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the literacy of america's college students

January 2006

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Executive Summary

Rapid changes in technology make it necessary for adults of all ages to use written information in new and more complex ways. For example, learning how to operate computers, filling out complicated tax forms, and comparing price labels when shopping for groceries are just a few of the many tasks that are important parts of our lives.

Every adult needs a range of literacy skills to achieve his or her personal goals, pursue a successful career, and play an active role as a citizen. High levels of literacy also enable individuals to keep pace with changing educational expectations and technologies and support the aspirations of their families.

With the recent attention on accountability measures for elementary and secondary schools, accountability in institutions of higher education has been all but overlooked. The National Survey of America's College Students (NSACS) is a study that examines the literacy of U.S. college students, providing information on how prepared these students are to continue to learn and use the skills that they will need in the years to come. Such an examination provides a valuable set of indicators of performance in higher education, informing such issues as the relationship among educational experience, literacy, and preparedness for the job market.

The NSACS, sponsored by The Pew Charitable Trusts, collected data from a sample of 1,827 graduating students at 80 randomly selected 2-year and 4-year colleges and universities (68 public and 12 private) from across the United States. The NSACS specifically targeted college and university students nearing the end of their degree program, thus providing a broader and more comprehensive picture of students' fundamental literacy abilities than ever before.

The NSACS used the same assessment instrument as the 2003 National Assessment of Adult Literacy (NAAL), a nationally representative survey of the English-language literacy abilities of U.S. adults 16 and older residing in households or prisons. The NAAL was developed and administered by the U.S. Department of Education's National Center for Education Statistics (NCES). Literacy levels were categorized as *Below Basic*, *Basic*, *Intermediate*, or *Proficient* on the basis of the abilities of participants.

Because literacy is not a single skill used in the same manner for all types of printed and written information, the NSACS measured literacy along three dimensions: *prose literacy*, *document literacy*, and *quantitative literacy*. These three literacy domains were designed to capture an ordered set of information-processing skills and strategies that adults use to accomplish a wide range of literacy tasks and make it possible to pro-

file the various types and levels of literacy among different subgroups in society.

Prose Literacy: The knowledge and skills needed to perform prose tasks, that is, to search, comprehend, and use information from continuous texts. Prose examples include editorials, news stories, brochures, and instructional materials.

Document Literacy: The knowledge and skills needed to perform document tasks, that is, to search, comprehend, and use information from noncontinuous texts in various formats. Document examples include job applications, payroll forms, transportation schedules, maps, tables, and drug or food labels.

Quantitative Literacy: The knowledge and skills required to perform quantitative literacy tasks, that is, to identify and perform computations, either alone or sequentially, using numbers embedded in printed materials. Quantitative examples include balancing a checkbook, figuring out a tip, completing an order form, or determining the amount of interest on a loan from an advertisement.

In addition to measuring the literacy skills of college students, the NSACS administered a background questionnaire to address specific issues of interest to the higher education and policy communities, such as demographics, educational and language

background, previous educational experience, career plans, and current college experiences.

Chapter Highlights

Chapter 2

This chapter compares the literacy of U.S. college students with the literacy of U.S. adults by key demographic groups. The results revealed the following:

- The average prose, document, and quantitative literacy of students in 2- and 4-year institutions was significantly higher than the average literacy of adults in the nation.
- Students in 2- and 4-year colleges struggled most with quantitative literacy. Approximately 30 percent of students in 2-year institutions and 20 percent of students in 4-year institutions have *Basic* or below quantitative literacy.
- Across colleges and universities, the average literacy of male and female college students was higher than the average literacy of men and women in the nation.
- The literacy gap between men and women in the nation largely disappears among college students.
- With the exception of Asian students in 2-year institutions, college students from each racial or ethnic group outperformed adults from the same racial or ethnic groups in the nation.
- The literacy gap between Whites and minorities in the nation remains among students in colleges and universities.
- In 4-year colleges, students with a non-English language background had higher average literacy than adults in the nation with an English-only language background.

- Students in 2- and 4-year colleges had higher prose and document literacy than adults in the nation with similar levels of education. On the document scale, scores for graduating seniors in 4-year institutions were 20 points higher than the scores of all adults in the United States who previously received a degree from a 4-year college or university. For quantitative literacy, however, differences between current and former college graduates were not significant.

Chapter 3

This chapter examines the literacy of U.S. college students across several measures of school context. The results revealed the following:

- Students in 4-year colleges had higher average prose, document, and quantitative literacy than their peers in 2-year colleges. The percentage of students with *Proficient* literacy in 4-year institutions was also higher than the percentage of students with *Proficient* literacy in 2-year institutions.
- The literacy of students in 4-year public institutions was comparable to the literacy of students in 4-year private institutions.
- Prose literacy was higher for students in selective 4-year institutions, although differences between selective and nonselective 4-year colleges for document and quantitative literacy could not be detected.
- The literacy of students in 2-year institutions did not differ on the basis of the academic or technical curricular emphasis of the institution.

Chapter 4

This chapter examines the relationship between literacy and selected background characteristics of college students. The results indicated the following:

- The literacy of U.S.-born students was higher than the literacy of their foreign-born peers in 2- and 4-year colleges, though differences in document and quantitative literacy between U.S.-born students in 2-year institutions and foreign-born students in 4-year institutions were not significant.
- Students in 4-year colleges with the highest levels of personal or family income had higher prose and document literacy than students with the lowest levels of personal or family income. Differences based on financial dependence were not significant between students.
- Children of adults who graduated college or attended graduate school had higher literacy than children of adults who failed to graduate high school or stopped their schooling after receiving a high school diploma or a GED.
- Students who enrolled in college immediately after high school graduation had literacy comparable to that of adults who took time off between high school graduation and college.
- Students who graduated from U.S. high schools had higher literacy than graduates from foreign high schools, though the literacy of students from foreign schools was similar to or greater than the literacy of all U.S. adults.
- The average literacy of U.S. college students was generally the same regardless of how long students had been in college, their enrollment status, or the number of postsecondary institutions they attended.
- Students in 2-year colleges who took remedial math classes struggled specifically with their quantitative literacy, whereas students who took remedial English classes struggled with all three domains of literacy.
- Students in 4-year institutions who took remedial English classes also had lower prose, document, and quantitative literacy than students who never completed a remedial course.
- With only a few exceptions, average literacy did not differ significantly across academic majors.
- Students with higher grade point averages (GPAs) generally had higher literacy than students with lower GPAs.
- Among students in 4-year colleges, document and quantitative literacy was highest for students who expected to earn a first professional degree. For students in 2-year institutions, literacy was lowest for students who reported that they would stop their education after obtaining an associate's degree.
- Prose and document literacy was higher for students in 2- and 4-year institutions enrolled in classes that emphasized analytic thinking, such as evaluating the strength of arguments and applying theories to practical problems or new situations. In contrast, prose and quantitative literacy was lower for students in 4-year colleges and universities who frequently met with their instructors outside of class.

Chapter 5

This chapter examines the relationship between literacy and a variety of student college experiences. Although academics are at the core of postsecondary education, a student's college experience is also influenced by the student's engagement with faculty, peers, and community. Analyses of the NSACS data revealed the following:

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Introduction

Rapid changes in technology make it necessary for adults of all ages to use printed information in new and more complex ways. For example, learning how to operate computers, filling out complicated tax forms, and comparing price labels when shopping for groceries are just a few of the many tasks that are important parts of our lives.

Every adult needs a range of literacy skills to achieve his or her personal goals, pursue a successful career, and play an active role as a citizen. High levels of literacy also enable individuals to keep pace with changing educational expectations and technologies and support the aspirations of their families.

The more skilled U.S. adults are at using printed materials, the better prepared the nation will be to participate in an increasingly global society, maintain a high standard of living, and compete with other nations around the world.

What Is NSACS?

With the recent attention on accountability measures for elementary and secondary schools, accountability in institutions of higher education has been all but overlooked. The National Survey of America's College Students (NSACS) is a study that examines the literacy of U.S. college students, providing information on how prepared these students are to continue to learn and use the skills that they will need in the years to come. Such an examination provides a valuable set of indicators of performance in higher education, informing such issues as the relationship among educational experience, literacy, and preparedness for the job market.

The NSACS, sponsored by The Pew Charitable Trusts, surveyed the English-language literacy abilities of students in their final year of 2-year and 4-year higher education institutions. The NSACS specifically targeted college and university students nearing the end of their degree program, thus providing a broader and more comprehensive picture of students' fundamental literacy abilities than ever before.

The information gained from this study helps colleges and universities determine which types of students need help and what specific literacy needs should be addressed. The study also provides information on the relationship between literacy and specific issues related to the higher education experience, such as work experience, academic major, study habits, and out-of-school activities. Ultimately, the NSACS helps educators and employers develop a better picture of the skills of the emerging labor force.

Relationship Between NSACS and NAAL

The NSACS used the same assessment instrument as the 2003 National Assessment of Adult Literacy (NAAL), a nationally representative survey of the English-language literacy abilities of U.S. adults 16 and older residing in households or prisons. The NAAL was developed and administered by the U.S. Department of Education's National Center for Education Statistics (NCES).¹

Unlike indirect measures of literacy, which rely on self-reports of educational attainment, the NAAL measures literacy through asking respondents to demonstrate that they understand the meaning of information found in texts they are asked to read. These tasks represent a range of literacy tasks encountered by adults in their daily lives. The NAAL and the NSACS use the same underlying definition of literacy and focus on a broad range of tasks that adults perform in order to function at work, at home, and in the community.

The NSACS is also reported using the same scale as the NAAL, with scores ranging from 0 to 500 in each of three domains of literacy: prose, document, and quantitative. Because of the close relationship between the NSACS and the NAAL, data from the study allow comparisons between college students and the broader adult population.

¹For additional information about the NAAL, see White, S. and Dillow, S. (2005). *Key Concepts and Features of the 2003 National Assessment of Adult Literacy* (NCES 2006-471). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

Defining Literacy

The NSACS uses the NAAL definition of literacy:

using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential.

This definition goes beyond simply decoding and understanding text to include a broad range of information-processing skills that adults use in accomplishing tasks associated with work, home, and community contexts.

Because literacy is not a single skill used in the same manner for all types of printed and written information, the NSACS measured literacy along three dimensions: *prose literacy*, *document literacy*, and *quantitative literacy*. These three literacy domains were designed to capture an ordered set of information-processing skills and strategies that adults use to accomplish a wide range of literacy tasks and make it possible to profile the various types and levels of literacy among different subgroups in society.

Prose Literacy: The knowledge and skills needed to perform prose tasks, that is, to search, comprehend, and use information from continuous texts. Prose examples include editorials, news stories, brochures, and instructional materials.

Document Literacy: The knowledge and skills needed to perform document tasks, that is, to search, comprehend, and use information from noncontinuous texts in various formats. Document examples include job applications, payroll forms, transportation schedules, maps, tables, and drug or food labels.

Quantitative Literacy: The knowledge and skills required to perform quantitative literacy tasks, that is, to identify and perform computations, either alone or sequentially, using numbers embedded in printed materials. Quantitative examples include balancing a checkbook, figuring out a tip, completing an order form, or determining the amount of interest on a loan from an advertisement.

Sample items for each of the three literacy domains are in Appendix A.

Background Questionnaire

In addition to measuring the literacy skills of college students, the NSACS administered a background questionnaire to address specific issues of interest to the higher education and policy communities, such as demographics, educational and language background, previous educational experience, career plans, and current college experience. The NSACS questionnaire covered the following topics:

- General and Language Background
- Educational Background and Experience
- Political and Social Participation
- Labor Force Participation
- Literacy Practices
- Demographic Information
- Educational Aspirations

With these data the NSACS can identify relationships between literacy and selected characteristics and experiences of college students.

Assessment Design and Administration

The literacy tasks included in the NAAL and the NSACS assessments were drawn from actual texts and documents, which were either used in their original format or reproduced in the assessment booklets. The types of texts and documents used in the assessment included an almanac, a mock newspaper, a pamphlet about testing for colon cancer, and an informational booklet about Medicare. Calculators were provided for quantitative literacy questions, but students were not required to use them.

Each question appeared in the assessment booklet before the materials needed to answer it, thus encouraging respondents to read with purpose. Consistent with the way adults use written materials in their everyday lives, respondents could correctly answer many questions by skimming the text or document for the information necessary to answer a given task. All tasks were open-ended, and respondents wrote their answers directly in their assessment booklets.

Unlike the NAAL, which was administered to respondents in the households or prisons where they resided, the NSACS was administered to students on their college campuses. Both the NSACS background questionnaire and the literacy assessment were self-administered under the supervision of a test administrator. The test administrator served as a logistical coordinator to secure space at each college or university where students could go to take the assessment and as a monitor to ensure the fair and accurate administration of the NSACS.

On average, the background questionnaire and the assessment took 90 minutes to complete, though students were allowed to take as much time as they needed. Students were given a small monetary incentive to participate in the study.

Sample

The NSACS collected data from a sample of 1,827 graduating students at 80 randomly selected 2-year and 4-year colleges and universities (68 public and 12 private) from across the United States. Institutions were randomly selected to reflect the population of institutions overall. The sampling procedure followed a two-stage design in which institutions were selected in the first stage and students were selected in the second stage. The sample took into account size, location, and types of degrees offered to create a nationally representative sample.

Approximately 25 students in each institution were randomly selected for the assessment. Eligible students included only those in their last year of a degree-seeking program (e.g., A.A., B.A., B.S.).²

Reporting Standards

NSACS results are reported in the same format as the NAAL to allow easy comparison between the general adult population and the population of students completing higher education degrees.³

²For further details on sampling procedures and response rates, see Appendix B.

³For the first set of NAAL results, see Kutner, M., Greenberg, E., and Baer, J. (2005). *A First Look at the Literacy of America's Adults in the 21st Century* (NCES 2006-470). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

Proficiency is measured separately for prose, document, and quantitative literacy on scales that range from 0 to 500. Literacy scores are presented in two formats: 1) as averages and 2) as the percentage of respondents within different literacy levels. The literacy levels divide respondents into different groups on the basis of their performance on the assessment, providing a context for interpreting the literacy scores.

The National Center for Education Statistics (NCES) asked the National Research Council's Board on Testing and Assessment (BOTA) to recommend a set of literacy levels to report results from the NAAL.⁴ The NSACS uses the same literacy reporting levels as the NAAL. Drawing on recommendations from BOTA's Committee on Performance Levels for Adults, NCES decided to report the assessment results using four literacy levels. Descriptions of the abilities associated with each level and the types of tasks that respondents in the levels could complete are presented in Table 1.1.

Interpreting NSACS Results

The average scores and percentages presented in this report are estimates based on a sample of college students enrolled in 2- and 4-year institutions in the United States. Like all samples, the results are subject to a measure of uncertainty (i.e., sampling error), reflected in the standard errors of the estimates. Standard errors for the prose, document, and quantitative scale scores and the percentage of adults in each literacy level are presented in Appendix C.

The discussion of results in the following chapters takes into account the standard errors associated with the estimates. All differences noted in this report, whether between college students and the nation or between members of a population group (e.g., men and women), are statistically significant at the .05 level, based on a two-tailed test. This means that observed differences between groups are unlikely to be due to chance factors associated with sampling variability. Hence, the term

⁴Hauser, R.M., Edley, C.F. Jr., Koenig, J.A., and Elliott, S.W. (Eds.). (2005). *Measuring Literacy: Performance Levels for Adults, Interim Report*. Washington, DC: National Academies Press.

Table 1.1. Overview of the literacy levels

Level and definition	Key abilities associated with level	Sample tasks typical of level
<p>Below Basic indicates no more than the most simple and concrete literacy skills.</p> <p>Score ranges for <i>Below Basic</i>:</p> <p>Prose: 0–209 Document: 0–204 Quantitative: 0–234</p>	<p>Adults at the <i>Below Basic</i> level range from being nonliterate in English to having the abilities listed below:</p> <ul style="list-style-type: none"> ■ locating easily identifiable information in short, commonplace prose texts ■ locating easily identifiable information and following written instructions in simple documents (e.g., charts or forms) ■ locating numbers and using them to perform simple quantitative operations (primarily addition) when the mathematical information is very concrete and familiar 	<ul style="list-style-type: none"> ■ searching a short, simple text to find out what a patient is allowed to drink before a medical test ■ signing a form ■ adding the amounts on a bank deposit slip
<p>Basic indicates skills necessary to perform simple and everyday literacy activities.</p> <p>Score ranges for <i>Basic</i>:</p> <p>Prose: 210–264 Document: 205–249 Quantitative: 235–289</p>	<ul style="list-style-type: none"> ■ reading and understanding information in short, commonplace prose texts ■ reading and understanding information in simple documents ■ locating easily identifiable quantitative information and using it to solve simple, one-step problems when the arithmetic operation is specified or easily inferred 	<ul style="list-style-type: none"> ■ finding in a pamphlet for prospective jurors an explanation of how people were selected for the jury pool ■ using a television guide to find out what programs are on at a specific time ■ comparing the ticket prices for two events
<p>Intermediate indicates skills necessary to perform moderately challenging literacy activities.</p> <p>Score ranges for <i>Intermediate</i>:</p> <p>Prose: 265–339 Document: 250–334 Quantitative: 290–349</p>	<ul style="list-style-type: none"> ■ reading and understanding moderately dense, less commonplace prose texts as well as summarizing, making simple inferences, determining cause and effect, and recognizing the author's purpose ■ locating information in dense, complex documents and making simple inferences about the information ■ locating less familiar quantitative information and using it to solve problems when the arithmetic operation is not specified or easily inferred 	<ul style="list-style-type: none"> ■ consulting reference materials to determine which foods contain a particular vitamin ■ identifying a specific location on a map ■ calculating the total cost of ordering specific office supplies from a catalog
<p>Proficient indicates skills necessary to perform more complex and challenging literacy activities.</p> <p>Score ranges for <i>Proficient</i>:</p> <p>Prose: 340–500 Document: 335–500 Quantitative: 350–500</p>	<ul style="list-style-type: none"> ■ reading lengthy, complex, abstract prose texts as well as synthesizing information and making complex inferences ■ integrating, synthesizing, and analyzing multiple pieces of information located in complex documents ■ locating more abstract quantitative information and using it to solve multistep problems when the arithmetic operations are not easily inferred and the problems are more complex 	<ul style="list-style-type: none"> ■ comparing viewpoints in two editorials ■ interpreting a table about blood pressure, age, and physical activity ■ computing and comparing the cost per ounce of food items

Note: Although the literacy levels share common names with the achievement levels of the National Assessment of Educational Progress (NAEP), they do not correspond to the NAEP levels.

Source: Hauser, R.M., Edley, C.F. Jr., Koenig, J.A., and Elliott, S.W. (Eds.). (2005). *Measuring Literacy: Performance Levels for Adults, Interim Report*. Washington, DC: National Academies Press; White, S. and Dillow, S. (2005). *Key Concepts and Features of the 2003 National Assessment of Adult Literacy* (NCES 2006-471). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

“significant” does not reflect any judgment about the absolute magnitude of differences.

Organization of the Report

This report is divided into five chapters. Following this introduction, the next chapter compares the literacy of college students with that of all adults throughout the United States. Chapter 3 explores the relationship between literacy and various contextual aspects of postsecondary education institutions. Chapters 4 and 5 examine literacy as it relates to

various characteristics of students and their college experience. In addition, several appendices provide supplementary information. Appendix A presents sample questions from the NSACS instrument for prose, document, and quantitative literacy. Appendix B contains additional information on various technical aspects of the study, including sampling, data collection, scaling, weighting, and statistical testing. Appendix C gives standard errors for the tables and figures throughout this report. A glossary of terms and their definitions is in Appendix D.

