight variable used for analysis of the NPSAS:2004 data is WTA00, the weight applied to all undergraduates in NPSAS:2004. The weight variable used for analysis of the BPS:96/2001 data is WTB00, the longitudinal weight for students who responded in both 1996 and 2001 surveys.

Accuracy of Estimates

The statistics in this report are estimates derived from a sample. Two broad categories of error occur in such estimates: sampling and nonsampling errors. Sampling errors occur because observations are based only on samples of students, not entire populations. Nonsampling errors occur not only in sample surveys but also in complete censuses of entire populations. Nonsampling errors can be attributed to a number of sources: inability to obtain complete information about all students in all institutions in the sample (some students or institutions refused to participate, or students participated but answered only certain items); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct information; mistakes in recording or coding data; and other errors of collecting, processing, sampling, and imputing missing data.

[2] For more information on BPS:96/01, consult Wine et al. (2002).

Item Response Bias

From the selected sample of this report, weighted item response rates were calculated for all variables used in this report by dividing the weighted number of valid responses by the weighted population for which the item was applicable. All variables used in this report and defined in appendix A had a high response rate (i.e., above 85 percent). Thus, it is unlikely that estimates and reported differences are biased because of missing data.

Data Analysis System

The estimates presented in this report were produced using the NPSAS:2004 and BPS:96/01 Data Analysis System (DAS). The DAS software makes it possible for users to specify and generate their own tables. The DAS also contains a detailed description of how each variable was created and includes question wording for items coming directly from an interview. With the DAS, users can replicate or expand upon the tables presented in this report. In addition to the table estimates, the DAS calculates the proper standard errors[3] and weighted sample sizes for these estimates. For example, table B-1 contains standard errors that correspond to estimates in table 1 in the report.

If the number of valid cases is too small to produce a reliable estimate (fewer than 30 cases), the DAS prints the message "low-N" instead of the estimate. All standard errors for estimates presented in this report can be viewed at http://nces.ed.gov/das. In addition to tables, the DAS can also produce a correlation matrix of selected variables to be used for linear regression models (or referred to "multivariate commonality analysis" in the report; see more description below). Included in the output with the correlation matrix are the design effects (DEFTs) for each variable in the matrix. Because statistical procedures generally compute regression coefficients based on simple random sample assumptions, the standard errors must be adjusted with the design effects to take into account the stratified sampling method used in the NPSAS and BPS surveys.

The DAS can be accessed electronically at http://nces.ed.gov/das. For more information about the Data Analysis System, contact:

[3] Both NPSAS and BPS samples are not simple random samples, and therefore, simple random sample techniques for estimating sampling error cannot be applied to these data. The DAS takes into account the complexity of the sampling procedures and calculates standard errors appropriate for such samples. The method for computing sampling errors used by the DAS involves approximating the estimator by balanced repeated replication of the sampled population. The procedure is typically referred to as the "balanced repeated replication technique" (BRR).

Table B-1. Standard errors for table 1: Percentage distribution of undergraduates by enrollment intensity and selected demographic characteristics: 2003–04

Selected demographic characteristics	Total	Enrollment intensity: Exclusively full time	Enrollment intensity: Mixed	Enrollment intensity: Exclusively part time
Total	†	†	†	†
Age as of 12/31/2003				
Under 24	0.52	0.65	0.82	0.50
24–29	0.28	0.29	0.49	0.48
30 or above	0.42	0.50	0.57	0.67
Gender				
Male	0.39	0.42	0.69	0.58
Female	0.39	0.42	0.69	0.58
Race/ethnicity				
White	0.76	0.74	1.06	1.07
Black	0.62	0.71	0.77	0.73
Hispanic	0.43	0.42	0.61	0.68
Asian/Pacific Islander	0.22	0.21	0.55	0.40
American Indian	0.11	0.16	0.14	0.13
Other	0.11	0.13	0.20	0.20
Dependency and marital status				
Dependent	0.56	0.72	0.90	0.53
Independent	0.56	0.72	0.90	0.53
Single with no dependent	0.26	0.29	0.41	0.45
Married with no dependent	0.18	0.18	0.36	0.35
Single with one or more dependents	0.28	0.30	0.50	0.48
Married with one or more dependents	0.30	0.32	0.48	0.53
Parents' highest education level				
High school or less	0.38	0.40	0.79	0.67
Some college	0.25	0.27	0.55	0.49
Bachelor's degree	0.24	0.28	0.54	0.46
Graduate/professional degree	0.22	0.27	0.52	0.41
Family income of dependent students				
Lowest quarter	0.27	0.29	0.66	0.90
Middle two quarters	0.42	0.45	0.92	1.12
Highest quarter	0.39	0.37	0.67	1.06
Income of independent students				
Lowest quarter	0.38	0.76	0.88	0.47
Middle two quarters	0.46	0.76	1.15	0.58
Highest quarter	0.52	0.66	1.03	0.66

† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

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Statistical Procedures

The following describes several statistical procedures used in this report.

Differences Between Means

The descriptive comparisons in this report were tested using Student's *t* statistic. Differences between estimates are tested against the probability of a Type I error[4] or significance level. The significance of each group difference was determined by calculating the Student's *t* values for the differences between each pair of means or proportions and comparing these with published tables of significance levels for two-tailed hypothesis testing ($p < .05$).