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a b c d e f g h i j k l m n o p q r s
l m n o p q r s t u v w x y z a b c
n o p q r s t u v w x y z a b c d e
i j k l m n o p q r s t u v w x y z
e f g h i j k l m n o p q r s t u v
o p q r s t u v w x y z a b c d e f g
n o p q r s t u v w x y z a b c d e
i j k l m n o p q r s t u v w x y z
k l m n o p q r s t u v w x y z a
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Introduction

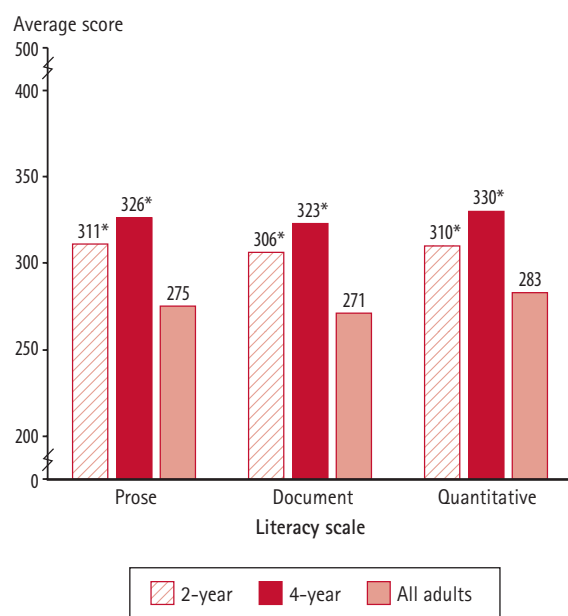
To provide a context for interpreting the literacy of U.S. college students, this chapter compares results from the NSACS study with results from the NAAL. As described in Chapter 1, the NAAL assessed the literacy of U.S. adults residing in households or incarcerated in prisons. Comparisons between the NSACS and the NAAL are useful because they place the literacy of college students within the broader spectrum of adult literacy in the United States.

The NSACS study was designed to explore the relationship between literacy and a series of measures relevant to colleges and college students. Consequently, comparisons between the NSACS and the NAAL are limited to overall differences between the population of college students and the population of all adults, as well as four key measures: gender, race and ethnicity, language background, and completion of a postsecondary degree. The following chapters build on the results presented here, focusing particular attention on differences across types of institutions and characteristics of students.

Adults in College and in the Nation

The average prose, document, and quantitative literacy of students in 2- and 4-year colleges was significantly higher than the average literacy of adults in the nation (Figure 2.1). Across the literacy scales, the percentage of students in 2- and 4-year institutions with *Below Basic* literacy was also significantly lower than the percentage of adults in the nation with *Below Basic* literacy (Figure 2.2).

Figure 2.1. Average prose, document, and quantitative literacy scores of U.S. adults in college and the nation



* Significantly different from all adults.

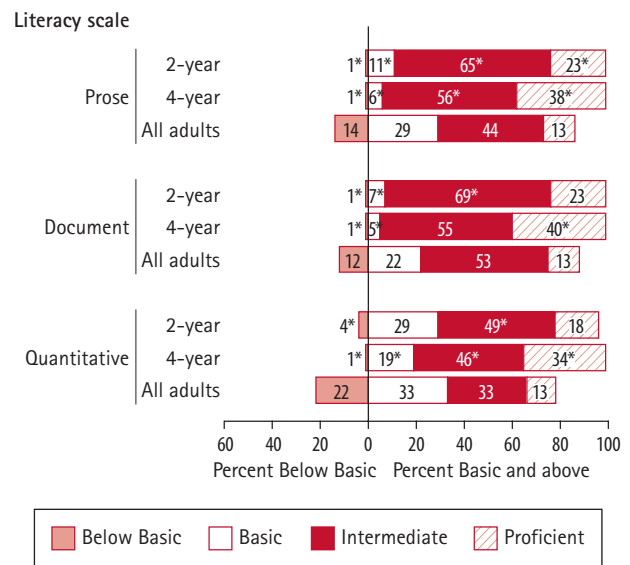
Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Most students had literacy above the *Basic* level, though there were fewer differences between students and adults in the nation at the higher literacy levels. For example, the percentage of students in 2-year colleges with *Proficient* document and quantitative literacy did not differ significantly from the percentage of adults in the nation with *Proficient* document and quantitative literacy (the percentage of students in 4-year institutions with *Proficient* literacy was higher than the percentage of adults in the nation across the three scales).

Although the average literacy of college students on all scales was higher than the literacy of America's adults, the results indicate that students in 2- and 4-year institutions struggle most with quantitative literacy. Nearly 20 percent of students in 4-year colleges had *Basic* quantitative literacy, compared with 6 percent with *Basic* prose literacy and 5 percent with *Basic* document literacy. The performance of students in 2-year institutions was also troubling. Approximately 30 percent had *Basic* quantitative literacy, which was not significantly different from the percentage of adults in the nation with *Basic* quantitative literacy.

Figure 2.2. Percentage of U.S. adults in college and the nation in each prose, document, and quantitative literacy level



* Significantly different from all adults.

Note: Percentages may not add to 100 because of rounding. Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Gender

Men and women in 2- and 4-year colleges had higher average literacy than did men and women in the nation in 2003 (Table 2.1). The majority of male and female college students had either *Intermediate* or *Proficient* prose, document, and quantitative literacy, and far fewer had *Below Basic* literacy compared with the percentage of men and women in the national population with *Below Basic* literacy. Among men and women at 4-year colleges and universities, a higher percentage had *Proficient* literacy than did men and women in the nation (Tables 2.2, 2.3, 2.4).

Although the performance of men and women in college relative to adults in the population is hardly surprising, more interesting is the absence of a gap in literacy between men and women enrolled in 2- and 4-year institutions. Among the nation's adults, for example, women outperform men on prose

literacy and men outperform women on quantitative literacy. Among college students, however, differences in the average prose, document, and quantitative literacy of men and women were not significant. The lack of a significant difference in quantitative literacy between men and women enrolled in college is especially encouraging because it indicates that women may be making progress in bridging a divide that has long existed between the sexes.

Race/Ethnicity

Similar to the results for gender, the average literacy of White, Black, Hispanic, and Asian students in 4-year colleges was significantly higher than the average literacy of adults in the same racial and ethnic groups in the nation. The average literacy of White, Black, and Hispanic students in 2-year institutions was also higher than in the nation, though the literacy of Asian stu-

Table 2.1. Average prose, document, and quantitative literacy scores for U.S. adults in college and the nation, by selected characteristics

Characteristic	Prose			Document			Quantitative		
	2-year	4-year	All adults	2-year	4-year	All adults	2-year	4-year	All adults
GENDER									
Female	312	326	277*	306	322	272*	306	326	279*
Male	309	327	272	307	325	269	316	336	286
RACE/ETHNICITY									
White	319	332	288	315	329	282	321	337	297
Black	296**	296**	243**	286**	293**	238**	289**	292**	238**
Hispanic	308	313**	216**	294**	313	224**	296**	310**	233**
Asian/Pacific Islander	274**	307**	271**	286**	302**	272	278**	314**	285**
LANGUAGE SPOKEN BEFORE STARTING SCHOOL									
English only	316	329	283	311	326	276	317	333	289
English and other language	~	327	272***	~	316	264***	~	317***	278***
Non-English	288***	303***	212***	283***	306***	222***	284***	318	235***

* Significantly different from men.

** Significantly different from Whites.

*** Significantly different from English only.

~ Literacy score could not be estimated because of small sample size.

Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this table. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

dents in 2-year colleges did not differ significantly from the literacy of Asians in the national population.

Although the percentage of White, Black, Hispanic, and Asian students with *Below Basic* literacy enrolled in 4-year colleges was significantly lower than in the population, there were far fewer differences in the percentage of White, Black, Hispanic, and Asian students with *Proficient* literacy compared with adults in the nation. With only a few exceptions, the racial and ethnic distribution of college students with *Proficient* prose, document, and quantitative literacy was similar to the distribution in the U.S. adult population.

More discouraging was the persistence of disparities in the average literacy of White students compared with the literacy of students from other racial and ethnic backgrounds. Mirroring trends in the population, the average prose and

quantitative literacy of White students in 4-year institutions was higher than for any other racial/ethnic group. Similarly, White students also had the highest prose and document literacy among students in 2-year colleges.¹ Even at an advanced level of educational attainment, the results indicate that the literacy gap between minority and nonminority students fails to dissipate.

Language Spoken Before Starting School

Literacy results by language background were similar to the results for gender and race/ethnicity, with students in 2- and 4-year colleges outperforming adults in the nation in the three language groups (English only, English and another

¹Differences between White and Hispanic students in 4-year institutions were not significant for document literacy. The lack of a statistically significant difference, however, is likely due to the large standard errors for Hispanic students.

Table 2.2. Percentage of U.S. adults in college and the nation in each prose literacy level, by selected characteristics

Characteristic	<i>Below Basic</i>			<i>Basic</i>			<i>Intermediate</i>			<i>Proficient</i>		
	2-year	4-year	All adults	2-year	4-year	All adults	2-year	4-year	All adults	2-year	4-year	All adults
GENDER												
Female	0	1	12*	9	6	29	69	56	46*	22	37	14
Male	2	0	15	14	7	29	61	55	43	24	38	13
RACE/ETHNICITY												
White	0	0	7	6	3	25	67	55	51	27	42	17
Black	0	4	24**	18	20**	43**	71	61	31**	11	16**	2**
Hispanic	2	2	44**	12	4	30**	63	55	23**	22	29	4**
Asian/Pacific Islander	5	1	14**	39*	17**	32**	49	59	42**	7**	23	12**
LANGUAGE SPOKEN BEFORE STARTING SCHOOL												
English only	1	0	9	8	5	27	66	56	49	26	39	15
English and other language	~	0	10	~	6	35***	~	58	47	~	36	8***
Non-English	2	4	48***	26***	19***	28	62	54	21***	9***	24	4***

* Significantly different from men.
 ** Significantly different from Whites.
 *** Significantly different from English only.
 ~ Literacy score could not be estimated because of small sample size.
 Note: Percentages may not add to 100 because of rounding. Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this table. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.
 Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

language,² and non-English). Moreover, in 4-year colleges and universities, the average literacy of students with a non-English language background was *higher* than the average literacy of adults in the nation who spoke only English before starting school. The average literacy of students in 4-year institutions who spoke English and an additional non-English language was also higher than the average literacy of English-only speakers in the nation.

²Literacy estimates for students in this group are available for 4-year colleges only. The number of students in the 2-year college sample who spoke English and an additional language was too small to generate reliable literacy scores.

The superior prose literacy of students with a non-English language background compared with that of adults in the nation who spoke only English is especially impressive. Document and quantitative literacy tasks require respondents to read English language text, but also to navigate tables, charts, and schedules and to perform arithmetical calculations. Document navigation and math skills are not dependent on English language literacy, though some familiarity with English is certainly required in order to successfully complete the document and quantitative tasks in the NSACS assessment.

Table 2.3. Percentage of U.S. adults in college and the nation in each document literacy level, by selected characteristics

Characteristic	<i>Below Basic</i>			<i>Basic</i>			<i>Intermediate</i>			<i>Proficient</i>		
	2-year	4-year	All adults	2-year	4-year	All adults	2-year	4-year	All adults	2-year	4-year	All adults
GENDER												
Female	1	1	11*	8	4	22	68	58	54*	24	38	13
Male	1	0	14	7	5	23	69	52	51	24	43	13
RACE/ETHNICITY												
White	0	0	8	3	3	19	68	52	58	28	45	15
Black	1	3	24**	16	12	35**	74	68	40**	10	17**	2**
Hispanic	1	3	36**	10	10	26**	73	52	33**	15	35	5**
Asian/Pacific Islander	8**	0	11	17**	9	22	56	71	54	18	20	13
LANGUAGE SPOKEN BEFORE STARTING SCHOOL												
English only	0	0	9	5	4	21	68	53	56	27	42	13
English and other language	~	0	11	~	7	27***	~	60	56	~	33	6***
Non-English	4	1	37***	17***	9	25***	69	63	32***	10	26	6***

* Significantly different from men.

** Significantly different from Whites.

*** Significantly different from English only.

~ Literacy score could not be estimated because of small sample size.

Note: Percentages may not add to 100 because of rounding. Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this table. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

In contrast, prose literacy tasks require respondents to read and draw inferences from connected text, such as newspaper articles, short stories, and poems. The mastery of prose tasks demonstrated by non-English speakers, relative to adults in the nation who spoke only English before starting school, illustrates the strong English literacy of students in 4-year colleges with non-English language backgrounds.

Within 2- and 4-year colleges and universities, the average prose and document literacy of students with an English-only

language background was significantly higher than the literacy of their peers who spoke a non-English language before starting school. The quantitative literacy of students in 2-year institutions with an English-only background was also higher than the quantitative literacy of students with a non-English background, though differences between the two groups of students in 4-year colleges and universities were not significant.

Table 2.4. Percentage of U.S. adults in college and the nation in each quantitative literacy level, by selected characteristics

Characteristic	<i>Below Basic</i>			<i>Basic</i>			<i>Intermediate</i>			<i>Proficient</i>		
	2-year	4-year	All adults	2-year	4-year	All adults	2-year	4-year	All adults	2-year	4-year	All adults
GENDER												
Female	5	1	22	31	20	35*	47	49	32	16	30	11*
Male	2	1	21	25	17	31	53	42	33	20	39	16
RACE/ETHNICITY												
White	1	1	13	22	15	32	53	45	39	24	40	17
Black	9	6	47**	42**	43	36**	42	46	15**	7**	5**	2**
Hispanic	10	4	50**	35	33**	29**	41	45	17**	14	19	4**
Asian/Pacific Islander	13	2	19	50	28	34	35	51	35	3**	20	12**
LANGUAGE SPOKEN BEFORE STARTING SCHOOL												
English only	2	1	18	25	17	33	52	46	35	21	36	15
English and other language	~	2	21	~	25	38***	~	53	31***	~	21	10***
Non-English	8	4	49***	49	27	28***	40	41	18***	3***	27	6***

* Significantly different from men.

** Significantly different from Whites.

*** Significantly different from English only.

~ Literacy score could not be estimated because of small sample size.

Note: Percentages may not add to 100 because of rounding. Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this table. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

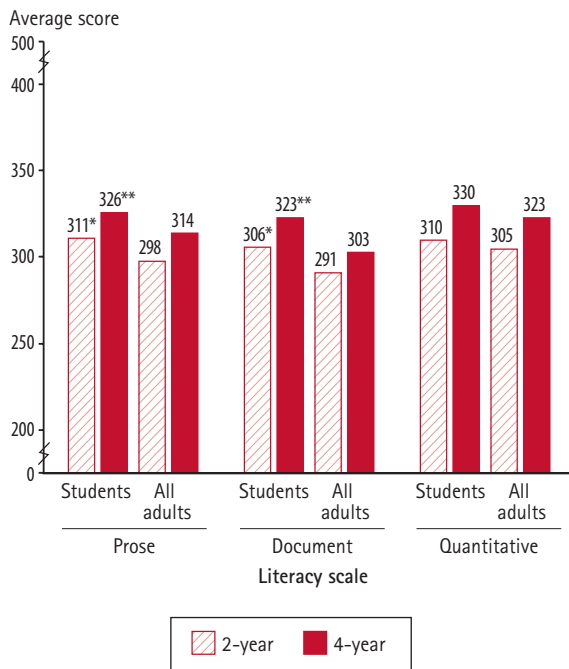
Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Postsecondary Education

Students in 2- and 4-year colleges had higher prose and document literacy than adults in the nation with similar levels of education (Figure 2.3).³ On the document scale, the scores for graduating seniors in 4-year institutions were 20 points higher than the scores of all adults in the United States who previously received a degree from a 4-year college or university. For quantitative literacy, however, differences between current and former college graduates were not significant.

³The former group refers to students selected for the NSACS sample, and the latter group refers to adults in the NAAL sample who obtained a degree from a 2- or 4-year postsecondary institution. Unlike the NSACS, which was limited to students graduating in spring 2003, the year of college graduation varied across adults in the NAAL sample. Some adults in the NAAL sample received their degree recently, whereas others completed their postsecondary education decades ago.

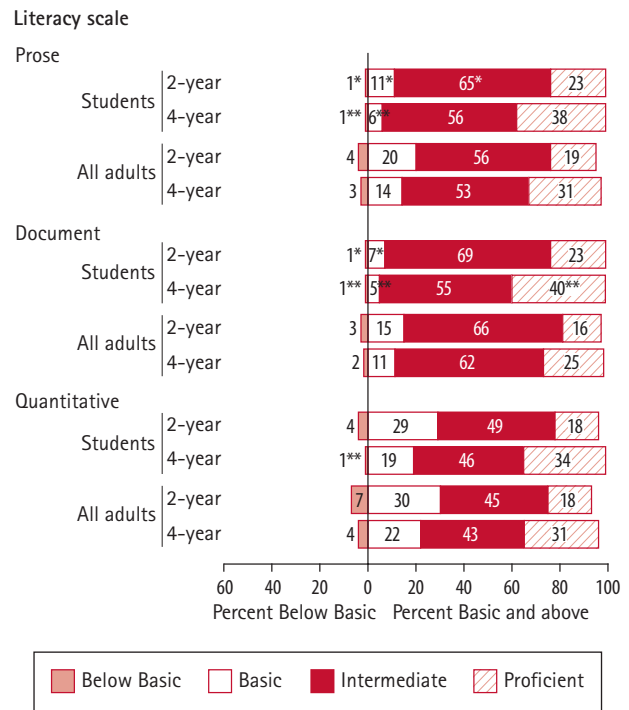
Figure 2.3. Average prose, document, and quantitative literacy scores of U.S. adults in college and the nation, by completion of postsecondary education



*Significantly different from all adults with degrees from 2-year institutions.
 **Significantly different from all adults with degrees from 4-year institutions.
 Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.
 Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Moreover, with one exception, the percentage of students in 2- or 4-year colleges with *Proficient* literacy (Figure 2.4) was comparable to the percentage of college graduates in the nation with *Proficient* literacy (the percentage of students in 4-year institutions with *Proficient* document literacy was significantly higher than the percentage of college graduates in the nation with *Proficient* document literacy). Underscoring the struggles that current college students have with quantitative literacy, the percentage of graduating students with *Basic* quantitative literacy was comparable to the percentage of college graduates in the nation with *Basic* quantitative literacy.

Figure 2.4. Percentage of U.S. adults in college and the nation in each prose, document, and quantitative literacy level, by completion of postsecondary education



* Significantly different from all adults with degrees from 2-year institutions.
 ** Significantly different from all adults with degrees from 4-year institutions.
 Note: Percentages may not add to 100 because of rounding. Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.
 Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Chapter Highlights

This chapter compared the literacy of U.S. college students with the literacy of U.S. adults by key demographic groups. The results revealed the following:

- The average prose, document, and quantitative literacy of students in 2- and 4-year institutions was significantly higher than the average literacy of adults in the nation.
- Students in 2- and 4-year colleges struggled the most with quantitative literacy. Approximately 30 percent of students in 2-year institutions and 20 percent of students in 4-year institutions have *Basic* or below quantitative literacy.
- Across colleges and universities, the average literacy of male and female college students was higher than the average literacy of men and women in the nation.
- The literacy gap between men and women in the nation largely disappears among college students.
- With the exception of Asian students in 2-year institutions, college students from each racial or ethnic group outperformed adults from the same racial or ethnic groups in the nation.
- The literacy gap between Whites and minorities in the nation remains among students in colleges and universities.
- In 4-year colleges, students with a non-English language background had higher average literacy than adults in the nation with an English-only language background
- Students in 2- and 4-year colleges had higher prose and document literacy than adults in the nation with similar levels of education, although differences in quantitative literacy between current and former college graduates were not significant.

q r s t u v w x y z a b c d e f g h
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a b c d e f g h i j k l m n o p q r s
l m n o p q r s t u v w x y z a b
j k l m n o p q r s t u v w x y z a
e f g h i j k l m n o p q r s t u v
h i j k l m n o p q r s t u v w x y
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a b c d e f r s t u v w x y z a b c
v w x y z a b c d e f g h i j k l m
y j k l m n o p q r s t u v w x y z
s t u v w x y z a b c d e f g h i j k
c d e f g h i j k l m n o p q r s t u
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Introduction

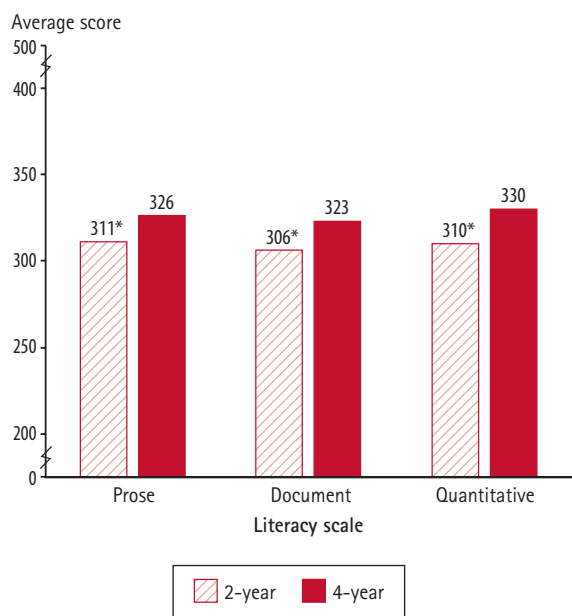
Postsecondary education in the United States is highly diversified, with institutions catering to students pursuing studies with a variety of goals. Students can select from a range of options for higher education, including 2- or 4-year colleges, public, private, or proprietary institutions, small liberal arts colleges, and large research institutions, among many others. This chapter examines the relationship between selected institutional characteristics and college student literacy. Because the emphasis of the NSACS project rested primarily on characteristics of students (examined in the following chapter), information about the context of higher education and literacy was limited to four measures: 1) type of institution (2-year or 4-year), 2) public versus private status,¹ 3) institutional selectivity, and 4) curricular emphasis.

2-Year Versus 4-Year Institutions

The results displayed in Figures 3.1 and 3.2 were also presented in Chapter 2, though the focus in that chapter was on differences between college students and adults in the nation (the national results are excluded from Figures 3.1 and 3.2). Just as the literacy of college students differed significantly from the

¹Private proprietary institutions were excluded from the sample. See glossary under "private institution" for full definition.

Figure 3.1. Average prose, document, and quantitative literacy scores of U.S. adults in 2- and 4-year colleges

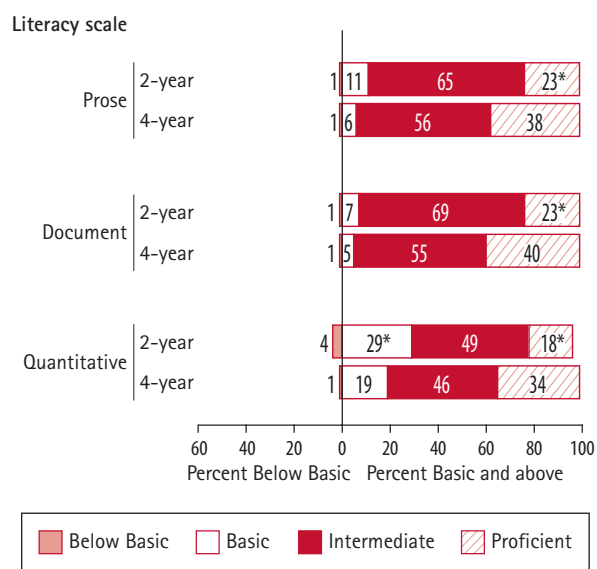


* Significantly different from students in 4-year institutions.
Source: 2003 National Survey of America's College Students.

literacy of adults in the nation, the literacy of college students also varied across 2- and 4-year institutions.

The average prose, document, and quantitative literacy of students in 4-year institutions was significantly higher than the literacy of students enrolled in 2-year colleges. The percentage of students with *Proficient* literacy was also higher among students in 4-year colleges and universities compared with students in 2-year colleges.

Figure 3.2. Percentage of U.S. adults in 2- and 4-year colleges in each prose, document, and quantitative literacy level



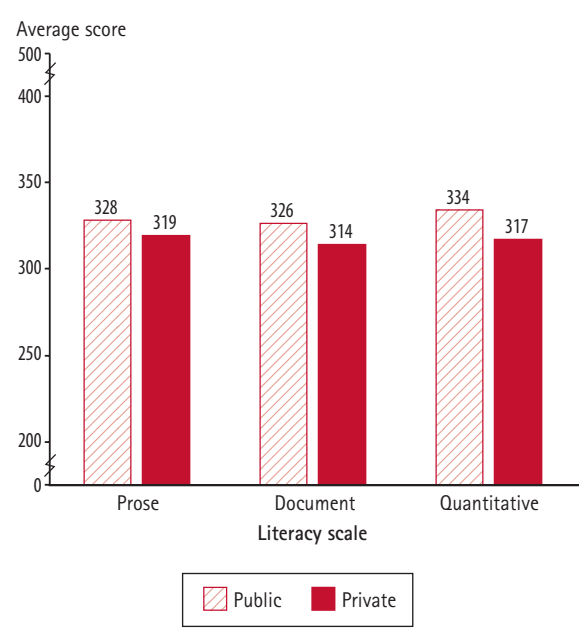
* Significantly different from students in 4-year institutions.
Note: Percentages may not add to 100 because of rounding.
Source: 2003 National Survey of America's College Students.

Public Versus Private

The average prose, document, and quantitative literacy of students in 4-year public colleges was not significantly different from the average literacy of students enrolled in 4-year private colleges (Figure 3.3).² The comparable literacy of students in public and private 4-year institutions is likely a reflection of the heterogeneity of private colleges. Although many of the most elite colleges and universities in the country are private, these institutions represent a small proportion of the nation's private postsecondary institutions. A measure such as institutional selectivity may be more appropriate for discerning differences between types of 4-year institutions.

²No 2-year private colleges participated in the NSACS, so a similar comparison could not be performed for these institutions.

Figure 3.3. Average prose, document, and quantitative literacy scores for U.S. adults in 4-year colleges, by public and private institutions



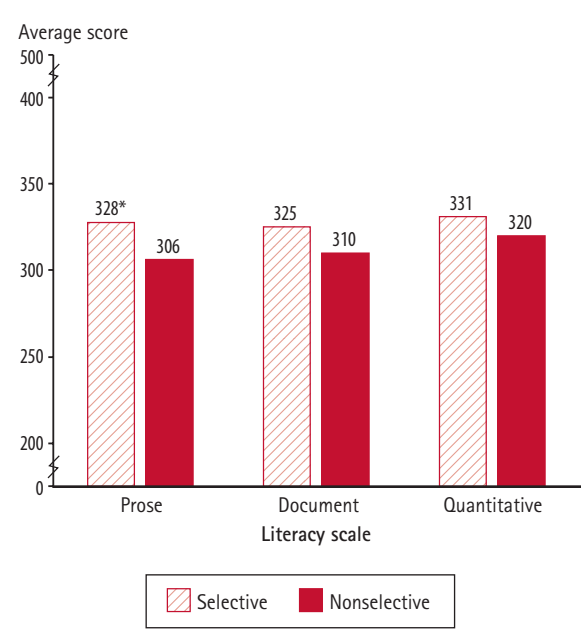
Source: 2003 National Survey of America's College Students.

Institutional Selectivity

Students in selective 4-year colleges had higher average prose literacy than their peers in nonselective institutions, though differences in average document and quantitative literacy between students in selective and nonselective institutions were not significant (Figure 3.4). Students in selective 4-year colleges had prose literacy scores more than 22 points higher than students in nonselective 4-year institutions.³

³Differences in document and quantitative literacy between students in selective and nonselective 4-year colleges were likely not significant because of the large standard errors associated with the estimates.

Figure 3.4. Average prose, document, and quantitative literacy scores for U.S. adults in 4-year colleges, by institutional selectivity



* Significantly different from nonselective institutions.
Source: 2003 National Survey of America's College Students.

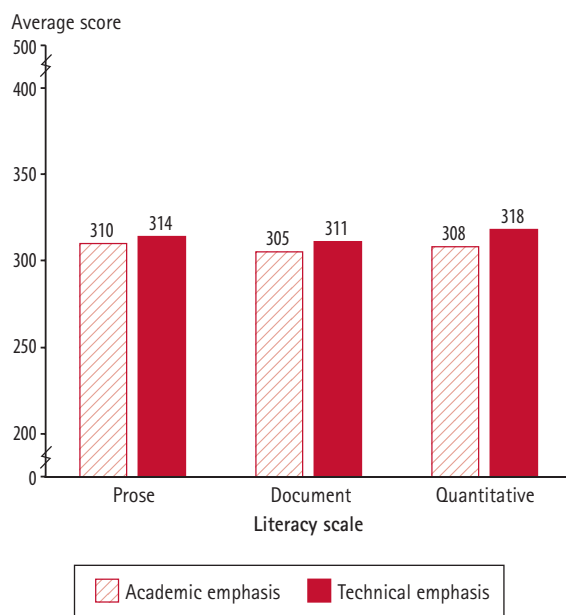
Curricular Emphasis

Two-year colleges across the country vary in the curricula they offer students. Some 2-year institutions emphasize academic content, preparing students to transfer to 4-year colleges once they earn their associate's degree. Other 2-year institutions focus more on job preparation and technical degrees, providing students with the skills and certification they need to enter the labor force immediately after graduation.

Despite the colleges' different curricular emphases,⁴ the average prose, document, and quantitative literacy of students in academically and technically oriented 2-year colleges did not significantly differ from one another (Figure 3.5). The results demonstrate the comparable literacy of students in 2-year colleges, regardless of the type of institution they attend.

⁴See glossary under "curricular emphasis" for a definition of this variable.

Figure 3.5. Average prose, document, and quantitative literacy scores for U.S. adults in 2-year colleges, by curricular emphasis of institution



Source: 2003 National Survey of America's College Students.

Chapter Highlights

This chapter examined the relationship between the literacy of U.S. college students and institutional context. The results revealed the following:

- Students in 4-year colleges had higher average prose, document, and quantitative literacy than their peers in 2-year colleges. The percentage of students with *Proficient* literacy in 4-year institutions was also higher than the percentage of students with *Proficient* literacy in 2-year institutions.
- The literacy of students in 4-year public institutions was comparable to the literacy of students in 4-year private institutions.
- Prose literacy was higher for students in selective 4-year colleges, though differences between selective and nonselective 4-year colleges for document and quantitative literacy could not be determined because of the sample size.
- The literacy of students in 2-year institutions did not differ on the basis of the academic or technical curricular emphasis of the institution.

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a b c d e f g h i j k l m n o p q r s
l m n o p q r s t u v w x y z a b c
o p q r s t u v w x y z a b c d
f g h i j k l m n o p q r s t u v w x
c d e f g h i j k l m n o p q r s t u
n o p q r s t u v w x y z a b c d e f
w x y z a b c d e f r s t u v w x y
r s t u v w x y z a b c d e f g h i
u v w x y j k l m n o p q r s t u v
o p q r s t u v w x y z a b c d e f
y z a b c d e f g h i j k l m n o p
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CHAPTER 4 efg hij

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Introduction

Chapters 4 and 5 examine the relationship between the characteristics of students in 2- and 4-year institutions and their prose, document, and quantitative literacy. This chapter focuses specifically on the background of students before they enter college, based on information about their 1) country of birth, 2) personal/parental income, 3) financial dependence, 4) parents' education, 5) years elapsed between high school graduation and entrance into college, and 6) the country in which students attended high school. Along with a variety of other factors, these characteristics influence the opportunities for postsecondary education available to students as well as the types of institutions they attend.

Country of Birth

Students who completed the NSACS assessment were asked to record their country of birth. For analysis purposes, this information was coded into one of two categories: U.S.-born or foreign-born. Among students in 2- and 4-year institutions, average prose, document, and quantitative literacy was higher for U.S.-born students than for their foreign-born peers (Figure 4.1). The percentage of U.S.-born students in 4-year colleges and universities with *Proficient* prose and document literacy was also greater than the percentage of foreign-born students with *Proficient* literacy (Figure 4.2).

An additional comparison of interest is between the performance of foreign-born students in 4-year colleges and that of U.S.-born students in 2-year institutions. With the exception of prose literacy, differences between the two groups of students were not significant, indicating comparable literacy between foreign-born students in 4-year colleges and U.S.-born students in 2-year institutions.

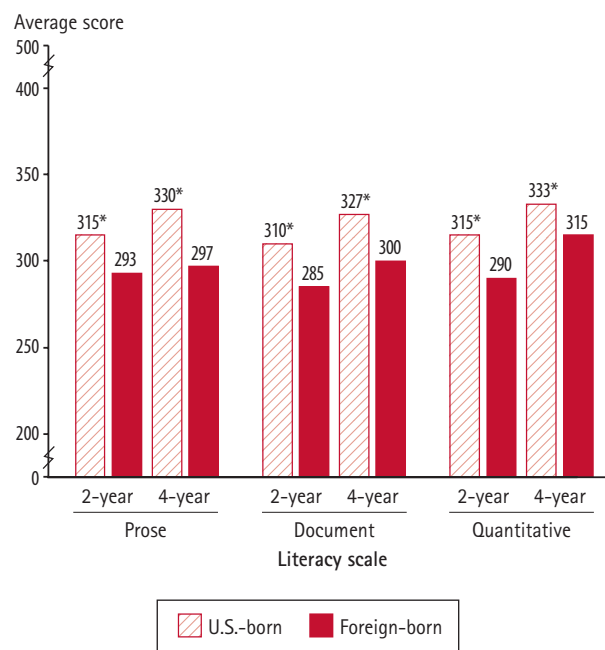
Personal/Parental Income

College students come from a variety of economic backgrounds, with some students supporting themselves and others relying on their families to pay for tuition and other necessities.¹ Despite variations in income, most differences in the literacy of students across income groups were not significant (Table 4.1).

¹Students were asked whether they were financially independent or whether they were financially dependent on their parents. Depending on their answer, they were asked to report either their parents' household income or their personal income. The financial information was combined to create a single measure of personal or parents' household income.

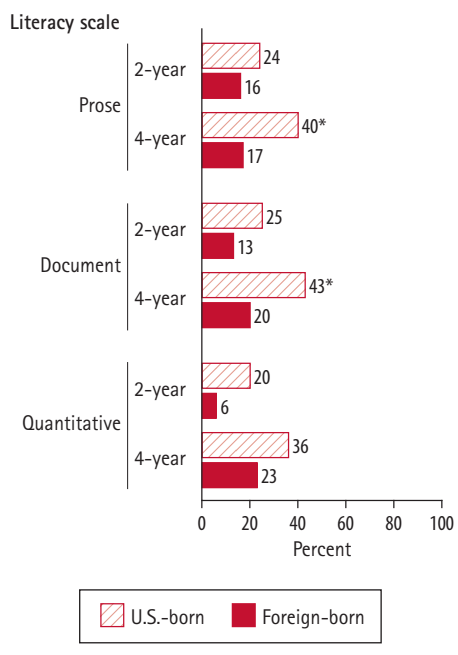
Among students in 4-year institutions, for example, the only significant differences were in the lowest and highest income categories. That is, students in the highest income group (either their personal income or the income of their parents) had higher prose and document literacy than students in the lowest

Figure 4.1. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by country of birth



* Significantly different from foreign-born students.
 Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.
 Source: 2003 National Survey of America's College Students.

Figure 4.2. Percentage of U.S. adults in 2- and 4-year colleges with *Proficient* prose, document, and quantitative literacy, by country of birth



* Significantly different from foreign-born students.
 Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.
 Source: 2003 National Survey of America's College Students.

income group. The document literacy of students in 2-year colleges from the second highest income group (\$75,000 to \$99,999) was also higher than the literacy of students in 2-year institutions from the lowest income group.

Financial Dependence

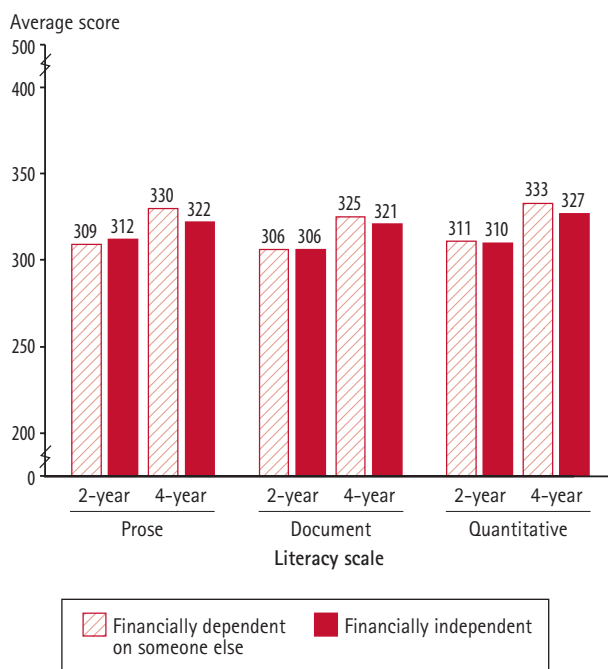
Combining the two income measures (personal and parents' income) into a single category obscures an important distinction between students: those who are dependent on their parents for financial support and those who are financially independent. Many students who enter 4-year institutions directly after high school rely on their parents to pay their college costs. In contrast, older students returning to college after taking time off must make their own financial commitment to their education. Despite the different characteristics of the two groups, the average literacy of students in 2- and 4-year institutions did not vary on the basis of a student's financial dependence or independence (Figure 4.3).

Table 4.1. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by income

Income	Prose		Document		Quantitative	
	2-year	4-year	2-year	4-year	2-year	4-year
\$0-\$9,999	314	313	299	312	305	321
\$10,000-\$19,999	310	329	302	325	306	330
\$20,000-\$29,999	307	328	299	318	302	342
\$30,000-\$39,999	316	322	307	329	310	343
\$40,000-\$49,999	324	325	304	333	318	327
\$50,000-\$59,999	321	339*	306	317	323	345*
\$60,000-\$74,999	311	334*	329*	320	317	328
\$75,000-\$99,999	322	326	328*	324	328	336
\$100,000+	308	336*	306	338*	323	333

* Significantly different from students with an income between \$0 and \$9,999.
 Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this table. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.
 Source: 2003 National Survey of America's College Students.

Figure 4.3. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by financial dependence



Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.
Source: 2003 National Survey of America's College Students.