Student's *t* values may be computed to test the difference between estimates with the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2}} \quad (1)$$

where E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors. This formula is valid only for independent estimates. When estimates are not independent, a covariance term must be added to the formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2 - 2(r)se_1\ se_2}} \quad (2)$$

where *r* is the correlation between the two estimates.[5] This formula is used when comparing two percentages from a distribution that adds to 100. If the comparison is between the mean of a subgroup and the mean of the total group, the following formula is used:

[4] A Type I error occurs when one concludes that a difference observed in a sample reflects a true difference in the population from which the sample was drawn, when no such difference is present.
[5] U.S. Department of Education, National Center for Education Statistics, *A Note from the Chief Statistician, no. 2*, 1993.

$$t = \frac{E_{sub} - E_{tot}}{\sqrt{se_{sub}^2 + se_{tot}^2 - 2p\, se_{sub}^2}} \quad (3)$$

where p is the proportion of the total group contained in the subgroup.[6] The estimates, standard errors, and correlations can all be obtained from the DAS.

There are some hazards in using statistical tests for each comparison. First, comparisons based on large t statistics may appear to merit special attention. This can be misleading since the magnitude of the t statistic is related not only to the observed differences in means or percentages, but also to the number of respondents in the specific categories used for comparison. Hence, a small difference compared across a large number of respondents would produce a large t statistic.

A second hazard in using statistical tests is the possibility of a "false positive" or Type I error. In the case of a t statistic, this false positive would result when a difference between groups measured with a particular sample showed a statistically significant difference when there is actually no difference between these groups in the full population. The significance level, or alpha, of .05 selected for findings discussed as significant in this report indicates that a difference of the magnitude reported would be produced by chance no more than one time out of 20 with samples of the size used in this study when there was no actual difference in the group means in the full population.

Multivariate Commonality Analysis

There are many ways for members of the public and other researchers to make use of NCES results. The most popular way is to read the written reports. Other ways include obtaining and analyzing public use and restricted use data files, which allow researchers to carry out and publish their own secondary analyses of NCES data.

It is very important when reading NCES reports to remember that they are descriptive in nature. That is, they are limited to describing some aspect of the condition of education. These results are usefully viewed as suggesting various ideas to be examined further in light of other data, including state and local data, and in the context of the extensive research literature elaborating on the many factors predicting and contributing to educational achievement or to other outcome variables of interest.

[6] Ibid.

However, some readers are tempted to make unwarranted causal inferences from simple cross tabulations. It is never the case that a simple cross tabulation of any variable with a measure of educational achievement is conclusive proof that differences in that variable are a cause of differential educational achievement or that differences in that variable explain any other outcome variable. The old adage that "correlation is not causation" is a wise precaution to keep in mind when considering the results of NCES reports. Experienced researchers are aware of the design limitations of many NCES data collections. They routinely formulate multiple hypotheses that take these limitations into account, and readers of this volume are encouraged to do likewise. NCES has a responsibility to try to discourage misleading inferences from the data presented and to educate the public on the genuine difficulty of making valid causal inferences in a field as complex as education. Our reports are carefully worded to achieve this end.

This focus on description, eschewing causal analysis, extends to multivariate analyses as well as bivariate ones. Some NCES reports go beyond presenting simple cross tabulations and present results from multiple regression equations that include many different independent ("predictor") variables. This can be useful to readers, especially those without the time or training to access the data themselves. Because many of the independent variables included in descriptive reports are related to each other and to the outcome they are predicting, a multivariate approach can help users to understand their interrelation. For example, students' enrollment intensity and employment while enrolled are associated with each other and are both predictors of degree attainment. What happens to the relationship between students' enrollment intensity and degree attainment when students' employment differences are accounted for? Such a question cannot be answered using bivariate techniques alone.

One way to answer the question is to create three variable tabulations, a method sometimes used in NCES reports. When the number of independent variables increases to four or more, however, the number of cases in individual cells of such a table often becomes too small to find significant differences simply because there are too few cases to achieve statistical significance. To make economical use of the many available independent variables in the same data display, other statistical methods must be used that can take multiple independent variables into account simultaneously.

Multiple linear regression is often used for this purpose: to adjust for the common variation among a list of independent variables.[7] This approach is sometimes referred to as "commonality analysis,"[8] because it identifies relationships that remain after adjustment for "common" variation. This method is used simply to confirm statistically significant associations observed in

[7] For more information about least squares regression, see Lewis-Beck (1980) and Berry and Feldman (1987).
[8] For more information about commonality analysis, see Pedhazur (1997).

the bivariate analysis, while taking into account the interrelationship of the independent variables.

Thus, this multiple regression approach is descriptive. Significant coefficients reported in the regression tables mean that the independent variables have a relationship with the outcome variable that is unique, or distinct from its relationship with other independent variables in the model.

Multivariate description of this sort is distinct from both a modeling approach in which an analyst attempts to identify the smallest relevant set of causal or explanatory independent variables associated with the dependent variable or variables and an approach using one of the many varieties of structural equation modeling. In contrast, a multivariate descriptive or commonality approach provides a richer understanding of the data without needing to make any kind of causal assumptions, which is why descriptive multivariate commonality analysis is often used in NCES statistical reports.