Parents' Education

A long tradition of research conducted by sociologists has demonstrated the intergenerational effects of education.² Parents “pass down” their educational attainment to their children, influencing the occupational, educational, and economic opportunities available to their offspring. Results from the NSACS study illustrate intergenerational effects for literacy as well, at least among students enrolled in 2- and 4-year colleges and universities.

Among students in 4-year institutions, for example, the literacy of children whose parents completed college or attended graduate school was significantly higher than the literacy of students whose parents stopped their education after completing a GED or graduating high school (Table 4.2).

The pattern of results for parents' education among students in 2-year institutions was similar to that of their peers in 4-year institutions. Across the prose, document, and quantitative literacy scales, children of parents who were college graduates and/or had attended graduate school had higher literacy than

²Blau, P. and Duncan, O. (1967). *The American Occupational Structure*. New York: Wiley; Hauser, R.M. (1973). “Socioeconomic Background and Differential Returns to Education.” In L.C. Solmon and P.J. Taubman (Eds.), *Does College Matter? Some Evidence on the Impacts of Higher Education* (pp. 129–145). New York: Academic Press.

Table 4.2. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by parents' education

Parents' education	Prose		Document		Quantitative	
	2-year	4-year	2-year	4-year	2-year	4-year
Less than/some high school	290	~	279*	~	288*	~
High school graduate/GED	306	315	303	306	305	318
Vocational/trade/business school	317	330	306	337*	313	337
Some college	312	317	305	321	321*	321
Associate's/2-year degree	313	324	316	330*	311	331
College graduate	320*	328*	319*	323*	314	335*
Graduate studies/degree	323*	340*	312	330*	321*	339*

* Significantly different from high school graduate/GED.

~ Literacy score could not be estimated because of small sample size.

Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this table. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

Source: 2003 National Survey of America's College Students.

children of parents with a GED or a high school diploma. Moreover, with one exception, literacy was lowest in 2-year institutions for students whose parents never obtained a GED or graduated high school.³

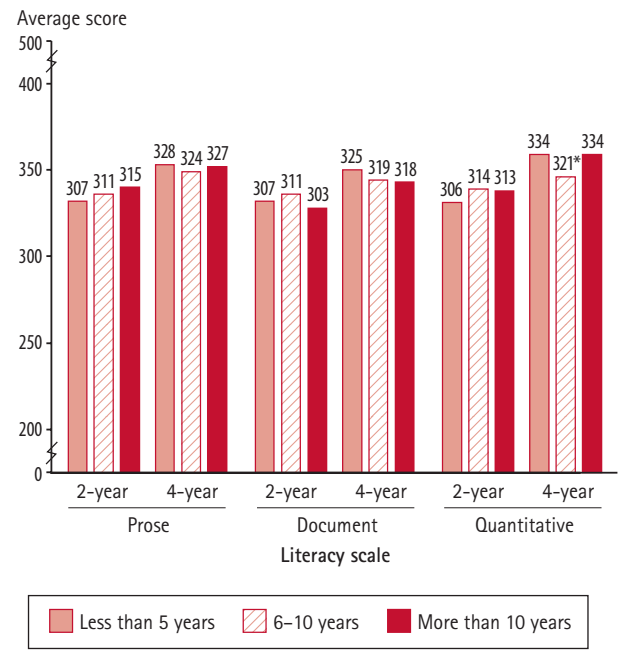
Years Since High School Graduation

Students enrolled in college follow a variety of paths to higher education; some start their studies directly after graduating high school, whereas others resume their education later in life after taking time to pursue work or a family. Students reported the number of years between their high school graduation and entrance into college, providing one measure of the different life experiences of college students.

The results indicate that the literacy of college students does not vary on the basis of the number of years that have elapsed since the students enrolled in higher education. Among students in 4-year institutions, the only significant difference in average literacy was on the quantitative scale between recent high school graduates (less than 5 years) and students who graduated from high school 6 to 10 years ago (recent graduates had higher average quantitative literacy). Other differences between students in 4-year institutions, as well as for students in 2-year institutions, were not significant (Figure 4.4).

³Differences in prose literacy between the children of parents who had less than a high school degree and the children of parents with a GED/high school degree were not significant.

Figure 4.4. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by years since high school graduation



* Significantly different from students who graduated from high school less than 5 years ago.

Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

Source: 2003 National Survey of America's College Students.

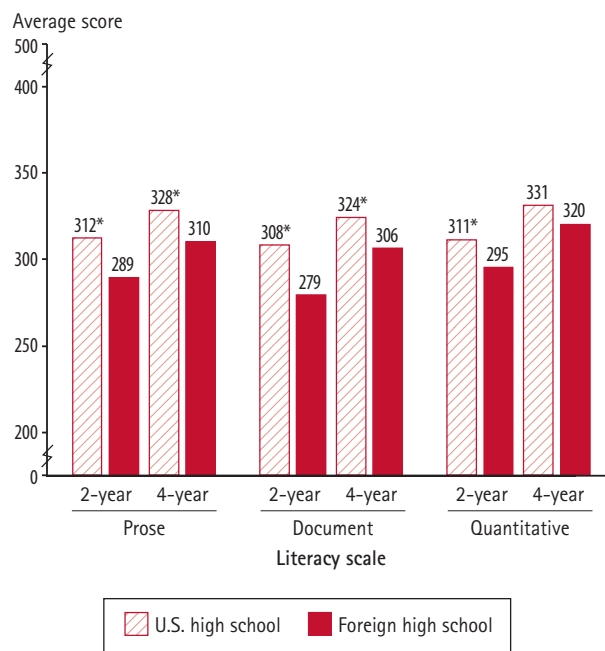
Country of High School Diploma

Students enter U.S. institutions of higher learning with different educational backgrounds, some obtaining their high school diploma from U.S. schools and others graduating from foreign schools. Among students in 4-year institutions, the prose and document literacy of U.S. high school graduates was higher than the literacy of their peers who graduated from foreign high schools. Similarly, average literacy across the three scales was higher for students in 2-year institutions who graduated from U.S. high schools compared with the literacy of students who graduated from foreign schools (Figure 4.5).

Although lower than the literacy of their peers in 4-year institutions, the literacy of students who graduated from foreign high schools was higher than the literacy of the nation's adults. Likewise, the prose literacy of students from foreign high schools in 2-year institutions was also higher than the literacy of all U.S. adults (differences between the two groups for document and quantitative literacy were not significant). Thus, although the literacy of college students who graduated from foreign high schools may not reach parity with that of students from U.S. high schools, students from foreign high schools compare favorably with the nation's adults.⁴

⁴Results for all adults are not shown but are available in Kutner, M., Greenberg, E., and Baer, J. (2005). *A First Look at the Literacy of America's Adults in the 21st Century* (NCES 2006-470). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

Figure 4.5. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by country of high school diploma



* Significantly different from students who graduated from a foreign high school.

Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

Source: 2003 National Survey of America's College Students.

Chapter Highlights

This chapter examined the relationship between literacy and selected background characteristics of college students. The results indicated the following:

- The literacy of U.S.-born students was higher than the literacy of their foreign-born peers in 2- and 4-year colleges, though differences in document and quantitative literacy between U.S.-born students in 2-year institutions and foreign-born students in 4-year institutions were not significant.
- Students in 4-year colleges with the highest levels of personal or family income had higher prose and document literacy than students with the lowest levels of personal or family income. Differences based on financial dependence were not significant between students.
- Children of adults who graduated college or attended graduate school had higher literacy than children of adults who failed to graduate high school or stopped their schooling after receiving a high school diploma or a GED.
- Students who enrolled in college immediately after high school graduation had literacy comparable to that of adults who took time off between high school graduation and college.
- Students who graduated from U.S. high schools had higher literacy than graduates from foreign high schools, though the literacy of students from foreign schools was similar to or greater than the literacy of all U.S. adults.

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Introduction

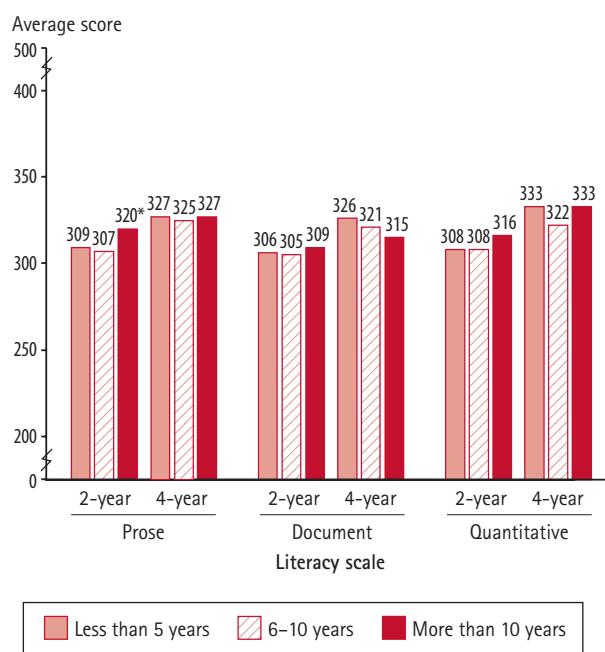
This chapter explores the relationship between literacy and a series of measures that capture the experiences of students in college. The previous chapters examined how the literacy of U.S. college students is influenced by a variety of factors outside of college, from demographic characteristics to the educational attainment of students' parents. The significance of these factors does not imply that literacy is fixed by the time students graduate high school, however.

Once students enter college, their choice of major, scholastic performance, and ability to dedicate time to their studies may continue to shape their literacy. In turn, students' college experiences, as well as their experiences after college, may also be influenced by their literacy. This chapter examines the reciprocal relationship between literacy and college experience across different aspects of postsecondary institutions, focusing not only on academic issues, but also on student engagement in studies and college life.

Length of Time in College

Although many students are able to attend college full time and graduate within 4 or 5 years of first enrollment, others must extend their stay in college as they manage nonacademic responsibilities. Among students in 4-year institutions, average literacy did not vary by the length of time a student had spent in college (Figure 5.1). Within 2-year institutions, differences in average document and quantitative literacy were also not significant when considered in terms of the length of time since first enrollment. For prose literacy, however, the average literacy of students who started college 10 or more years ago was significantly higher than the literacy of students who had been in college for less than 5 years.

Figure 5.1. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by length of time in college



* Significantly different from students who have been in college less than 5 years.

Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

Source: 2003 National Survey of America's College Students.

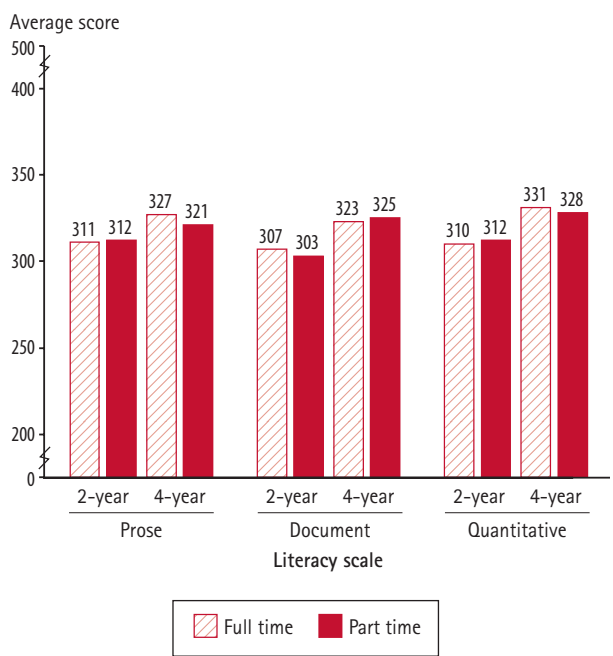
Enrollment Status

Although students who go directly from high school to college may be likely to enroll in college full time, older students with careers and families may be able to attend only part time. Results from the NSACS study reveal that the literacy of students in 2-year and 4-year institutions did not differ on the basis of enrollment status (Figure 5.2).

Number of Postsecondary Institutions Attended

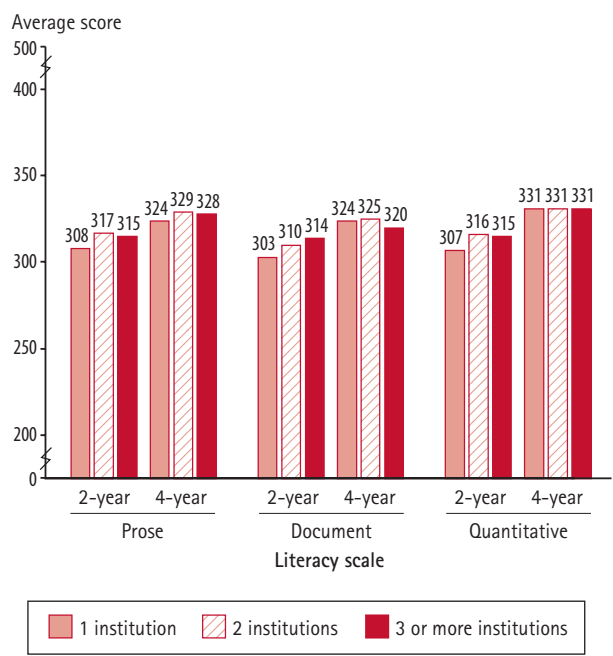
Enrollment in multiple postsecondary institutions may delay the time it takes for a student to obtain a degree, as well as impose extra costs and disrupt the continuity of a student's studies. Although students who switch colleges may face challenges, the average literacy of students in 2- and 4-year institutions did not differ on the basis of the number of institutions they attended (Figure 5.3).

Figure 5.2. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by enrollment status



Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.
Source: 2003 National Survey of America's College Students.

Figure 5.3. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by number of institutions attended



Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.
Source: 2003 National Survey of America's College Students.

Enrollment in Remedial Math or English

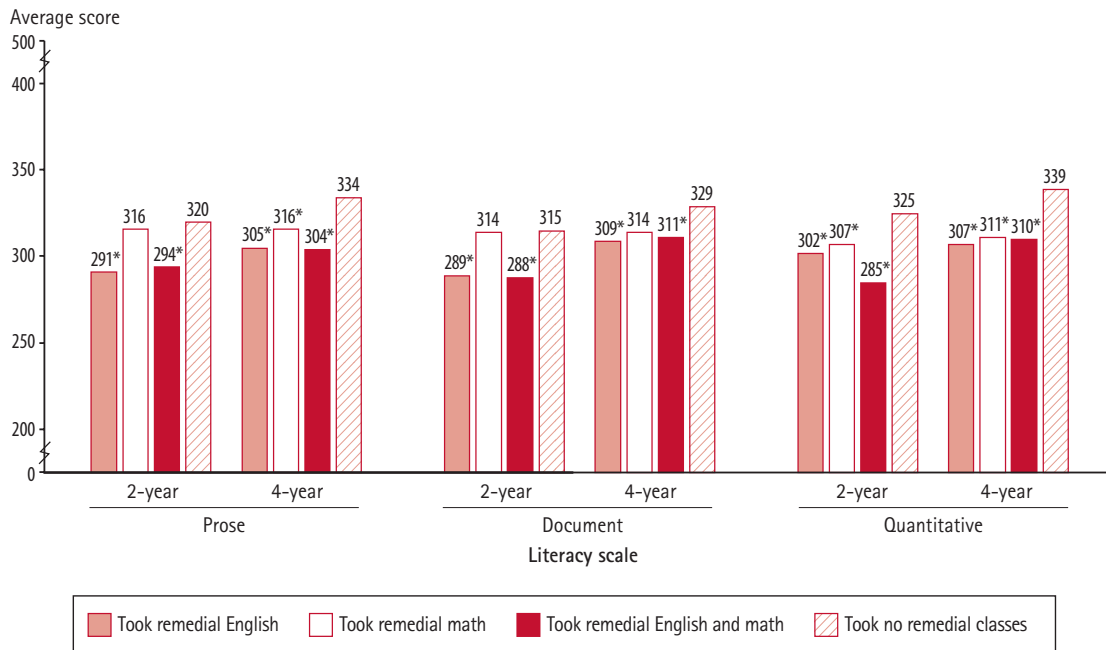
Remedial math and English courses are designed to help students who struggle academically catch up to their peers and gain the basic knowledge they need for college work. Results from the NSACS illustrate the differences not only between students who completed remedial courses and those who did not, but also between students who took different types of remedial classes.

For example, among students in 2-year institutions, the average prose and document literacy of students who completed a remedial English class or both a remedial English and a remedial math class was significantly lower than the average literacy of students who never took a remedial class as well as those students who completed only a remedial math class. Although students who took only a remedial math class had lower quantita-

tive literacy than their peers who never took any type of remedial class, differences in prose and document literacy between the two groups were not significant (Figure 5.4).

Similar to students in 2-year colleges, students in 4-year institutions who took either a remedial English or math class had lower quantitative literacy than their peers who did not take a remedial course. Unlike in 2-year colleges, however, completion of a remedial math course among students in 4-year institutions was not tied exclusively to lower quantitative literacy. Students in 4-year colleges who took only a remedial math class also had lower prose literacy than their peers who did not take a remedial math class. As in 2-year institutions, differences in document literacy between students who took a remedial math class and students who did not take remedial math were not significant.

Figure 5.4. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by enrollment in remedial math or English



* Significantly different from students who took no remedial classes.

Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

Source: 2003 National Survey of America's College Students.

The results suggest that students in 2-year colleges who are required to take only remedial math classes struggle specifically with quantitative literacy. In contrast, students who complete remedial English classes encounter difficulties with all three domains of literacy. Unlike in 2-year colleges, the average literacy of students in 4-year institutions did not differ on the basis of the content of remedial classes.

Major Course of Study

Different academic majors require different sets of skills, so the literacy of students may vary on the basis of their field of study. For students in 4-year colleges, average prose, document, and

quantitative literacy was similar across most majors. One exception was for math, science, and engineering majors, who had higher average literacy than business majors across the literacy scales. The document and quantitative literacy of math, science, and engineering majors was also higher than the document and quantitative literacy of education majors (Table 5.1).

Like students in 4-year colleges, students in 2-year institutions had similar literacy regardless of major. Differences in average document literacy across majors were not significant. On the prose scale, the literacy of students studying the fine arts or humanities was higher than the literacy of students studying the social sciences.

Table 5.1. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by academic major

Academic major	Prose		Document		Quantitative	
	2-year	4-year	2-year	4-year	2-year	4-year
Business management	307	321*	302	316*	312	328*
Math, science, engineering	315	335	310	337	313	347
Education	307	320	311	309*	306	322*
Fine arts and humanities	319	331	306	329	311	321*
Health	315	316*	315	321	316	326
Social sciences	304	327	296	318*	301	332
Vocational/technical/other	314	~	294	~	305	~

* Significantly different from students majoring in math, science, or engineering.

~ Literacy score could not be estimated because of small sample size.

Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this table. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

Source: 2003 National Survey of America's College Students.

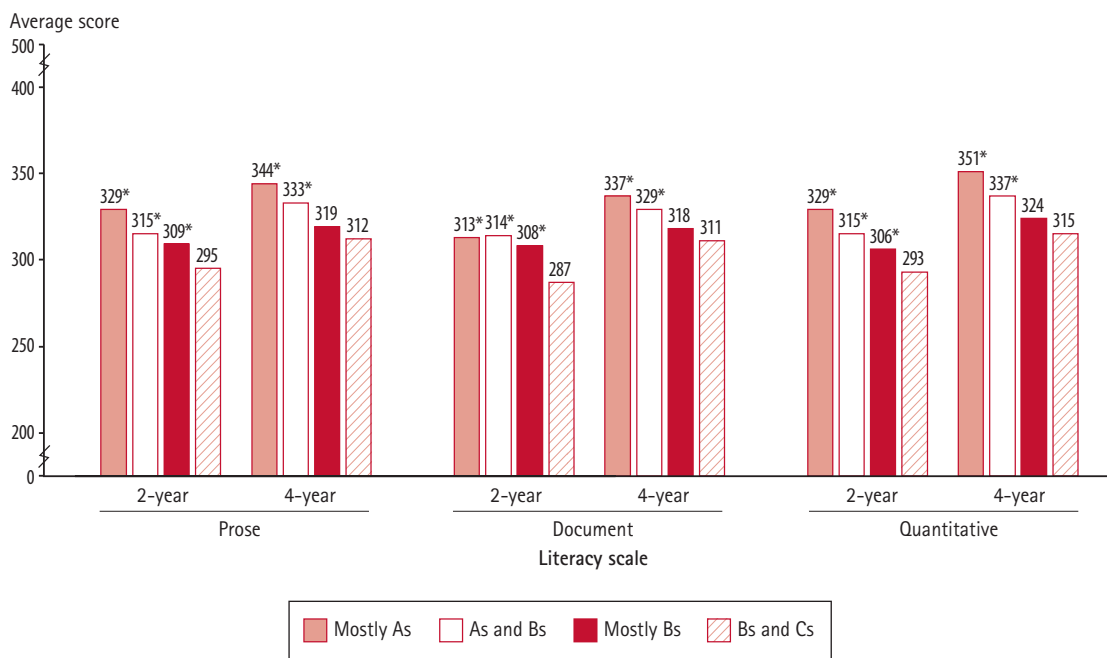
Grade Point Average

Students who participated in the NSACS were asked to report their grade point average (GPA) during their course of time in college. Among students in 4-year colleges, the average literacy of students with a GPA greater than 3.24 (equivalent to As and Bs and above) was significantly higher than the literacy of students who received Bs and Cs. Students in 2-year institutions with a GPA greater than 3.24 also had higher literacy than their peers with Bs and Cs across the three literacy scales. Unlike in 4-year institutions, however, differences in literacy between

students at the very top of the GPA scale (mostly As) and the next lowest category (As and Bs) were significant for the prose and quantitative scales (Figure 5.5).

The distribution of students across literacy levels also varied depending on students' grades. For both 2- and 4-year colleges, the percentage of students with *Proficient* prose and quantitative literacy who had GPAs above 3.74 was significantly higher than the percentage of students with *Proficient* prose and quantitative literacy who received Bs and Cs (Figure 5.6).

Figure 5.5. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by grade point average

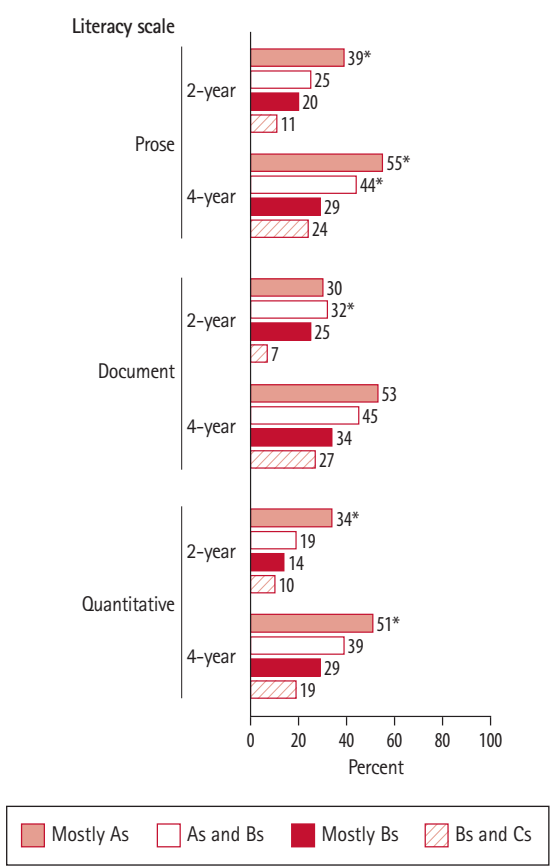


* Significantly different from students who averaged Bs and Cs.

Note: Literacy scores for students who reported grade point averages lower than Bs and Cs could not be estimated because of small sample sizes. Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

Source: 2003 National Survey of America's College Students.

Figure 5.6. Percentage of U.S. adults in 2- and 4-year colleges with *Proficient* prose, document, and quantitative literacy, by grade point average



* Significantly different from students who averaged Bs and Cs.
 Note: Literacy scores for students who reported grade point averages lower than Bs and Cs could not be estimated because of small sample sizes. Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.
 Source: 2003 National Survey of America's College Students.

Expectations for Postsecondary Education

As competition and the skills required for high-paying jobs increase, many students elect to pursue education beyond a bachelor's degree. Among students in 4-year institutions, average document and quantitative literacy was highest for students who expected to obtain a first professional degree (e.g., law, medicine, or dentistry). With the exception of students who expected to earn a doctoral degree, the average prose literacy of students looking toward a first professional degree was also higher than the average prose literacy of students who did not anticipate completing additional education beyond their bachelor's degree as well as those who expected to pursue a master's degree (Table 5.2).

In 2-year institutions, literacy was generally lowest for students who did not intend to pursue additional education after earning their associate's degree.

Engagement in Academic and Social Activities

The NSACS background questionnaire asked students a series of questions drawn from the National Survey of Student Engagement (NSSE) and the Community College Survey of Student Engagement (CCSSE), annual studies of student participation in college academic and social activities.¹ NSSE and CCSSE provide information about the engagement of students not only in their classes, but also with their faculty, peers, and campus community. Including NSSE and CCSSE measures as part of the NSACS helps illustrate the relationships between literacy and the context of postsecondary education.

¹Additional information about NSSE and CCSSE can be found at www.indiana.edu/~nsse/ and www.ccsse.org.

NSSE and CCSSE questions were combined into three scales measuring student academic and social engagement (details about scale construction are in Appendix D):

- Emphasis on Analytic Coursework
- Faculty Interactions Outside of Class
- Institutional Support

The Emphasis on Analytic Coursework scale captures the degree to which students are asked to synthesize ideas, apply concepts, and analyze issues as part of their classes. The Faculty Interactions Outside of Class scale measures how often students talk to their instructors outside of class, whether about course material or other topics. The third scale, Institutional

Table 5.2. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by expectations for postsecondary education

Expectations for postsecondary education	Prose		Document		Quantitative	
	2-year	4-year	2-year	4-year	2-year	4-year
Associate's degree	297	—	287	—	299	—
Bachelor's degree	311*	325	305*	319	313*	329
Master's degree or equivalent	318*	326	314*	323	314*	329
Doctoral degree	309	325	312*	319	305	326
First professional degree	325*	343**	315*	342**	315	361**

— Not applicable.

* Significantly different from students who did not expect to complete education beyond an associate's degree.

** Significantly different from students who did not expect to complete education beyond a bachelor's degree.

Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this table. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

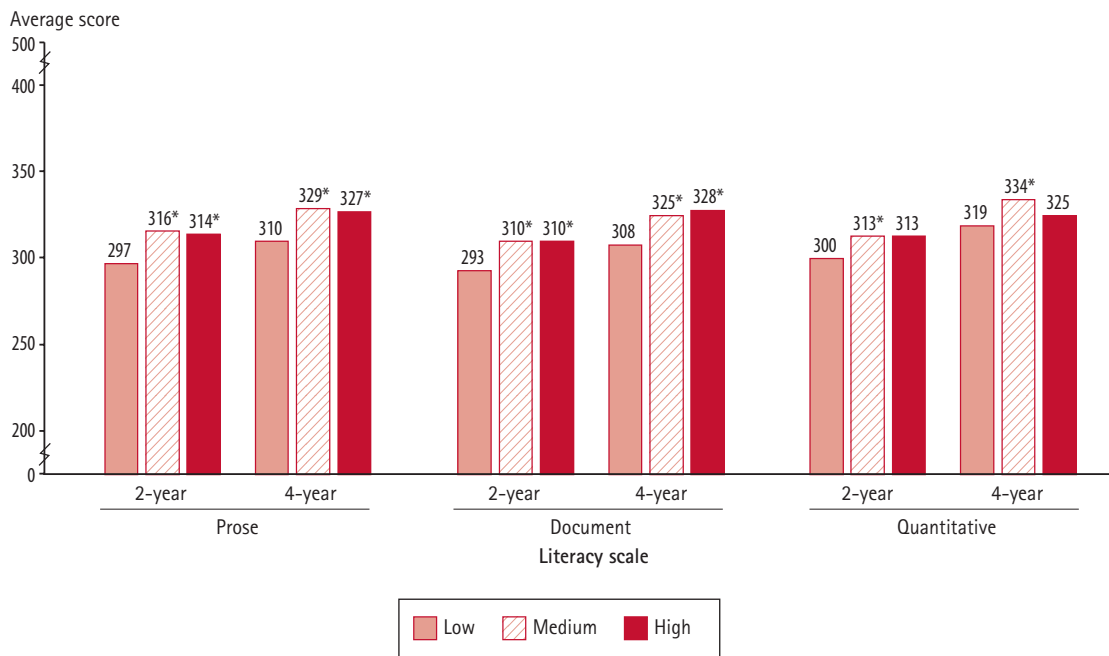
Source: 2003 National Survey of America's College Students.

Support, assesses the perceptions of students of how well their college or university helps them succeed both inside and outside the classroom.

Results from the NSACS revealed a strong relationship between analytic coursework and the literacy of students in both 2- and 4-year institutions. Students in courses that required analytic thinking skills had higher prose and document literacy than students enrolled in courses with a low emphasis on analytic

thinking (Figure 5.7). Among students in 4-year colleges and universities, document literacy scores were 20 points higher for students who indicated a "High" degree of analytic emphasis compared with their peers in classes with a "Low" emphasis. Students in classes that stressed analytic thinking were called on to complete a variety of complex tasks, including making judgments about the strength of arguments, applying theories to practical problems, and synthesizing ideas to create new interpretations of subject matter.

Figure 5.7. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by emphasis on analytic coursework



*Significantly different from students in classes that required low amounts of analytic thinking.

Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

Source: 2003 National Survey of America's College Students.

In contrast to the Emphasis on Analytic Coursework scale, the prose and quantitative literacy of students in 4-year institutions *decreased* the more they visited faculty outside of class (Figure 5.8). Students who met with faculty frequently had prose literacy scores 16 points lower than students who visited their instructors infrequently. Among students in 2-year colleges, quantitative literacy was also lowest for students who frequently met with faculty after class.

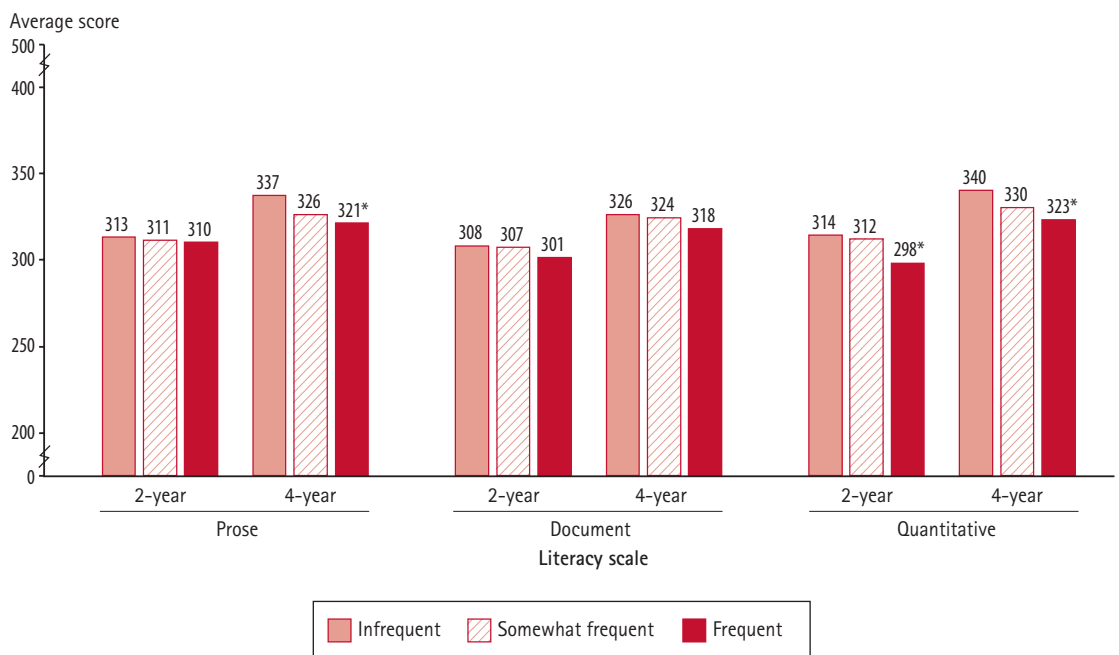
Whereas students who excel academically may seek out their instructors after class to continue discussions, this finding suggests that these students are in the minority. Instead, faculty

may spend much of their time outside of class with students who struggle with course material.

Differences in literacy across students in 2- and 4-year institutions that were based on their perceptions of institutional support were not significant (Figure 5.9).

When examining the quality of relationships with faculty and students (Table 5.3), average prose and quantitative literacy was highest for students who reported that they had friendly relationships with faculty compared with somewhat friendly relationships.

Figure 5.8. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by frequency of faculty interactions outside of class

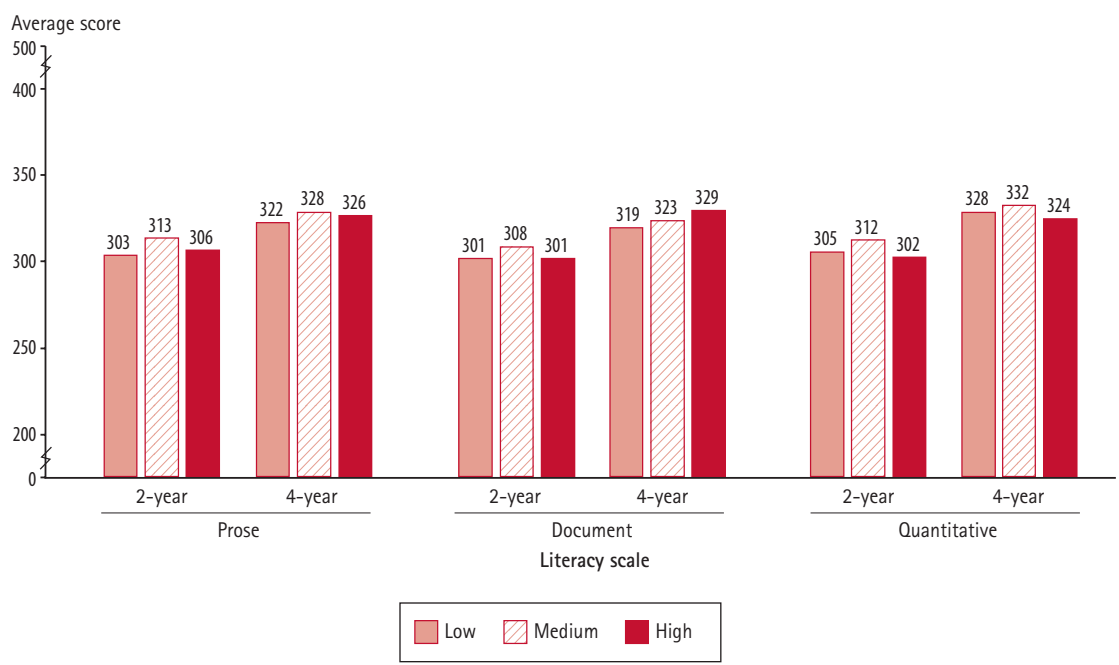


*Significantly different from students who met with faculty infrequently.

Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.

Source: 2003 National Survey of America's College Students.

Figure 5.9. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by institutional support



Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this figure. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.
 Source: 2003 National Survey of America's College Students.

Table 5.3. Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by quality of relationships with faculty and students

Literacy scale and quality of relationships with faculty and students	2-year			4-year		
	Unfriendly	Somewhat friendly	Friendly	Unfriendly	Somewhat friendly	Friendly
PROSE						
Quality of relationships with faculty	~	292*	314	322	320	328
Quality of relationships with other students	~	309	311	~	325	328
DOCUMENT						
Quality of relationships with faculty	~	296	309	321	323	324
Quality of relationships with other students	~	314	306	~	321	324
QUANTITATIVE						
Quality of relationships with faculty	~	294*	312	334	323	332
Quality of relationships with other students	~	319	309	~	320	332

* Significantly different from students who had friendly relationships with faculty and students.
 ~ Literacy score could not be estimated because of small sample size.
 Note: Because of the large number of possible statistical comparisons, not all statistically significant differences are indicated in this table. The corresponding table in Appendix C has detailed standard errors that can be used to calculate additional tests of statistical significance.
 Source: 2003 National Survey of America's College Students.

Chapter Highlights

This chapter examined the relationship between literacy and a variety of student college experiences. Although academics are at the core of postsecondary education, a student's college experience is also influenced by the student's engagement with faculty, peers, and community. Analyses of the NSACS data revealed the following:

- The average literacy of U.S. college students was generally the same regardless of how long students had been in college, their enrollment status, or the number of postsecondary institutions they attended.
- Students in 2-year colleges who took remedial math classes struggled specifically with their quantitative literacy, whereas students who took remedial English classes struggled with all three domains of literacy.
- Students in 4-year institutions who took remedial English classes also had lower prose, document, and quantitative literacy than students who never completed a remedial course.
- With only a few exceptions, average literacy did not differ significantly across academic majors.
- Students with higher grade point averages (GPAs) generally had higher literacy than students with lower GPAs.
- Among students in 4-year colleges, document and quantitative literacy was highest for students who expected to earn a first professional degree. For students in 2-year institutions, literacy was lowest for students who reported that they would stop their education after obtaining an associate's degree.
- Prose and document literacy was higher for students in 2- and 4-year institutions enrolled in classes that emphasized analytic thinking, such as evaluating the strength of arguments and applying theories to practical problems or new situations. In contrast, prose and quantitative literacy was lower for students in 4-year colleges and universities who frequently met with their instructors outside of class.

q r s t u v w x y z a b c d e f g h
a b c d e f g h i j k l m n o p q r s
l m n o p q r s t u v w x y z a b
k l m n o p q r s t u v w x y z a
a b c d e f g h i j k l m n o p q r s
l m n o p q r s t u v w x y z a b c
p q r s t u v w x y z a b c d e f g
z a b c d e f g h i j k l n o p q r s
d e f g h i j l m n o p q r s t u v
o p q r s t u v w x y z a b c d e f
y z a b c d e f g h i j k l m n o p
i j k l m n o p q r s t u v w x y z
s t u v w x y z a b c d e f g h i j
c d e f g h i j k l m n o p q r s t u
n o p q r s t u v w x y z a b c d e
x y z a b c d e f g h i j k l m n o

i j k l m n o p q r s t u v w x y z

s t u v w x y z a b c d e f g h i j k

c d **A P P E N D I X** e **A** f g h i j

b c l m n o p q r s t u v w x y z

s t u v w x y z a b c d e f g h i j k

c d e f g h i j k l **s a m p l e** m n o

h i j k l m n o p q r s t u v w x y

t u v w x y **q u e s t i o n s** z a b c

w x y z a b c d e f g h i j k l m n

g h i j k l m n o p q r s t u v w x

q r s t u v w x y z a b c d e f g h

a b c d e f g h i j k l m n o p q r

k l m n o p q r s t u v w x y z a b

v w x y z a b c d e f g h i j k l m

e f g h i j k l m n o p q r s t u v w

p q r s t u v w x y z a b c d e f g

Prose Literacy Question

Refer to the article on the next page to answer the following question.