When should commonality analysis be employed? It should be used in statistical analysis reports when independent variables are correlated with both the outcome variable and with each other. This will allow the analyst to determine how much of the effect of one independent variable is due to the influence of other independent variables, because in a multiple regression procedure these effects are adjusted for. For example, because the strength of the statistical relationship between students' enrollment intensity and degree attainment may be affected by employment, computing a multiple regression equation that contains both variables allows the analyst to determine how much, if any difference in degree attainment between full-time and part-time students is due to their differences in employment.

As discussed in the Data Analysis System section above, all analyses included in PEDAR reports must be based on the DAS, which is available to the public online (http://nces.ed.gov/das). Exclusively using the DAS in this way provides readers direct access to the findings and methods used in the report so that they may replicate or expand on the estimates presented. However, the DAS does not allow users access to the raw data, which limits the range of covariation procedures that can be used. Specifically, the DAS produces correlation matrices, which can be used as input in standard statistical packages to produce least squares regression models. This means that logit or probit procedures, more appropriate for dichotomous dependent variables, cannot be used.[9] However, empirical studies have shown that when the mean value of a dichotomous dependent variable falls between 0.25 and 0.75, regression and log-linear models

[9] See Aldrich and Nelson (1984). Analysts who wish to estimate other types of models can apply for a restricted data license from NCES.

are likely to produce similar results.[10] Regressions were conducted for three dependent variables in this report: completing any degree, completing a bachelor's degree, and persisting overall. For completing any degree by 2001, the overall rate is 51 percent (64 percent for exclusively full-time students, 45 percent for part-time students who looked like full-time students, and 34 percent for other part-times students) (table 12). For completing a bachelor's degree, the overall rate is 29 percent (44 percent for exclusively full-time students, 25 percent for part-time students who looked like full-time students, and 7 percent for other part-time students), and for overall persistence, the overall rate is 65 percent (72 percent for exclusively full-time students, 69 percent for part-time students who looked like full-time students, and 52 percent for other part-time students). With one exception, all values are within acceptable limits described above. The exception is for the bachelor's degree completion rate for other part-time students (7 percent); thus, the regression estimates on this dependent variable for this group was omitted from table 15.

The independent variables analyzed in this study and subsequently included in the multivariate model were chosen based largely on earlier empirical studies (cited in the text), which showed significant associations with the key analytic variable, graduate enrollment, persistence, and attainment. Before conducting the study, a detailed analysis plan was reviewed by a Technical Review Panel (TRP) of experts in the field of higher education research, and additional independent variables requested by the TRP were considered for inclusion. The analysis plan listed all independent variables to be included in the study. The TRP also reviewed the preliminary results, as well as the first draft of this report. The analysis plan and subsequent report were modified based on TRP comments.

Missing Data and Adjusting for Complex Sample Design

The DAS computes the correlation matrix using pairwise missing values. In regression analysis, there are several common approaches to the problem of missing data. The two simplest approaches are pairwise deletion of missing data and listwise deletion of missing data. In pairwise deletion, each correlation is calculated using all of the cases for the two relevant variables. For example, suppose you have a regression analysis that uses variables X1, X2, and X3. The regression is based on the correlation matrix between X1, X2, and X3. In pairwise deletion, the correlation between X1 and X2 is based on the nonmissing cases for X1 and X2. Cases missing on either X1 or X2 would be excluded from the calculation of the correlation. In listwise deletion, the correlation between X1 and X2 would be based on the nonmissing values

[10] See, for example, Goodman (1976) and Knoke (1975).

for X1, X2, and X3. That is, all of the cases with missing data on any of the three variables would be excluded from the analysis.

The correlation matrix produced by the DAS can be used by most statistical software packages as the input data for least squares regression. The DAS provides either the SPSS or SAS code necessary to run least squares regression models. The DAS also provides additional information to incorporate the complex sample design into the statistical significance tests of the parameter estimates. Most statistical software packages assume simple random sampling when computing standard errors of parameter estimates. Because of the complex sampling design used for the survey, this assumption is incorrect. A better approximation of the standard errors can be made by multiplying each standard error by the design effect associated with the dependent variable (DEFT),[11] where the DEFT is the ratio of the true standard error to the standard error computed under the assumption of simple random sampling. The DEFT is calculated by the DAS and displayed with the correlation matrix output.

Interpreting the Results

The least squares regression coefficients displayed in the regression tables B-2 through B-5 are expressed as percentage points. Significant coefficients represent the observed differences that remain between the analysis group (e.g., students whose parents had a high school education) and the comparison group (e.g., students whose parents held graduate degrees) after controlling for the relationships of all selected independent variables. For example, in table 14, the least squares coefficient for exclusively part-time students who looked like full-time students attaining a degree or certificate is –35.6. This means that compared with full-time students, the percentage of exclusively part-time students who looked like full-time students who attained a degree was roughly 36 percentage points lower, after controlling for the relationships among all other independent variables.

[11] The adjustment procedure and its limitations are described in Skinner, Holt, and Smith (1989).

Table B-2. Standard errors for table 14: Least squared coefficients for percentage of 1995–96 beginning postsecondary students who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics

Student characteristics	Earned a degree or certificate		Earned a bachelor's degree		Persistence[1]	
	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]
Total	77.8	4.06	78.8	3.96	80.0	3.55
Enrollment intensity through 2001						
Exclusively part-time student who looked like full-time students	-35.6 *	5.86	-14.7 *	5.74	-28.5 *	5.19
Other exclusively part-time student	-27.2 *	3.46	-10.4 *	3.37	-22.6 *	3.00
Mixed enrollment student who looked like full-time students	-7.3	2.10	-11.8 *	1.98	2.1	1.91
Other mixed enrollment student	-4.1	2.40	-5.9 *	2.38	4.1	2.18
Exclusively full-time student	†	†	†	†	†	†
Gender						
Female	2.4	1.65	2.3	1.58	1.9	1.50
Male	†	†	†	†	†	†
Race/ethnicity[4]						
Black	-9.0 *	2.55	-4.2	2.38	-9.4 *	2.18
Hispanic	-5.6 *	2.40	-5.2 *	2.38	-3.8	2.18
Asian/Pacific Islander	1.9	3.76	4.2	3.56	2.0	3.28
Other	0.9	6.01	9.1	5.74	0.0	5.32
White	†	†	†	†	†	†
Socioeconomic status index in 1995–96						
Moderately disadvantaged	-1.8	1.80	-3.3	1.78	-3.9 *	1.64
Highly disadvantaged	-3.5	2.40	-6.2 *	2.38	-3.4	2.18
Not disadvantaged	†	†	†	†	†	†
Dependency status in 1995–96						
Independent without dependents	-6.2 *	3.15	-5.8	2.97	-0.8	2.73
Independent with dependents	-0.6	2.70	-3.6	2.57	2.2	2.46
Dependent	†	†	†	†	†	†
Highest level of education expected in 1995–96						
No postsecondary degree or certificate	-14.9 *	5.41	-5.7 *	5.15	-17.1 *	4.78
Certificate	0.9	4.06	-6.4 *	3.96	-1.1	3.55
Associate's degree	0.9	3.46	-4.7	3.37	-4.6	3.14
Graduate degree	7.0 *	1.95	7.8 *	1.98	8.1 *	1.77
Bachelor's degree	†	†	†	†	†	†

See notes at end of table.

Table B-2. Standard errors for table 14: Least squared coefficients for percentage of 1995–96 beginning postsecondary students who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics—Continued

Student characteristics	Earned a degree or certificate		Earned a bachelor's degree		Persistence[1]	
	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]
Type of high school diploma						
GED or equivalency	-2.3	3.15	-4.2	3.17	-3.6	2.87
No high school degree or certificate	-8.8	4.66	-5.6	4.55	-11.8 *	4.10
Regular high school diploma	†	†	†	†	†	†
Remedial coursetaking after high school						
Yes	-12.8 *	2.10	-6.2 *	1.98	-8.7 *	1.77
No	†	†	†	†	†	†
SAT/ACT composite score						
Did not take/missing	-10.9 *	3.31	-22.9 *	3.17	-7.5 *	3.00
Lowest quarter	-14.7 *	3.61	-21.6 *	3.56	-8.4 *	3.28
Middle two quarters	-5.8 *	2.70	-11.0 *	2.57	-3.3 *	2.46
Highest quarter	†	†	†	†	†	†
Type of first institution						
Private not-for-profit doctoral	9.7 *	3.91	9.9 *	3.76	5.7	3.41
Public 4-year nondoctoral	-4.3	3.15	-6.8 *	2.97	-3.3	2.73
Private not-for-profit 4-year nondoctoral	6.2 *	3.15	6.0 *	2.97	1.1	2.73
Public 2-year	-0.9	4.66	-2.8	4.55	-3.1	4.10
Other	7.9	5.11	-12.0 *	4.95	3.7	4.51
Public 4-year doctoral	†	†	†	†	†	†
Degree program in 1995–96						
Certificate	5.9	4.81	-20.7 *	4.55	-1.1	4.23
Associate's	-5.4	4.36	-20.6 *	4.16	-8.0 *	3.82
Bachelor's	†	†	†	†	†	†
Major field of study in 1995–96						
Humanities	-0.4	3.15	-0.9	3.17	-1.6	2.87
Vocational/technical	-7.6	4.96	-5.9	4.75	-6.7	4.37
Other technical/professional	1.1	3.00	-2.9	2.97	-0.1	2.59
Undeclared	-2.9	2.70	-4.0	2.57	-0.4	2.32
Social/behavioral sciences	-2.7	4.06	0.3	3.96	-3.7	3.55
Life sciences	-1.2	4.36	0.0	4.36	4.9	3.96
Physical sciences	-10.0	10.07	-5.0	9.70	-5.5	8.87
Mathematics	-5.1	11.72	3.0	11.48	-9.5	10.38
Computer/information science	-3.8	5.71	-5.0	5.54	-3.8	5.05
Engineering	3.5	3.76	-2.8	3.56	5.6	3.28
Education	2.9	3.91	5.4	3.76	0.9	3.55
Health	1.7	3.31	-4.3	3.17	0.6	2.87
Business/management	†	†	†	†	†	†

See notes at end of table.