According to the brochure, why is it difficult for people to know if they have high blood pressure?

Correct answer

Any statement such as the following:
 Symptoms are not usually present
 High blood pressure is silent

Percentage of U.S. adults in college and the nation who answered the question correctly, 2003

2-year colleges	4-year colleges	All adults
95 (1.7)*	97 (1.2)*	74 (1.2)

* Significantly different from all adults.
 Note: Standard errors are in parentheses.
 Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

TOO MANY BLACK ADULTS DIE FROM THE EFFECTS OF HIGH BLOOD PRESSURE

DID YOU KNOW?

More than one out of every four Black adults has high blood pressure, according to a two-year survey by Public Health Service in the 1960's. Other studies show as many as one out of three Black adults has high blood pressure.

High blood pressure is the most common chronic disease treated by practitioners in the Black community.

More Black people die as a result of high blood pressure than any other disease.

For every Black person who dies of sickle-cell anemia, at least 100 others die from the effects of high blood pressure.

The rate of death from the effects of high blood pressure for Black people is nearly one and one-half times the rate for White people.

High blood pressure, along with cigarette smoking, contributes greatly to the apparent increased number of heart attacks among Black adults.

If high blood pressure is controlled, strokes, heart attacks and kidney disease can be substantially reduced.

YES, HIGH BLOOD PRESSURE CAN BE TREATED... AND CONTROLLED.

WHAT YOU CAN DO

Have your blood pressure checked regularly

Unfortunately, high blood pressure is a silent killer and crippler. At least half of the people who have high blood pressure don't know it because symptoms usually are not present. The only way you can be sure is to have the doctor check your blood pressure. You should have your blood pressure checked at least once a year, especially if:

(1) you are Black, (2) if you are over 40, (3) if members of your family or close relatives have had high blood pressure or the complications of high blood pressure (stroke, heart attack, or kidney disease), or (4) if you have frequent headaches, dizziness, or other symptoms that may occasionally be related to high blood pressure.

Follow your doctor's instructions

High blood pressure can't be cured, but it can be kept under control. Control means keeping your blood pressure as close to normal as possible. That's very important to you — it can prevent a crippling stroke or other serious illness in the future.

The doctor will find a way to control your blood pressure that's most comfortable for you. Then it will be up to you — to take the medicine and follow the prescribed diet, to follow the instructions carefully and to come back regularly for checkups.

Yes, high blood pressure can be controlled, but only if *you* cooperate fully with your doctor.

Prose Literacy Question

Refer to the article on the next page to answer the following question.

What is the purpose of the *Se Habla Español* expo?

Correct answer

Any statement such as the following:

- To enable people to better serve and sell to the Hispanic community
- To improve marketing strategies to the Hispanic community
- To enable people to establish contacts to serve the Hispanic community

Percentage of U.S. adults in college and the nation who answered the question correctly, 2003

2-year colleges	4-year colleges	All adults
24 (2.6)*	27 (3.0)*	16 (0.8)

* Significantly different from all adults.
 Note: Standard errors are in parentheses.
 Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

MARKETING

Se Habla Español **Hits Chicago**

September 25, 26, and 27 are three days that will change your marketing.

"To some advertisers, the Hispanic market's like the weather—you hear a lot about it, but you can't do much about it," says veteran marketer Tony Martinez. "And other companies think Hispanics will buy their products anyway, so they don't need to do anything special.

"Both attitudes are way off base," Mr. Martinez says briskly, "and they'll both make the competition ecstatic. Because there's a lot of money to be made in the Hispanic market. Its spending power will be \$160 billion this year, and that's growing maybe \$1.4 billion a month," he exclaims, peering intensely over his glasses. "For example, we Hispanics buy 9 percent of all new automobiles.

"This is definitely a special market...you do have to have a special understanding of it," Mr. Martinez goes on, "because as one research firm said, it's 'a market with currents that are going in many directions.' But the rewards will be fantastic. Hispanics are very brand conscious and they tend to become brand loyal very quickly."

It's Mr. Martinez's job—his mission in life—to make sure companies learn how they can serve and sell to America's Hispanics. He has been marketing to the community for many years, working with the best in the business, including Coca-Cola and the advertising firm of Castor CS&B. Now his staff is organizing the largest annual Hispanic market trade show in the business—*Se Habla Español*.

The three-day *Se Habla Español* expo, put on by HISPANIC BUSINESS magazine, is in Chicago this year, at the Hyatt Regency. As in the two previous years in New York and Los Angeles, this conference will host a "big top"-like mix of activities.

The show draws thousands of the country's top marketers, media people, advertisers, researchers, and Hispanic contractors—all intent on gathering as much information as possible, and all hoping to explore new business opportunities. As in any really good big-top show, a hundred different things are happening all at once.

More than 60 Hispanic market specialists conduct fact-heavy seminars. Companies promoting everything from cars to demographic information to career opportunities for Hispanic professionals display and discuss their products in 30,000 square feet of exhibit space. Major exhibitors this year include Ford Motor Co., Lincoln-Mercury, Chevrolet, American Airlines, Telemundo, the Bureau of the Census, and many, many more.

"It's all contacts . . . contacts . . . contacts!" Mr. Martinez exclaims in his best marketing ringmaster style.

Each of the major media hosts its own luncheon or reception, playing to sold-out crowds. Leading participants in last year's Print Reception, for example, included *La Opinion* of Los Angeles, *Vista* magazine, *The Miami Herald*, and the *Los Angeles*

Times. Some participants in the 1989 Radio Luncheon included Katz Hispanic Radio and Caballero Spanish Media. "We still have a few events open to corporate sponsors," Mr. Martinez mentions, not without interest. "They'll be able to count on considerable media play both in preliminary press coverage and during the events themselves."

Another opportunity for sponsor visibility is the *Se Habla Español* Scholarship Fund, which will publicly award scholarships to talented Hispanic students in the various communications fields.

A grand finale black tie banquet spotlights the leading figures in America's Hispanic media world, recognizing outstanding work in each medium with the *Se Habla Español Awards in Communication*. In 1989, Mr. Martinez recalls, almost 400 entries were submitted. Publicidad Siboney swept the top honors for "Ad of the Year" and "TV Ad of the Year" with its commercial for Pepsi-Cola.

One problem attendees find is that the conference offers more information than any one person can gather during just three days. "They should know their priorities," Mr. Martinez advises, "to ensure they focus on the events that will be of most value to their employers."

Reprinted by permission of *Hispanic Business Magazine*.

Document Literacy Question

Seventy-eight percent of what specific group agree that their school does a good job of encouraging parental involvement in educational areas?

Parents and Teachers Evaluate Parental Involvement at Their School

Do you agree or disagree that...?

	Total	Level of School		
		Elementary	Junior High	High School
<i>percent agreeing</i>				
Our school does a good job of encouraging parental involvement in sports, arts, and other nonsubject areas				
Parents	77	76	74	79
Teachers	77	73	77	85
Our school does a good job of encouraging parental involvement in educational areas				
Parents	73	82	71	64
Teachers	80	84	78	70
Our school only contacts parents when there is a problem with their child				
Parents	55	46	62	63
Teachers	23	18	22	33
Our school does not give parents the opportunity for any meaningful roles				
Parents	22	18	22	28
Teachers	8	8	12	7

Source: The Metropolitan Life Survey of the American Teacher, 1987

Reduced from original copy

Correct answer

Junior high teachers

Percentage of U.S. adults in college and the nation who answered the question correctly, 2003

2-year colleges	4-year colleges	All adults
65 (3.0)*	74 (3.7)*	36 (1.2)

* Significantly different from all adults.

Note: Standard errors are in parentheses.


Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Quantitative Literacy Question

61

Suppose that you had your oil tank filled with 140.0 gallons of oil, as indicated on the bill, and you wanted to take advantage of the five cents (\$.05) per gallon deduction.

- Figure out how much the deduction would be if you paid the bill within 10 days. Enter the amount of the deduction on the bill in the space provided.



ASHLAND OIL, INC.
Ashland, Kentucky
41114 (606) 392-3333

18609
DATE
2/2/02

CUSTOMER NO.
002316

ROBERT NELSON
DIVERITY ROAD
ASHLAND, KY 41114

P/R 4TH HOUSE ON LEFT
FILL REAR IN DRIVEWAY

TANK SIZE	GALLONS	ZONE	STOP LOC.	DELIVERY TYPE	DEGREE DAYS	K. FACTOR	PRODUCT CODE
275	180	28	0	AU HO	3247	8.30	2

CUSTOMER'S SIGNATURE

RD 8765

TANK TRUCK SALESMAN TRUCK NO.

METER READING – BEFORE AND AFTER DELIVERY

▼

A A 0 0 3	0 0 1 4 0 ⁰
A A 0 0 2	0 0 0 0 0 ⁰

PRODUCT	PRICE	GALLONS	10TH	AMOUNT
FUEL OIL	97.9	140	0	137 06
<small>SAVE if no outstanding balance due and you pay within 10 days: DEDUCT \$.05 per gal.</small>				
NET TOTAL ▼				

WEMOFORMS • (800) 221-1200 • (201) 898-0980

Reduced from original copy

Correct answer

\$7.00

Percentage of U.S. adults in college and the nation who answered the question correctly, 2003

2-year colleges	4-year colleges	All adults
72 (3.2)*	84 (2.4)*	52 (1.1)

* Significantly different from all adults.

Note: Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Document and Quantitative Literacy Questions

This is an example of a task that was scored in three separate parts and treated as three separate questions. The first two questions were included on the document scale and the third question was included on the quantitative scale.

Refer to the form on the next page to answer the following question.

Use the following information to fill in the receipt for certified mail. Then fill in the "TOTAL Postage and Fees" line.

- You are sending a package to Doris Carter.
- Her address is 19 Main Street, Augusta, GA 30901.
- The postage for the package is \$1.86.
- The fee for certified mail is \$0.75.

Correct answer

Question 1 (Document): Enters name and address correctly. No penalty for misspelling.

Percentage of U.S. adults in college and the nation who answered the question correctly, 2003

2-year colleges	4-year colleges	All adults
83 (2.7)*	75 (2.7)*	65 (1.3)

* Significantly different from all adults.
 Note: Standard errors are in parentheses.
 Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Correct answer

Question 2 (Document): Enters \$1.86 and \$0.75 on the postage and certified fees lines, respectively.

Percentage of U.S. adults in college and the nation who answered the question correctly, 2003

2-year colleges	4-year colleges	All adults
96 (1.4)*	97 (1.1)*	76 (1.2)

* Significantly different from all adults.
 Note: Standard errors are in parentheses.
 Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Correct answer

Question 3 (Quantitative): Either of the following:
 Correctly totals postage and fees: \$2.61.
 Correctly totals incorrect fees entered on form.

Percentage of U.S. adults in college and the nation who answered the question correctly, 2003

2-year colleges	4-year colleges	All adults
96 (1.3)*	97 (1.4)*	78 (1.0)

* Significantly different from all adults.
 Note: Standard errors are in parentheses.
 Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

What may be Certified?

Only items of no intrinsic value such as letters, files, records, etc., that are sent Priority First-Class Mail may be sent by certified mail. No insurance coverage is provided against loss or damage for this service. (For valuables and irreplaceable items, you should use insured or registered mail.)



How to use Certified Mail.

Simply fill out Form 3800, *Receipt for Certified Mail*, and attach (to the address side of the mail) the numbered label portion and the required postage and fee. You may obtain these forms at post offices or from rural carriers. Many customers find it convenient and a "time-saver" to have the form completed before approaching the window. Certified mail, with proper postage and fees affixed, may be dropped in a mailbox unless an official dated receipt is required.

Restricted Delivery

If you want to restrict the delivery of certified mail, you must endorse the mail "Restricted Delivery." This service is available for a \$1.00 fee and can only be used for items addressed to specific individuals by name. However, the addressee can and often does authorize an agent to receive his or her restricted mail.

Fees

The fee for certified mail is 75 cents (in addition to your postage). For an additional fee, you also may purchase a return receipt which provides you proof of delivery.

P 138 573 931

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

Sent to	
Street and No.	
P.O., State and ZIP Code	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	

PS FORM 3800, June 1985

Fold at line over top of envelope to the right of the return address.

CERTIFIED

P 138 573 931

MAIL

q r s t u v w x y z a b c d e f g h
a b c d e f g h i j k l m n o p q r s
l m n o p q r s t u v w x y z a b
k l m n o p q r s t u v w x y z a
a b c d e f g h i j k l m n o p q r s
l m n o p q r s t u v w x y z a b c
n o p q r s t u v w x y z a b c d e
x y z a b c d e f g h i j k l n o p
d e f g h i j l m n o p q r s t u v
z a b c d e f g h i j k l m n o p q
j k l m n o p q r s t u v w x y j k
c d e f g h i j k l m n o p q r s t u
n o p q r s t u v w x y z a b c d e
x y z a b c d e f g h i j k l m n o
h i j k l m n o p q r s t u v w x y
r s t u v w x y z a b c d e f g h i

i j k l m n o p q r s t u v w x y z

s t u v w x y z a b c d e f g h i j k

c d **A P P E N D I X** e **B** f g h i j

b c l m n o p q r s t u v w x y z

s t u v w x y z a b c d e f g h i j k

c d e f g h i j **t e c h n i c a l** k l m

e f g h i j k l m n o p q r s t u v w

q r s t u v **n o t e s** w x y z a b c

w x y z a b c d e f r s t u v w x y

r s t u v w x y z a b c d e f g h i

l m n o p q r s t u v w x y z a b

v w x y z a b c d e f g h i j k l m

e f g h i j k l m n o p q r s t u v w

p q r s t u v w x y z a b c d e f g

z a b c d e f g h i j k l m n o p q

j k l m n o p q r s t u v w x y z a

Sampling and Data Collection

The NSACS assessment was administered to a nationally representative sample of 1,827 students across eighty 2- and 4-year institutions. The NSACS sample was a two-stage, stratified random sample with the first stage of selection a sample of degree-granting 2- and 4-year undergraduate institutions and the second stage of selection a sample of students in their last year of a degree at these institutions. Institutions were selected through a systematic random sampling procedure, with sampling probabilities proportionate to size (PPS). The measure of size was the number of full- and part-time degree-seeking students in either their second year and up (for 2-year institutions) or their fourth year and up (for 4-year institutions), as measured by the 1998-1999 Integrated Postsecondary Education Data System (IPEDS) dataset. Explicit strata were defined by 2-year/4-year status. The second stage of selection consisted of a sample of full- and part-time degree-seeking students at 2- and 4-year undergraduate institutions who had accumulated enough credits to be eligible to graduate in spring 2003. The sampling design was a stratified systematic random sample. The alphabet as applied to the last and first name of students was used as an implicit stratifying variable.

The final institution response rate was 89 percent and the final student response rate was 49 percent, for a combined overall response rate of 43 percent. Because this response rate was lower than expected, AIR conducted a nonresponse bias analysis. The nonresponse bias analysis revealed significant differences in the background characteristics of the respondents who participated in the assessment and those who did not. A nonresponse bias adjustment was performed to reduce the bias due to nonresponse.¹ The analyses presented in this report are based on data from the corrected sample.

¹The nonresponse bias adjustment was conducted using the following variables: institutional type (2-year vs. 4-year), institutional control (public vs. private), institutional selectivity, curricular emphasis, and gender.

Item Response Theory (IRT) Scaling

Item response theory (IRT) models were used to estimate average literacy scale scores. IRT models the probability of answering a question correctly as a mathematical function of proficiency or skill. The main purpose of IRT analysis is to provide a common scale on which performance (or some other trait) can be compared across groups.

IRT models assume that an examinee's performance on each item reflects characteristics of the item and characteristics of the examinee. An examinee's performance on a particular item reflects item difficulty, his or her proficiency, and the effects of other forces that are not correlated across items or individuals. All models assume that all items on a scale measure a common ability or proficiency (e.g., prose literacy) and that the probability of a correct response on an item is uncorrelated with the probability of a correct response on another item, an assumption known as conditional independence. Items are measured in terms of their difficulty as well as their ability to discriminate among examinees of varying ability and the probability that examinees with low ability will obtain a correct response through guessing.

The NSACS assessment used two types of IRT models to estimate scale scores. The two-parameter logistic (2PL) model, which was used for dichotomous items (that is, items that are scored either right or wrong), takes the form

$$P(x_{ij}=1 | \theta_j, a_i, b_i) = \frac{1}{1 + e^{-1.7a_i(\theta_j - b_i)}}$$

where x_{ij} is the response of person j to item i , θ_j is the proficiency of person j , a_i is the *slope* or *discrimination* parameter for item i , and b_i is the *location* or *difficulty* parameter for item i .

For the partial credit items, the Graded Response Logistic (GRL) model was used. This model follows the 2PL model for the probability of a score of 1 (at least partially correct):

$$P(x_{ij} \geq 1 | \theta_j, a_i, b_{i1}) = \frac{1}{1 + e^{-1.7a_i(\theta_j - b_{i1})}}$$

It also follows the 2PL model for the probability of a score of 2 (completely correct):

$$P(x_{ij}=2 | \theta_j, a_i, b_{i2}) = \frac{1}{1 + e^{-1.7a_i(\theta_j - b_{i2})}}$$

In the equations above, b_{i1} and b_{i2} are the step parameters.²

Weighting and Variance Estimation

A complex sample design was used to select assessment respondents. The properties of a sample selected through a complex design could be very different from those of a simple random sample, in which every individual in the target population has an equal chance of selection and in which the observations from different sampled individuals can be considered to be statistically independent of one another. Therefore, the properties of the sample for the complex data collection design were taken into account during the analysis of the data. Standard errors calculated as though the data had been collected from a simple random sample would generally underestimate sampling errors. One way that the properties of the sample design were addressed was by using sampling weights to account for the fact that the probabilities of selection were not identical for all respondents. All population and subpopulation characteristics based on the NSACS data used sampling weights in their estimation.

²For further discussion of these models the reader is referred to U.S. Department of Education, National Center for Education Statistics. (forthcoming). *2003 National Assessment of Adult Literacy Technical Report*. Washington, DC: U.S. Government Printing Office.

The statistics presented in this report are estimates of group and subgroup performance based on a sample of respondents, rather than the values that could be calculated if every person in the nation answered every question on the instrument. It is therefore important to have measures of the degree of uncertainty of the estimates. Accordingly, in addition to providing estimates of percentages of respondents and their average scale score, this report provides information about the uncertainty of each statistic.

Because the assessment uses clustered sampling (students clustered in colleges and universities), conventional formulas for estimating sampling variability that assume simple random sampling and hence independence of observations are inappropriate. For this reason, the NSACS assessment uses a Taylor series procedure to estimate standard errors (Binder, 1983).³

Statistical Testing

All comparisons discussed in this report are *statistical* comparisons based on the t statistic, using a 95 percent confidence interval (two-tailed). The formula used to compute the t statistic was

$$t = \frac{(P_1 - P_2)}{\sqrt{(se_1^2 + se_2^2)}}$$

where P_1 and P_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors.