Table B-2. Standard errors for table 14: Least squared coefficients for percentage of 1995–96 beginning postsecondary students who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics—Continued

Student characteristics	Earned a degree or certificate		Earned a bachelor's degree		Persistence[1]	
	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]
Enrollment continuity through 2001						
Not continuously enrolled	-16.1 *	1.80	-19.7 *	1.78	7.6 *	1.64
Continuously enrolled	†	†	†	†	†	†
Employment status while enrolled in 1995–96						
Worked part time	-3.0	1.80	-1.8	1.78	0.9	1.64
Worked full time	-7.8 *	2.55	-4.6 *	2.38	-4.6 *	2.18
Did not work	†	†	†	†	†	†
Perceived primary role through 2001						
Always considering themselves primarily as an employee	-6.9 *	2.70	-5.7 *	2.57	-10.9 *	2.32
Shifting from primarily a student to primarily an employee	-5.2 *	2.70	-8.9 *	2.77	-6.5 *	2.46
Shifting from primarily an employee to primarily a student	3.9	3.46	-1.6	3.37	1.8	3.00
Always considering themselves primarily as a student	†	†	†	†	†	†

† Not applicable for the reference group.

* $p < .05$.

[1] Persistence is measured by the sum of the percentage who had attained a degree or certificate by 2001 and the percentage who were still enrolled by 2001.

[2] Least squares coefficients, multiplied by 100 to reflect percentage (see appendix B).

[3] Standard error of least squares coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).

[4] Black includes African American, Hispanic includes Latino, and Asian/Pacific Islander includes Native Hawaiian. The "other" category includes American Indian/Alaska Native, those who identified more than one race, and those who identified themselves with another race not shown in the table. Race categories exclude Hispanic origin unless specified.

NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. The italicized group in each category is the reference group being compared.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

Table B-3. Standard errors for the first three columns in table 15: Among 1995–96 beginning postsecondary students who were exclusively full-time students, least squared coefficients for percentage who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics

	Earned a degree or certificate		Earned a bachelor's degree		Persistence[1]	
Student characteristics	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]
Total	85.4	3.45	79.6	4.92	89.7	3.75
Gender						
Female	4.0 *	1.51	3.4	2.08	3.2 *	1.63
Male	†	†	†	†	†	†
Race/ethnicity[4]						
Black	-12.6 *	2.37	-5.0	3.41	-12.0 *	2.63
Hispanic	-6.3 *	2.26	-6.1	3.22	-4.8	2.50
Asian/Pacific Islander	3.0	3.34	6.5	4.92	1.2	3.75
Other	-8.7	5.93	-1.7	8.51	-1.9	6.51
White	†	†	†	†	†	†
Socioeconomic status index in 1995–96						
Moderately disadvantaged	-1.5	1.62	-4.6	2.46	-3.1	1.88
Highly disadvantaged	-2.5	2.16	-5.1	3.22	-1.1	2.38
Not disadvantaged	†	†	†	†	†	†
Dependency status in 1995–96						
Independent without dependents	-4.0	3.13	-6.0	4.35	-0.4	3.38
Independent with dependents	-0.4	2.70	-3.8	3.78	0.2	3.00
Dependent	†	†	†	†	†	†
Highest level of education expected in 1995–96						
No postsecondary degree or certificate	-29.2 *	5.61	-11.8 *	8.13	-37.4 *	6.26
Certificate	7.0 *	3.56	-3.9	5.11	1.7	4.00
Associate's degree	7.4 *	3.34	-5.6	4.92	0.9	3.75
Graduate degree	6.8 *	1.94	9.7 *	2.65	7.2 *	2.13
Bachelor's degree	†	†	†	†	†	†
Type of high school diploma						
GED or equivalency	-12.6 *	3.13	-2.6	4.35	-9.7 *	3.38
No high school degree or certificate	-4.5	4.53	0.4	6.43	-4.8	5.01
Regular high school diploma	†	†	†	†	†	†
Remedial coursetaking after high school						
Yes	-9.8 *	2.05	-5.1	2.84	-9.8 *	2.25
No	†	†	†	†	†	†
SAT/ACT composite score						
Did not take/missing	-16.1 *	3.13	-24.0 *	4.35	-13.6 *	3.38
Lowest quarter	-14.9 *	3.23	-21.7 *	4.73	-14.2 *	3.63
Middle two quarters	-6.8 *	2.16	-9.2 *	3.03	-4.8 *	2.38
Highest quarter	†	†	†	†	†	†

See notes at end of table.

Table B-3. Standard errors for the first three columns in table 15: Among 1995–96 beginning postsecondary students who were exclusively full-time students, least squared coefficients for percentage who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics—Continued

Student characteristics	Earned a degree or certificate		Earned a bachelor's degree		Persistence[1]	
	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]
Type of first institution						
Private not-for-profit, doctoral	8.6 *	2.91	8.2 *	4.16	6.4 *	3.25
Public 4-year nondoctoral	-3.3	2.48	-6.3	3.59	-2.8	2.75
Private not-for-profit 4-year nondoctoral	3.6	2.37	2.6	3.41	1.9	2.63
Public 2-year	-4.8	4.10	-8.6	5.86	-3.7	4.51
Other	10.4 *	4.42	-14.6 *	6.24	5.7	4.88
Public 4-year doctoral	†	†	†	†	†	†
Degree program in 1995–96						
Certificate	0.9	4.31	-24.7 *	6.05	-1.3	4.76
Associate's	-4.7	3.77	-18.7 *	5.30	-6.7	4.13
Bachelor's	†	†	†	†	†	†
Major field of study in 1995–96						
Humanities	-5.6	3.02	0.5	4.16	-7.7 *	3.25
Vocational/technical	-14.0 *	4.10	-4.6	5.86	-12.5 *	4.51
Other technical/professional	-13.5 *	2.59	-4.2	3.78	-12.1 *	2.88
Undeclared	-7.1 *	2.48	-1.3	3.59	-6.4 *	2.75
Social/behavioral sciences	-4.7	3.67	3.0	5.11	-5.1	4.00
Life sciences	-4.6	3.67	2.6	5.30	-0.3	4.00
Physical sciences	-10.0	8.84	-3.2	12.67	-4.4	9.76
Mathematics	-12.0	8.41	3.8	11.92	-13.9	9.26
Computer/information science	-2.9	5.61	-3.6	7.95	-3.4	6.13
Engineering	-3.0	3.23	-4.6	4.54	-2.4	3.63
Education	0.7	3.67	6.9	5.11	-1.7	4.00
Health	-5.2	3.02	-5.3	4.35	-5.2	3.25
Business/management	†	†	†	†	†	†
Enrollment continuity through 2001						
Not continuously enrolled	-17.2 *	1.83	-26.5 *	2.65	6.9 *	2.00
Continuously enrolled	†	†	†	†	†	†

See notes at end of table.

Table B-3. Standard errors for the first three columns in table 15: Among 1995–96 beginning postsecondary students who were exclusively full-time students, least squared coefficients for percentage who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics—Continued

Student characteristics	Earned a degree or certificate		Earned a bachelor's degree		Persistence[1]	
	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]
Employment status while enrolled in 1995–96						
Worked part time	-1.5	1.62	-1.5	2.27	-1.1	1.75
Worked full time	-8.8 *	2.48	-3.1	3.59	-7.7 *	2.75
Did not work	†	†	†	†	†	†
Perceived primary role through 2001						
Always considering themselves primarily as an employee	-14.7 *	2.91	-9.1 *	4.16	-15.9 *	3.25
Shifting from primarily a student to primarily an employee	6.0	3.45	-5.5	4.92	4.8	3.88
Shifting from primarily an employee to primarily a student	2.2	3.45	3.4	4.92	0.2	3.75
Always considering themselves primarily as a student	†	†	†	†	†	†

† Not applicable for the reference group.
* $p < .05$.
[1] Persistence is measured by the sum of the percentage who had attained a degree or certificate by 2001 and the percentage who were still enrolled by 2001.
[2] Least squares coefficients, multiplied by 100 to reflect percentage (see appendix B).
[3] Standard error of least squares coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).
[4] Black includes African American, Hispanic includes Latino, and Asian/Pacific Islander includes Native Hawaiian. The "other" category includes American Indian/Alaska Native, those who identified more than one race, and those who identified themselves with another race not shown in the table. Race categories exclude Hispanic origin unless specified.
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. The italicized group in each category is the reference group being compared.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

Table B-4. Standard errors for the middle three columns in table 15: Among 1995–96 beginning postsecondary students who were part-time students looking like full-time students, least squared coefficients for percentage who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics

	Earned a degree or certificate		Earned a bachelor's degree		Persistence[1]	
Student characteristics	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]
Total	78.2	8.93	76.8	5.36	78.8	8.30
Gender						
Female	2.2	3.57	3.0	2.04	-0.7	3.19
Male	†	†	†	†	†	†
Race/ethnicity[4]						
Black	-9.6	5.85	-9.2 *	3.44	-13.0 *	5.43
Hispanic	0.8	5.36	-3.9	3.19	-0.2	4.95
Asian/Pacific Islander	5.5	7.47	0.1	4.46	2.2	6.86
Other	1.7	11.69	8.9	6.89	-4.0	10.86
White	†	†	†	†	†	†
Socioeconomic status index in 1995–96						
Moderately disadvantaged	-3.0	3.74	-3.4	2.30	-4.6	3.51
Highly disadvantaged	-12.0 *	6.33	-8.2 *	3.70	-6.9	5.91
Not disadvantaged	†	†	†	†	†	†
Highest level of education expected in 1995–96						
No postsecondary degree or certificate	3.3	17.87	5.3	10.58	20.1	16.60
Certificate	-3.0	14.13	-8.5	8.42	-10.8	13.09
Associate's degree	11.0	10.23	-8.7	6.12	10.9	9.42
Graduate degree	5.2	3.90	9.1 *	2.30	13.4	3.67
Bachelor's degree	†	†	†	†	†	†
Remedial coursetaking after high school						
Yes	-9.9 *	4.22	-7.5 *	2.55	-6.0 *	3.99
No	†	†	†	†	†	†
SAT/ACT composite score						
Did not take/missing	-9.2	6.98	-13.9 *	4.08	-10.5	6.55
Lowest quarter	-7.2	7.31	-14.9 *	4.34	0.4	6.71
Middle two quarters	-2.8	5.85	-10.4 *	3.44	-3.5	5.43
Highest quarter	†	†	†	†	†	†

See notes at end of table.