³Binder, D.A. (1983). On the Variances of Asymptotically Normal Estimates for Complex Surveys. *International Statistical Review*, 51, 279–92.

q r s t u v w x y z a b c d e f g h
a b c d e f g h i j k l m n o p q r s
l m n o p q r s t u v w x y z a b
k l m n o p q r s t u v w x y z a
a b c d e f g h i j k l m n o p q r s
l m n o p q r s t u v w x y z a b
h i j k l m n o p q r s t u v w x y
r s t u v w x y z a b c d e f g h i
v w x y z a b c d e f g h i j l m n
g h i j k l m n o p q r s t u v w x
n o p q s t u v w x y z a b c d e f
y j k l m n o p q r s t u v w x y z
n o p q r s t u v w x y z a b c d e
x y z a b c d e f g h i j k l m n o
h i j k l m n o p q r s t u v w x y
r s t u v w x y j k l m n o p q r s

ijklmnopqrstuvwxyz
stuvwxyzabcdefghijklmnop
cd **A P P E N D I X** e **C** fg hij
bc lmnopqrstuvwxyz
stuvwxyzabcdefghijklmnop
cde **s t a n d a r d f e r r o r s** g
zabcdefghijklmnopq
jklno **f o r p t a b l e s** qrstu
opqrstuvwxyzabcdef
yzabcdefghijklmnop
ghijklmnopqrstuvw
abcd fgh **f i g u r e s** ijklm
efghijklmnopqrstuvw
pqrstuvwxyzabcdefg
zabcdefghijklmnopq
tuvwxyzabcdefghijklmnop

Table C1. Estimates and standard errors for Figures 2.1 and 2.2: Average prose, document, and quantitative literacy scores and percentage in each literacy level, for U.S. adults in college and the nation

Literacy scale and population	Average	Percent <i>Below Basic</i>	Percent <i>Basic</i>	Percent <i>Intermediate</i>	Percent <i>Proficient</i>
PROSE					
2-year colleges	311 (2.2)	1 (0.5)	11 (2.1)	65 (3.9)	23 (3.8)
4-year colleges	326 (3.0)	1 (0.5)	6 (1.8)	56 (4.9)	38 (5.1)
All adults	275 (1.3)	14 (0.6)	29 (0.6)	44 (0.7)	13 (0.5)
DOCUMENT					
2-year colleges	306 (2.9)	1 (0.6)	7 (2.3)	69 (5.9)	23 (5.9)
4-year colleges	323 (3.1)	1 (0.4)	5 (1.3)	55 (5.2)	40 (5.4)
All adults	271 (1.2)	12 (0.5)	22 (0.5)	53 (0.7)	13 (0.6)
QUANTITATIVE					
2-year colleges	310 (2.8)	4 (1.6)	29 (3.5)	49 (4.2)	18 (4.1)
4-year colleges	330 (3.5)	1 (0.9)	19 (3.0)	46 (4.8)	34 (5.4)
All adults	283 (1.2)	22 (0.6)	33 (0.5)	33 (0.5)	13 (0.5)

Note: Percentages may not add to 100 because of rounding. Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Table C2. Estimates and standard errors for Table 2.1: Average prose, document, and quantitative literacy scores for U.S. adults in college and the nation, by selected characteristics

Characteristic	Prose			Document			Quantitative		
	2-year	4-year	All adults	2-year	4-year	All Adults	2-year	4-year	All Adults
GENDER									
Female	312 (2.2)	326 (3.2)	277 (1.4)	306 (3.2)	322 (4.1)	272 (1.2)	306 (2.9)	326 (3.6)	279 (1.3)
Male	309 (4.0)	327 (3.8)	272 (1.5)	307 (5.1)	325 (3.7)	269 (1.5)	316 (4.1)	336 (4.5)	286 (1.3)
RACE/ETHNICITY									
White	319 (2.1)	332 (3.2)	288 (1.5)	315 (2.9)	329 (3.4)	282 (1.5)	321 (2.3)	337 (3.5)	297 (1.3)
Black	296 (5.5)	296 (9.0)	243 (1.8)	286 (6.3)	293 (9.2)	238 (2.1)	289 (4.4)	292 (5.6)	238 (2.1)
Hispanic	308 (7.5)	313 (9.3)	216 (3.5)	294 (6.5)	313 (11.6)	224 (3.6)	296 (8.7)	310 (7.8)	233 (3.2)
Asian/Pacific Islander	274 (7.9)	307 (7.0)	271 (4.0)	286 (10.2)	302 (5.5)	272 (5.0)	278 (7.2)	314 (7.6)	285 (5.1)
LANGUAGE SPOKEN BEFORE STARTING SCHOOL									
English only	316 (2.1)	329 (3.3)	283 (1.4)	311 (2.8)	326 (3.5)	276 (1.3)	317 (2.5)	333 (3.6)	289 (1.2)
English and other language	~ ~	327 (8.9)	272 (2.2)	~ ~	316 (9.2)	264 (2.4)	~ ~	317 (7.0)	278 (3.0)
Non-English	288 (6.3)	303 (5.8)	212 (3.5)	283 (5.5)	306 (6.4)	222 (3.9)	284 (4.7)	318 (7.4)	235 (4.0)

~ Literacy score could not be estimated because of small sample size.

Note: Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Table C3. Estimates and standard errors for Table 2.2: Percentage of U.S. adults in college and the nation in each prose literacy level, by selected characteristics

Characteristic	<i>Below Basic</i>			<i>Basic</i>			<i>Intermediate</i>			<i>Proficient</i>						
	2-year	4-year	All adults	2-year	4-year	All adults	2-year	4-year	All adults	2-year	4-year	All adults				
GENDER																
Female	0 (0.5)	1 (0.6)	12 (0.6)	9 (2.8)	6 (1.9)	29 (0.6)	69 (5.6)	56 (4.9)	46 (0.8)	22 (5.4)	37 (5.1)	14 (0.6)				
Male	2 (1.0)	0 (0.5)	15 (0.6)	14 (2.8)	7 (2.3)	29 (0.7)	61 (4.8)	55 (6.4)	43 (0.7)	24 (4.7)	38 (6.6)	13 (0.6)				
RACE/ETHNICITY																
White	0 (0.3)	0 (0.5)	7 (0.5)	6 (2.3)	3 (2.1)	25 (0.8)	67 (6.2)	55 (8.2)	51 (0.9)	27 (6.1)	42 (8.5)	17 (0.9)				
Black	0 (1.8)	4 (2.9)	24 (1.4)	18 (13.2)	20 (6.0)	43 (1.2)	71 (16.5)	61 (8.3)	31 (1.4)	11 (12.5)	16 (7.1)	2 (0.4)				
Hispanic	2 (2.5)	2 (2.1)	44 (1.8)	12 (5.7)	4 (5.5)	30 (1.0)	63 (9.3)	55 (9.6)	23 (1.1)	22 (9.2)	29 (9.5)	4 (0.4)				
Asian/Pacific Islander	5 (3.4)	1 (1.6)	14 (2.0)	39 (9.6)	17 (5.2)	32 (2.2)	49 (10.8)	59 (7.7)	42 (2.5)	7 (6.5)	23 (7.5)	12 (1.8)				
LANGUAGE SPOKEN BEFORE STARTING SCHOOL																
English only	1 (0.5)	0 (0.4)	9 (0.5)	8 (2.0)	5 (2.1)	27 (0.7)	66 (4.6)	56 (6.6)	49 (0.8)	26 (4.5)	39 (6.9)	15 (0.7)				
English and other language	~	~	0 (0.8)	10 (1.2)	~	~	6 (8.2)	35 (1.8)	~	~	58 (20.8)	47 (2.0)	~	~	36 (21.4)	8 (1.2)
Non-English	2 (2.8)	4 (2.1)	48 (1.7)	26 (8.5)	19 (3.6)	28 (1.1)	62 (10.1)	54 (5.6)	21 (1.1)	9 (7.1)	24 (4.8)	4 (0.5)				

~ Literacy score could not be estimated because of small sample size.
 Note: Percentages may not add to 100 because of rounding. Standard errors are in parentheses.
 Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Table C4. Estimates and standard errors for Table 2.3: Percentage of U.S. adults in college and the nation in each document literacy level, by selected characteristics

Characteristic	<i>Below Basic</i>			<i>Basic</i>			<i>Intermediate</i>			<i>Proficient</i>						
	2-year	4-year	All adults	2-year	4-year	All adults	2-year	4-year	All adults	2-year	4-year	All adults				
GENDER																
Female	1 (0.7)	1 (0.5)	11 (0.6)	8 (2.5)	4 (2.0)	22 (0.6)	68 (6.1)	58 (7.5)	54 (0.8)	24 (6.2)	38 (7.8)	13 (0.6)				
Male	1 (1.3)	0 (0.4)	14 (0.6)	7 (4.1)	5 (1.4)	23 (0.5)	69 (11.1)	52 (5.3)	51 (0.8)	24 (11.4)	43 (5.5)	13 (0.6)				
RACE/ETHNICITY																
White	0 (0.3)	0 (0.3)	8 (0.5)	3 (2.5)	3 (1.4)	19 (0.7)	68 (9.7)	52 (7.3)	58 (1.0)	28 (9.9)	45 (7.6)	15 (1.0)				
Black	1 (3.6)	3 (2.5)	24 (1.7)	16 (12.4)	12 (6.1)	35 (1.4)	74 (16.6)	68 (11.0)	40 (1.9)	10 (13.0)	17 (10.4)	2 (0.5)				
Hispanic	1 (2.3)	3 (2.7)	36 (1.6)	10 (7.5)	10 (4.0)	26 (0.8)	73 (13.0)	52 (9.9)	33 (1.2)	15 (11.9)	35 (10.2)	5 (0.5)				
Asian/Pacific Islander	8 (3.5)	0 (1.2)	11 (2.2)	17 (4.9)	9 (6.3)	22 (2.1)	56 (7.8)	71 (12.6)	54 (3.0)	18 (6.9)	20 (11.9)	13 (2.3)				
LANGUAGE SPOKEN BEFORE STARTING SCHOOL																
English only	0 (0.5)	0 (0.4)	9 (0.5)	5 (2.3)	4 (1.4)	21 (0.6)	68 (7.2)	53 (5.9)	56 (0.8)	27 (7.3)	42 (6.2)	13 (0.7)				
English and other language	~	~	0 (1.3)	11 (1.6)	~	~	7 (6.0)	27 (1.8)	~	~	60 (16.4)	56 (2.4)	~	~	33 (17.1)	6 (1.4)
Non-English	4 (2.6)	1 (1.5)	37 (1.7)	17 (5.5)	9 (4.3)	25 (0.8)	69 (7.7)	63 (9.3)	32 (1.2)	10 (6.1)	26 (9.2)	6 (0.6)				

~ Literacy score could not be estimated because of small sample size.
 Note: Percentages may not add to 100 because of rounding. Standard errors are in parentheses.
 Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Table C5. Estimates and standard errors for Table 2.4: Percentage of U.S. adults in college and the nation in each quantitative literacy level, by selected characteristics

Characteristic	<i>Below Basic</i>			<i>Basic</i>			<i>Intermediate</i>			<i>Proficient</i>						
	2-year	4-year	All adults	2-year	4-year	All adults	2-year	4-year	All adults	2-year	4-year	All adults				
GENDER																
Female	5 (1.7)	1 (1.1)	22 (0.8)	31 (3.3)	20 (3.8)	35 (0.7)	47 (3.8)	49 (5.9)	32 (0.7)	16 (3.6)	30 (6.4)	11 (0.6)				
Male	2 (2.2)	1 (0.9)	21 (0.6)	25 (6.4)	17 (3.2)	31 (0.5)	53 (8.3)	42 (5.0)	33 (0.5)	20 (8.2)	39 (5.8)	16 (0.6)				
RACE/ETHNICITY																
White	1 (1.0)	1 (0.6)	13 (0.7)	22 (3.4)	15 (3.0)	32 (0.7)	53 (4.9)	45 (5.5)	39 (0.8)	24 (5.1)	40 (6.1)	17 (0.8)				
Black	9 (4.4)	6 (9.9)	47 (1.8)	42 (7.1)	43 (18.1)	36 (1.3)	42 (7.3)	46 (18.7)	15 (1.1)	7 (4.5)	5 (9.7)	2 (0.4)				
Hispanic	10 (5.3)	4 (3.7)	50 (1.7)	35 (7.8)	33 (8.6)	29 (0.9)	41 (8.5)	45 (9.5)	17 (0.9)	14 (7.2)	19 (10.3)	4 (0.5)				
Asian/Pacific Islander	13 (13.4)	2 (3.9)	19 (3.0)	50 (18.5)	28 (11.5)	34 (2.9)	35 (18.0)	51 (14.1)	35 (2.8)	3 (6.9)	20 (14.5)	12 (2.5)				
LANGUAGE SPOKEN BEFORE STARTING SCHOOL																
English only	2 (1.2)	1 (0.8)	18 (0.6)	25 (3.6)	17 (3.2)	33 (0.6)	52 (4.7)	46 (5.1)	35 (0.6)	21 (4.7)	36 (5.8)	15 (0.6)				
English and other language	~	~	2 (5.7)	21 (2.1)	~	~	25 (20.1)	38 (1.9)	~	~	53 (22.9)	31 (2.0)	~	~	21 (23.1)	10 (1.6)
Non-English	8 (8.4)	4 (2.7)	49 (1.8)	49 (15.0)	27 (5.5)	28 (0.9)	40 (14.7)	41 (6.8)	18 (1.1)	3 (6.0)	27 (7.6)	6 (0.7)				

~ Literacy score could not be estimated because of small sample size.
 Note: Percentages may not add to 100 because of rounding. Standard errors are in parentheses.
 Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Table C6. Estimates and standard errors for Figures 2.3 and 2.4: Average prose, document, and quantitative literacy scores and percentage in each literacy level, for U.S. adults in college and the nation, by completion of postsecondary education

Literacy scale and population	Average	Percent <i>Below Basic</i>	Percent <i>Basic</i>	Percent <i>Intermediate</i>	Percent <i>Proficient</i>
PROSE					
Students, 2-year	311 (2.2)	1 (0.5)	11 (2.1)	65 (3.9)	23 (3.8)
Students, 4-year	326 (3.0)	1 (0.5)	6 (1.8)	56 (4.9)	38 (5.1)
Adults, 2-year	298 (2.4)	4 (0.7)	20 (1.5)	56 (2.0)	19 (2.0)
Adults, 4-year	314 (2.1)	3 (0.5)	14 (1.0)	53 (1.7)	31 (1.8)
DOCUMENT					
Students, 2-year	306 (2.9)	1 (0.6)	7 (2.3)	69 (5.9)	23 (5.9)
Students, 4-year	323 (3.1)	1 (0.4)	5 (1.3)	55 (5.2)	40 (5.4)
Adults, 2-year	291 (2.0)	3 (0.7)	15 (1.5)	66 (2.3)	16 (2.2)
Adults, 4-year	303 (2.2)	2 (0.6)	11 (1.2)	62 (2.5)	25 (2.7)
QUANTITATIVE					
Students, 2-year	310 (2.8)	4 (1.6)	29 (3.5)	49 (4.2)	18 (4.1)
Students, 4-year	330 (3.5)	1 (0.9)	19 (3.0)	46 (4.8)	34 (5.4)
Adults, 2-year	305 (2.1)	7 (1.1)	30 (1.9)	45 (2.1)	18 (2.1)
Adults, 4-year	323 (1.8)	4 (0.6)	22 (1.2)	43 (1.5)	31 (1.9)

Note: Percentages may not add to 100 because of rounding. Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students and 2003 National Assessment of Adult Literacy.

Table C7. Estimates and standard errors for Figures 3.1 and 3.2: Average prose, document, and quantitative literacy scores and percentage in each literacy level, for U.S. adults in 2- and 4-year colleges

Literacy scale and population	Average	Percent <i>Below Basic</i>	Percent <i>Basic</i>	Percent <i>Intermediate</i>	Percent <i>Proficient</i>
PROSE					
2-year colleges	311 (2.2)	1 (0.5)	11 (2.1)	65 (3.9)	23 (3.8)
4-year colleges	326 (3.0)	1 (0.5)	6 (1.8)	56 (4.9)	38 (5.1)
DOCUMENT					
2-year colleges	306 (2.9)	1 (0.6)	7 (2.3)	69 (5.9)	23 (5.9)
4-year colleges	323 (3.1)	1 (0.4)	5 (1.3)	55 (5.2)	40 (5.4)
QUANTITATIVE					
2-year colleges	310 (2.8)	4 (1.6)	29 (3.5)	49 (4.2)	18 (4.1)
4-year colleges	330 (3.5)	1 (0.9)	19 (3.0)	46 (4.8)	34 (5.4)

Note: Percentages may not add to 100 because of rounding. Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students.

Table C8. Estimates and standard errors for Figures 3.3, 3.4, 3.5: Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by institutional characteristics

Institutional characteristic	Prose	Document	Quantitative
Public 4-year college	328 (2.9)	326 (3.1)	334 (3.5)
Private 4-year college	319 (9.3)	314 (9.1)	317 (8.5)
Selective 4-year college	328 (2.9)	325 (3.2)	331 (3.7)
Nonselective 4-year college	306 (9.1)	310 (8.8)	320 (7.8)
Academic emphasis of 2-year college	310 (2.5)	305 (3.4)	308 (3.2)
Technical emphasis of 2-year college	314 (3.8)	311 (2.9)	318 (4.5)

Note: Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students.

Table C9. Estimates and standard errors for Figures 4.1 and 4.2: Average prose, document, and quantitative literacy scores and percentage with *Proficient* literacy for U.S. adults in 2- and 4-year colleges, by country of birth

Country of birth	Prose				Document				Quantitative			
	Average		Percent <i>Proficient</i>		Average		Percent <i>Proficient</i>		Average		Percent <i>Proficient</i>	
	2-year	4-year	2-year	4-year	2-year	4-year	2-year	4-year	2-year	4-year	2-year	4-year
U.S.-born	315 (2.0)	330 (3.3)	24 (4.8)	40 (7.6)	310 (2.8)	327 (3.4)	25 (8.8)	43 (6.6)	315 (2.6)	333 (3.6)	20 (4.7)	36 (6.1)
Foreign-born	293 (6.2)	297 (6.2)	16 (5.6)	17 (5.7)	285 (5.2)	300 (4.5)	13 (4.8)	20 (7.8)	290 (5.8)	315 (8.4)	6 (6.7)	23 (10.0)

Note: Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students.