Table B-4. Standard errors for the middle three columns in table 15: Among 1995–96 beginning postsecondary students who were part-time students looking like full-time students, least squared coefficients for percentage who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics—Continued

Student characteristics	Earned a degree or certificate		Earned a bachelor's degree		Persistence[1]	
	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]
Type of first institution						
Private not-for-profit, doctoral	7.9	8.93	8.4	5.23	2.5	8.30
Public 4-year nondoctoral	-9.4	6.82	-9.8 *	4.08	-3.3	6.39
Private not-for-profit 4-year nondoctoral	6.1	6.66	8.7 *	3.95	-1.2	6.23
Public 2-year	-2.4	10.88	-8.9	6.38	-5.0	10.06
Other	15.4	13.48	-12.0	7.91	13.9	12.45
Public 4-year doctoral	†	†	†	†	†	†
Degree program in 1995–96						
Certificate	7.1	12.67	-16.0 *	7.52	-0.8	11.81
Associate's	-1.6	10.39	-14.2 *	6.25	-4.0	9.74
Bachelor's	†	†	†	†	†	†
Major field of study in 1995–96						
Humanities	4.2	6.66	-9.2 *	3.95	11.8	6.23
Vocational/technical	3.7	19.65	-12.5	11.61	-11.9	18.20
Other technical/professional	7.5	7.96	-4.9	4.72	5.6	7.34
Undeclared	-9.9	5.85	-10.9 *	3.44	1.3	5.43
Social/behavioral sciences	-5.9	8.77	-12.7 *	5.23	-5.6	8.14
Life sciences	-6.2	9.42	-12.1 *	5.61	11.6	8.78
Physical sciences	-11.4	18.68	-5.6	10.97	-1.2	17.24
Mathematics	36.9	35.89	30.6	21.30	22.6	33.37
Computer/information science	-15.3	12.83	-14.6	7.52	-9.3	11.81
Engineering	-5.1	8.93	-12.3 *	5.23	3.8	8.30
Education	-0.6	8.12	-1.9	4.85	3.7	7.50
Health	3.1	7.31	-8.8 *	4.34	8.9	6.86
Business/management	†	†	†	†	†	†
Enrollment continuity through 2001						
Not continuously enrolled	-15.7 *	3.57	-23.0 *	2.17	5.6 *	3.35
Continuously enrolled	†	†	†	†	†	†

See notes at end of table.

Table B-4. Standard errors for the middle three columns in table 15: Among 1995–96 beginning postsecondary students who were part-time students looking like full-time students, least squared coefficients for percentage who had earned a degree or certificate by 2001, percentage who had earned a bachelor's degree by 2001, and percentage who persisted through 2001 after controlling for selected student characteristics—Continued

Student characteristics	Earned a degree or certificate		Earned a bachelor's degree		Persistence[1]	
	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]
Employment status while enrolled in 1995–96						
Worked part time	-13.6 *	4.22	-7.6 *	2.55	-3.2	3.99
Worked full time	-17.1 *	5.68	-11.9 *	3.44	-8.5 *	5.27
Did not work	†	†	†	†	†	†
Perceived primary role through 2001						
Always considering themselves primarily as an employee	-26.5 *	6.66	-9.3 *	3.95	-31.2 *	6.23
Shifting from primarily a student to primarily an employee	-13.7 *	4.87	-13.6 *	2.93	-16.9 *	4.47
Shifting from primarily an employee to primarily a student	-2.9	6.98	-7.2	4.21	4.4	6.55
Always considering themselves primarily as a student	†	†	†	†	†	†

† Not applicable for the reference group.
* $p < .05$.
[1] Persistence is measured by the sum of the percentage who had attained a degree or certificate by 2001 and the percentage who were still enrolled by 2001.
[2] Least squares coefficients, multiplied by 100 to reflect percentage (see appendix B).
[3] Standard error of least squares coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).
[4] Black includes African American, Hispanic includes Latino, and Asian/Pacific Islander includes Native Hawaiian. The "other" category includes American Indian/Alaska Native, those who identified more than one race, and those who identified themselves with another race not shown in the table. Race categories exclude Hispanic origin unless specified.
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. The italicized group in each category is the reference group being compared.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

Table B-5. Standard errors for the last two columns in table 15: Among 1995–96 beginning postsecondary students who were other part-time students, least squared coefficients for percentage who had earned a degree or certificate by 2001 and percentage who persisted through 2001 after controlling for selected student characteristics

Student characteristics	Earned a degree or certificate		Persistence[1]	
	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]
Total	31.2	11.94	47.3	12.56
Gender				
Female	2.7	3.76	1.7	3.97
Male	†	†	†	†
Race/ethnicity[4]				
Black	-2.9	5.08	0.7	5.29
Hispanic	-9.0	5.08	-6.1	5.40
Asian/Pacific Islander	2.4	9.17	9.0	9.58
Other	18.1	13.48	17.5	14.10
White	†	†	†	†
Socioeconomic status index in 1995–96				
Moderately disadvantaged	-0.8	4.09	-5.0	4.30
Highly disadvantaged	6.0	5.19	1.1	5.51
Not disadvantaged	†	†	†	†
Dependency status in 1995–96				
Independent without dependents	-8.8	4.97	-6.1	5.18
Independent with dependents	-3.5	4.42	-2.1	4.63
Dependent	†	†	†	†
Highest level of education expected in 1995–96				
No postsecondary degree or certificate	-11.8	8.40	-15.1	8.81
Certificate	-2.2	7.18	-3.1	7.60
Associate's degree	-4.7 *	5.97	-13.6 *	6.28
Graduate degree	10.7	4.64	2.8	4.85
Bachelor's degree	†	†	†	†
Type of high school diploma				
GED or equivalency	5.8	4.97	0.4	5.18
No high school degree or certificate	-10.6 *	7.18	-19.5 *	7.49
Regular high school diploma	†	†	†	†
Remedial coursetaking after high school				
Yes	-15.8 *	4.42	-5.9 *	4.63
No	†	†	†	†

See notes at end of table.

Table B-5. Standard errors for the last two columns in table 15: Among 1995–96 beginning postsecondary students who were other part-time students, least squared coefficients for percentage who had earned a degree or certificate by 2001 and percentage who persisted through 2001 after controlling for selected student characteristics—Continued

Student characteristics	Earned a degree or certificate		Persistence[1]	
	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]
SAT/ACT composite score				
Did not take/missing	-1.9	9.51	14.9	10.02
Lowest quarter	-15.4	10.72	3.8	11.35
Middle two quarters	2.2	9.62	17.0	10.02
Highest quarter	†	†	†	†
Type of first institution				
Private not-for-profit, doctoral	9.0	15.92	0.9	16.74
Public 4-year nondoctoral	-3.6	9.28	-8.0	9.80
Private not-for-profit 4-year nondoctoral	13.1	11.38	-3.7	11.90
Public 2-year	1.1	10.94	-7.8	11.57
Other	16.7	11.61	4.9	12.23
Public 4-year doctoral	†	†	†	†
Degree program in 1995–96				
Certificate	7.6	10.28	-8.6	10.91
Associate's	-1.0	9.84	-9.6	10.36
Bachelor's	†	†	†	†
Major field of study in 1995–96				
Humanities	-0.1	7.07	-7.4	7.38
Vocational/technical	13.8	9.73	7.7	10.24
Other technical/professional	24.7 *	6.41	18.1 *	6.72
Undeclared	10.5	5.75	8.8	6.06
Social/behavioral sciences	6.5	8.84	5.7	9.25
Life sciences	9.1	13.60	7.1	14.32
Physical sciences	-10.6	30.06	-17.9	31.62
Mathematics	-37.4	43.33	-50.2	45.50
Computer/information science	3.7	11.05	-1.5	11.57
Engineering	21.7 *	7.85	21.8 *	8.26
Education	15.8	9.17	13.5	9.58
Health	17.8	6.96	11.1	7.27
Business/management	†	†	†	†
Enrollment continuity through 2001				
Not continuously enrolled	-10.1 *	3.54	17.4 *	3.75
Continuously enrolled	†	†	†	†

See notes at end of table.

Table B-5. Standard errors for the last two columns in table 15: Among 1995–96 beginning postsecondary students who were other part-time students, least squared coefficients for percentage who had earned a degree or certificate by 2001 and percentage who persisted through 2001 after controlling for selected student characteristics—Continued

Student characteristics	Earned a degree or certificate		Persistence[1]	
	Least squared coefficient[2]	Standard error[3]	Least squared coefficient[2]	Standard error[3]
Employment status while enrolled in 1995–96				
Worked part time	2.4	5.08	10.1	5.29
Worked full time	-6.6	5.08	0.4	5.40
Did not work	†	†	†	†
Perceived primary role through 2001				
Always considering themselves primarily as an employee	-8.1 *	4.53	-15.5 *	4.85
Shifting from primarily a student to primarily an employee	-3.1	5.42	-4.8	5.73
Shifting from primarily an employee to primarily a student	13.4	7.07	1.3	7.38
Always considering themselves primarily as a student	†	†	†	†

† Not applicable for the reference group.
* $p < .05$.
[1] Persistence is measured by the sum of the percentage who had attained a degree or certificate by 2001 and the percentage who were still enrolled by 2001.
[2] Least squares coefficients, multiplied by 100 to reflect percentage (see appendix B).
[3] Standard error of least squares coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).
[4] Black includes African American, Hispanic includes Latino, and Asian/Pacific Islander includes Native Hawaiian. The "other" category includes American Indian/Alaska Native, those who identified more than one race, and those who identified themselves with another race not shown in the table. Race categories exclude Hispanic origin unless specified.
NOTE: Estimates include students from the 50 states, DC, and Puerto Rico. The italicized group in each category is the reference group being compared.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).