Table C10. Estimates and standard errors for Figures 4.3, 4.4, and 4.5 and Tables 4.1 and 4.2: Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by student characteristics

Student characteristic	Prose		Document		Quantitative	
	2-year	4-year	2-year	4-year	2-year	4-year
DEPENDENT STATUS						
Financially dependent on someone else	309 (3.6)	330 (3.5)	306 (3.9)	325 (4.1)	311 (3.8)	333 (4.5)
Financially independent	312 (2.6)	322 (4.4)	306 (3.5)	321 (4.2)	310 (3.1)	327 (3.9)
PERSONAL/PARENTS' INCOME						
\$0-\$9,999	314 (6.5)	313 (7.0)	299 (9.7)	312 (8.5)	305 (12.8)	321 (8.0)
\$10,000-\$19,999	310 (3.7)	329 (7.5)	302 (6.3)	325 (7.3)	306 (4.9)	330 (6.0)
\$20,000-\$29,999	307 (7.7)	328 (13.3)	299 (7.5)	318 (7.6)	302 (5.5)	342 (9.9)
\$30,000-\$39,999	316 (6.5)	322 (7.4)	307 (5.3)	329 (8.5)	310 (7.8)	343 (9.1)
\$40,000-\$49,999	324 (5.8)	325 (7.1)	304 (6.6)	333 (7.8)	318 (5.3)	327 (6.2)
\$50,000-\$59,999	321 (5.3)	339 (6.5)	306 (4.5)	317 (7.7)	323 (5.2)	345 (7.7)
\$60,000-\$74,999	311 (7.4)	334 (5.1)	329 (10.2)	320 (6.6)	317 (7.0)	328 (5.9)
\$75,000-\$99,999	322 (5.0)	326 (4.5)	328 (8.7)	324 (5.8)	328 (5.9)	336 (7.3)
\$100,000+	308 (7.5)	336 (6.0)	306 (7.7)	338 (6.3)	323 (6.7)	333 (6.1)
PARENTS' EDUCATION						
Less than/some high school	290 (7.9)	~ ~	279 (7.2)	~ ~	288 (7.8)	~ ~
High school graduate/GED	306 (4.1)	315 (5.1)	303 (4.8)	306 (5.7)	305 (3.8)	318 (5.1)
Vocational/trade/business school	317 (5.2)	330 (6.7)	306 (6.0)	337 (10.2)	313 (5.3)	337 (8.6)
Some college	312 (4.8)	317 (6.6)	305 (5.5)	321 (7.0)	321 (6.5)	321 (6.1)
Associate's/2-year degree	313 (4.9)	324 (6.9)	316 (6.5)	330 (8.4)	311 (6.3)	331 (6.1)
College graduate	320 (5.9)	328 (4.1)	319 (5.6)	323 (4.2)	314 (4.5)	335 (4.3)
Graduate studies/degree	323 (5.7)	340 (3.9)	312 (6.0)	330 (5.6)	321 (6.0)	339 (5.7)
YEARS SINCE HIGH SCHOOL GRADUATION						
Less than 5 years	307 (3.0)	328 (3.2)	307 (4.4)	325 (3.8)	306 (3.9)	334 (4.4)
6-10 years	311 (5.6)	324 (5.7)	311 (5.1)	319 (5.3)	314 (4.4)	321 (5.0)
More than 10 years	315 (3.5)	327 (6.5)	303 (3.9)	318 (5.2)	313 (3.4)	334 (5.0)
COUNTRY OF HIGH SCHOOL DIPLOMA						
U.S. high school	312 (1.8)	328 (3.4)	308 (2.8)	324 (3.3)	311 (2.6)	331 (3.7)
Foreign high school	289 (8.6)	310 (7.3)	279 (7.3)	306 (7.1)	295 (7.3)	320 (8.1)

~ Literacy score could not be estimated because of small sample size.

Note: Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students.

Table C11. Estimates and standard errors for Figures 5.1, 5.2, and 5.3: Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by measures of college experiences

College experience	Prose		Document		Quantitative	
	2-year	4-year	2-year	4-year	2-year	4-year
LENGTH OF TIME IN COLLEGE						
Less than 5 years	309 (2.7)	327 (3.4)	306 (4.0)	326 (3.8)	308 (3.8)	333 (4.5)
6-10 years	307 (5.7)	325 (4.7)	305 (5.1)	321 (4.6)	308 (4.7)	322 (4.3)
More than 10 years	320 (4.4)	327 (8.1)	309 (4.3)	315 (8.0)	316 (4.0)	333 (5.7)
ENROLLMENT STATUS						
Full time	311 (2.5)	327 (2.9)	307 (3.4)	323 (3.2)	310 (2.8)	331 (3.7)
Part time	312 (3.5)	321 (9.7)	303 (4.8)	325 (9.2)	312 (4.9)	328 (6.5)
TOTAL POSTSECONDARY INSTITUTIONS ATTENDED						
1 institution	308 (3.0)	324 (4.8)	303 (3.9)	324 (5.0)	307 (3.7)	331 (4.7)
2 institutions	317 (3.6)	329 (4.0)	310 (4.1)	325 (4.8)	316 (4.7)	331 (4.2)
3 or more institutions	315 (4.6)	328 (4.1)	314 (5.9)	320 (3.9)	315 (5.4)	331 (4.6)

Note: Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students.

Table C12. Estimates and standard errors for Figure 5.4: Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by enrollment in remedial math or English

Enrollment in remedial math or English	Prose		Document		Quantitative	
	2-year	4-year	2-year	4-year	2-year	4-year
Took remedial English	291 (5.8)	305 (5.9)	289 (5.8)	309 (7.5)	302 (7.2)	307 (5.7)
Took remedial math	316 (4.4)	316 (5.5)	314 (5.6)	314 (7.8)	307 (4.2)	311 (5.4)
Took remedial English and math	294 (4.0)	304 (6.8)	288 (3.9)	311 (8.1)	285 (4.3)	310 (6.5)
Took no remedial classes	320 (2.6)	334 (3.0)	315 (3.9)	329 (3.3)	325 (3.1)	339 (3.7)

Note: Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students.

Table C13. Estimates and standard errors for Table 5.1: Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by academic major

Academic major	Prose		Document		Quantitative	
	2-year	4-year	2-year	4-year	2-year	4-year
Business management	307 (4.8)	321 (5.0)	302 (4.8)	316 (6.5)	312 (4.3)	328 (4.6)
Math, science, engineering	315 (5.1)	335 (4.3)	310 (6.1)	337 (5.0)	313 (6.2)	347 (5.1)
Education	307 (3.5)	320 (6.9)	311 (6.2)	309 (7.0)	306 (5.0)	322 (8.0)
Fine arts and humanities	319 (5.4)	331 (3.8)	306 (6.9)	329 (5.5)	311 (6.6)	321 (3.9)
Health	315 (4.0)	316 (8.3)	315 (5.8)	321 (9.4)	316 (4.0)	326 (9.4)
Social sciences	304 (4.3)	327 (7.6)	296 (8.1)	318 (7.3)	301 (7.1)	332 (7.8)
Vocational/technical/other	314 (7.7)	~ ~	294 (8.8)	~ ~	305 (6.3)	~ ~

~ Literacy score could not be estimated because of small sample size.

Note: Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students.

Table C14. Estimates and standard errors for Figures 5.5 and 5.6: Average prose, document, and quantitative literacy scores and percentage with *Proficient* literacy for U.S. adults in 2- and 4-year colleges, by grade point average

Grade point average	Prose				Document				Quantitative			
	Average		Percent <i>Proficient</i>		Average		Percent <i>Proficient</i>		Average		Percent <i>Proficient</i>	
	2-year	4-year	2-year	4-year	2-year	4-year	2-year	4-year	2-year	4-year	2-year	4-year
Mostly As	329 (4.1)	344 (5.9)	39 (10.9)	55 (11.8)	313 (6.0)	337 (6.0)	30 (11.9)	53 (9.6)	329 (5.0)	351 (6.4)	34 (6.6)	51 (7.7)
As and Bs	315 (3.4)	333 (3.6)	25 (7.5)	44 (5.9)	314 (4.1)	329 (4.2)	32 (6.8)	45 (6.5)	315 (3.1)	337 (4.7)	19 (6.3)	39 (7.5)
Mostly Bs	309 (3.2)	319 (4.0)	20 (6.5)	29 (10.3)	308 (5.2)	318 (4.4)	25 (11.7)	34 (10.0)	306 (4.4)	324 (4.7)	14 (7.4)	29 (7.1)
Bs and Cs	295 (4.3)	312 (4.9)	11 (6.6)	24 (8.0)	287 (3.9)	311 (5.5)	7 (10.2)	27 (16.3)	293 (4.3)	315 (4.5)	10 (4.5)	19 (9.9)

Note: Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students.

Table C15. Estimates and standard errors for Table 5.2: Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by expectations for postsecondary education

Expectations for postsecondary education	Prose		Document		Quantitative	
	2-year	4-year	2-year	4-year	2-year	4-year
Associate's degree	297 (4.4)	—	287 (4.6)	—	299 (4.9)	—
Bachelor's degree	311 (3.3)	325 (3.5)	305 (4.3)	319 (4.5)	313 (4.5)	329 (4.4)
Master's degree or equivalent	318 (3.4)	326 (3.6)	314 (3.7)	323 (3.7)	314 (3.4)	329 (3.7)
Doctoral degree	309 (4.4)	325 (6.5)	312 (9.3)	319 (6.6)	305 (5.6)	326 (7.9)
First professional degree	325 (7.8)	343 (6.5)	315 (7.4)	342 (9.0)	315 (7.5)	361 (8.8)

— Not applicable

Note: Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students.

Table C16. Estimates and standard errors for Figure 5.7: Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by emphasis on analytic coursework

Emphasis on analytic coursework	Prose		Document		Quantitative	
	2-year	4-year	2-year	4-year	2-year	4-year
Low	297 (4.9)	310 (6.5)	293 (4.8)	308 (6.8)	300 (5.3)	319 (5.8)
Medium	316 (2.8)	329 (3.0)	310 (3.1)	325 (3.2)	313 (2.9)	334 (3.7)
High	314 (3.7)	327 (4.3)	310 (5.0)	328 (6.3)	313 (4.4)	325 (5.1)

Note: Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students.

Table C17. Estimates and standard errors for Figure 5.8: Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by frequency of faculty interactions outside of class

Faculty interactions outside of class	Prose		Document		Quantitative	
	2-year	4-year	2-year	4-year	2-year	4-year
Infrequent	313 (6.1)	337 (5.5)	308 (6.6)	326 (6.9)	314 (6.6)	340 (5.4)
Somewhat frequent	311 (2.6)	326 (3.5)	307 (3.1)	324 (3.3)	312 (2.8)	330 (3.7)
Frequent	310 (4.3)	321 (5.3)	301 (6.7)	318 (5.5)	298 (4.6)	323 (6.0)

Note: Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students.

Table C18. Estimates and standard errors for Figure 5.9: Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by institutional support

Institutional support	Prose		Document		Quantitative	
	2-year	4-year	2-year	4-year	2-year	4-year
Low	303 (4.9)	322 (5.3)	301 (5.3)	319 (5.5)	305 (4.7)	328 (5.1)
Medium	313 (2.4)	328 (3.3)	308 (3.0)	323 (3.3)	312 (3.1)	332 (3.7)
High	306 (5.2)	326 (6.0)	301 (6.8)	329 (6.6)	302 (5.5)	324 (8.0)

Note: Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students.

Table C19. Estimates and standard errors for Table 5.3: Average prose, document, and quantitative literacy scores for U.S. adults in 2- and 4-year colleges, by quality of relationships with faculty and students

Literacy scale and quality of relationships with faculty and students	2-year			4-year		
	Unfriendly	Somewhat friendly	Friendly	Unfriendly	Somewhat friendly	Friendly
PROSE						
Quality of relationships with faculty	~ ~	292 (7.7)	314 (2.0)	322 (9.5)	320 (5.2)	328 (3.2)
Quality of relationships with other students	~ ~	309 (6.6)	311 (2.1)	~ ~	325 (6.7)	328 (3.2)
DOCUMENT						
Quality of relationships with faculty	~ ~	296 (6.5)	309 (3.2)	321 (8.2)	323 (7.6)	324 (3.2)
Quality of relationships with other students	~ ~	314 (6.2)	306 (3.2)	~ ~	321 (8.6)	324 (3.1)
QUANTITATIVE						
Quality of relationships with faculty	~ ~	294 (6.6)	312 (2.8)	334 (10.0)	323 (6.2)	332 (3.7)
Quality of relationships with other students	~ ~	319 (8.6)	309 (2.8)	~ ~	320 (7.2)	332 (3.4)

~ Literacy score could not be estimated because of small sample size.

Note: Standard errors are in parentheses.

Source: 2003 National Survey of America's College Students.

q r s t u v w x y z a b c d e f g h
a b c d e f g h i j k l m n o p q r s
l m n o p q r s t u v w x y z a b
k l m n o p q r s t u v w x y z a
a b c d e f g h i j k l m n o p q r s
l m n o p q r s t u v w x y z a b c
v w x y z a b c d e f g h i j k l m
x y z a b c d e f g h i j k l n o p
l m n o p q r s t u v w x y z a b c
v w x y z a b c d e f g h i j k l m
e f g h i j k l m n o p q r s t u v
o p q r s t u v w x y z a b c d e f
y z a b c d e f g h i j k l m n o p
i j k l m n o p q r s t u v w x y z
s t u v w x y z a b c d e f g h i j
c d e f g h i j k l m n o p q r s t u

i j k l m n o p q r s t u v w x y z

s t u v w x y z a b c d e f g h i j k

c d **A P P E N D I X** e **D** f g h i j

b c l m n o p q r s t u v w x y z

s t u v w x y z a b c d e f g h i j k

c d e f g h i j k l m n o p q r s t u

n o p q r s t **g l o s s a r y** u v w

q r s t u w x y z a b c d e f g h i j

c d e f g h i j k l m n o p q r s t u

n o p q r s t u v w x y z a b c d

w x y z a b c d e f g h i j k l m n

g h i j k l m n o p q r s t u v w x

q r s t u v w x y z a b c d e f g h

a b c d e f g h i j k l m n o p q r

k l m n o p q r s t u v w x y z a b

v w x y z a b c d e f g h i j k l m

Academic and social engagement

Student academic and social engagement in postsecondary institutions was measured using three scales:

- Emphasis on Analytic Coursework
- Faculty Interactions Outside of Class
- Institutional Support

The scales were derived from selected questions from the NSSE and CCSSE surveys of student engagement included on the NSACS background questionnaire.¹ The first step in creating the scales was to use factor analysis to examine the engagement questions. The factor rotations supported classifying nine of the original nineteen engagement questions in the following three groups:

Emphasis on Analytic Coursework

1. Coursework that emphasizes synthesizing and organizing ideas, information, or experiences into new, more-complex interpretations and relationships
2. Coursework that emphasizes making judgments about the value of information, arguments, or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions
3. Coursework that emphasizes applying theories or concepts to practical problems or in new situations

Faculty Interactions Outside of Class

1. Frequency of discussing grades or assignments with an instructor
2. Frequency of talking about career plans with an instructor
3. Frequency of discussing ideas from class reading with faculty outside of class

¹Additional information about NSSE and CCSSE can be found at www.indiana.edu/~nsse/ and www.ccsse.org.

Institutional Support

1. Extent to which the institution provides support necessary for students to succeed academically
2. Extent to which the institution helps students cope with nonacademic responsibilities (work, family, etc.)
3. Extent to which the institution provides support to help students thrive socially

To create the scales, each item was standardized to a z-score with a mean of 0 and a standard deviation of 1. Next, the reliability of the proposed scales was assessed using Cronbach's alpha. The alphas for the scales ranged from .73 to .81.

The items within the groups (three items per group) were then summed and the scales were recoded as categorical variables with three response categories: low, medium, and high. The scale values were set on the basis of the mean and standard deviation for each scale. Values greater than one standard deviation below the mean were classified low, values within one standard deviation above or below the mean were classified medium, and values greater than one standard deviation above the mean were classified high.

Curricular emphasis (2-year institutions only)

Institutions that awarded 40% or more of their degrees in the following fields (as measured by IPEDS Database 1999–2000)² were coded as having a technical emphasis:

- Computer and Information Sciences
- Engineering
- Engineering-Related Technologies
- Science and Technology/Technician
- Construction Trades
- Mechanics and Repairers
- Transportation and Materials Moving
- Health Professions and Related Sciences

All others were coded as having an academic emphasis.

²U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey 1999–2000.

Dependent status

Respondent was considered a dependent if someone could claim him or her as a dependent on his or her 2002 taxes.

Four-year institution³

An institution legally authorized to offer and offering at least a 4-year program of college-level studies wholly or principally creditable toward a baccalaureate degree.

Grade point average

The following grade point averages are associated with the letter grade categories:

- Mostly As (3.75–4.0)
- As and Bs (3.25–3.74)
- Mostly Bs (2.75–3.24)
- Bs and Cs (2.25–2.74)
- Mostly Cs and Ds/Other (1.25–2.24)

Institutional selectivity (4-year institutions only)

Institutional selectivity was measured by Barron’s Guide 2000.⁴ Institutions with a Barron score of 1.00 (noncompetitive) were coded as nonselective, and all others were coded as selective.

³Definition taken from U.S. Department of Education, National Center for Education Statistics. (2000). *Digest of Education Statistics, 1999* (NCES 2000-031). Washington, DC: U.S. Government Printing Office.

⁴Barron’s Educational Series. (Eds.). (2000). *Barron’s Guide to the Most Competitive Colleges*. Hauppauge, NY: Barron’s Educational Series.

Major field of study

The following table was used to categorize reported academic majors:

Category	Majors
Business management	Business (accounting, business administration, marketing, management, etc.) Parks, recreation, leisure studies, sports management Public administration (city management, law enforcement, etc.)
Mathematics, science, and engineering	Computer and information sciences Engineering Mathematics Biological/life sciences (biology, biochemistry, botany, zoology, etc.) Physical sciences (physics, chemistry, astronomy, earth sciences, etc.)
Education	Education
Fine arts and humanities	Communications (speech, journalism, television/radio, etc.) Visual and performing arts (art, music, theater, etc.) Liberal/general studies Foreign languages and literature (French, Spanish, etc.) Ethnic, cultural studies, and area studies Humanities (English, literature, philosophy, religion, etc.)
Health	Health-related fields (nursing, physical therapy, health technology, etc.)
Social sciences	Social sciences (anthropology, economics, history, political science, psychology, sociology, etc.)
Vocational/technical Other	Cosmetology, law enforcement, chiropractic, etc. Agriculture Multidisciplinary/interdisciplinary studies (international relations, ecology, environmental studies, etc.) Undecided

Parent education

Parents’ education was coded as the highest educational attainment of either the respondent’s mother or father.

Public institution³

A school or institution controlled and operated by publicly elected or appointed officials and deriving its primary support from public funds.

Private institution³

A school or institution which is controlled by an individual or agency other than a state, a subdivision of a state, or the federal government, which is usually supported primarily by other than public funds, and the operation of whose program rests with other than publicly elected or appointed officials. Proprietary institutions were not included in this study.

Race/ethnicity

All respondents were asked two questions about their race and ethnicity. The first question asked them to indicate whether they were Hispanic or Latino. The second question asked them to choose one or more of the following groups to describe themselves:

- White
- Black or African American
- Asian
- American Indian or Alaskan Native
- Native Hawaiian or other Pacific Islander

Individuals who responded “yes” to the first question were coded as Hispanic, regardless of their answer to the second question.

If the respondent was non-Hispanic and indicated only one race, then he or she was grouped as the race indicated. If the respondent was non-Hispanic and indicated multiple races, then he or she was coded as “other/multiracial.” For reporting purposes, “Asian” and “Native Hawaiian or other Pacific Islander” were collapsed into one category. There were too few cases in the “other/multiracial” category to reliably estimate their literacy proficiencies.

Two-year institution³

An institution legally authorized to offer and offering at least a 2-year program of college-level studies which terminates in an associate degree or is principally creditable toward a baccalaureate degree.



a b c d e f g h i j k l m n o p q r s t

u v w x y t u v z a b f g h i j k l m

n o p q r s t u v w x y z a b c d e f

g h i j k l m v w u v w x y z a x y

z a b c d e f g h i j k l m n o p q r s

t u v w x y z a b c d e f g h i j k l

m n o p q r s t u v w x y z a b c d

e f g h i j k l m n o p q r s t u v w

x y z a b c d e f g h i j k l m n o p

q r s t u v w x y z a b c d e f g h i j

k l m n o p q r s t u v w x y z a b c

d n o p q r s t u v w

x g h i j k l m n o p

q z a b c d e f g h i j

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