Introduction

Using written information is an important part of everyday life in the United States. Adults in most workplaces are surrounded by written information: health and safety postings, brochures describing their benefits, instruction manuals, memos, reports, and e-mail. Parents of school-aged children often receive written notices and forms from their children’s schools: field trip permission slips, flyers about parent meetings or parent-teacher conferences, descriptions of course offerings, and applications for determining eligibility for free lunches and subsidized medical care. Older adults receive mailings explaining their Social Security and Medicare benefits. The millions of adults who take medication encounter labels explaining dosages, timing for taking the medication, interactions with other medications or food, and possible side effects. Getting a driver’s license, registering to vote, and renting or purchasing a place to live all require reading and understanding written information.

The 2003 National Assessment of Adult Literacy assessed the English literacy of adults (ages 16 and older) in the United States for the first time since the 1992 National Adult Literacy Survey. The assessment was administered to approximately 18,000 adults living in households and to 1,200 prison inmates. This report presents findings from the 2003 assessment and describes changes in adult literacy since 1992.
It describes how American adults 16 years of age and older with varying literacy levels use written information in workplace, family, and community settings at the beginning of the 21st century. The report also examines the relationship between literacy and formal education and between literacy and health.

Additional reports are planned using data from the 2003 NAAL, including a report that examines the basic reading skills of America’s adults and explores the relationship between basic reading skills and literacy. An in-depth look at adults who were at the lowest literacy levels in 2003 will also be presented in that report. A separate report will describe the literacy of prison inmates. The report *The Health Literacy of America’s Adults* was published in September 2006 (Kutner, Greenberg, Jin, and Paulsen 2006).

**Defining and Measuring Literacy**

**Defining Literacy**

Unlike indirect measures of literacy—which rely on self-reports and other subjective evaluations of literacy and education—the 1992 and 2003 adult literacy assessments measured literacy directly by tasks representing a range of literacy activities that adults are likely to face in their daily lives.

The literacy tasks in the assessment were drawn from actual texts and documents, which were either used in their original format or reproduced in the assessment booklets. Each question appeared before the materials needed to answer it, thus encouraging respondents to read with purpose.

Respondents could correctly answer many assessment questions by skimming the text or document for the information necessary to perform a given literacy task. All tasks were open-ended.

The 2003 adult literacy assessment covered the same content as the 1992 assessment, and both assessments used the same 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 implies that literacy goes beyond simply being able to sound out or recognize words and understand text. A central feature of the definition is that literacy is related to achieving an objective and that adults often read for a purpose.

**Measuring Literacy**

As in 1992, three literacy scales—prose literacy, document literacy, and quantitative literacy—were used in the 2003 assessment:

- **Prose literacy.** The knowledge and skills needed to perform prose tasks (i.e., to search, comprehend, and use information from continuous texts). Prose examples include editorials, news stories, brochures, and instructional materials. Prose texts can be further broken down as expository, narrative, procedural, or persuasive.

- **Document literacy.** The knowledge and skills needed to perform document tasks (i.e., 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 and food labels.

- **Quantitative literacy.** The knowledge and skills required to perform quantitative tasks (i.e., to identify and perform computations, either alone or sequentially, using numbers embedded in printed materials). Examples include balancing a checkbook, figuring out a tip, completing an order form, and determining the amount of interest on a loan from an advertisement.

Table 1-1 shows the correlations among the prose, document, and quantitative scales in 2003. All the correlations are between .86 and .89. In chapter 12
of the Technical Report and Data File User's Manual for the 1992 National Adult Literacy Survey, Rock and Yamamoto (2001) examined the correlations among the three scales and concluded that even though the scales were highly related, there were still group differences across the scales, indicating that the scales did not all measure the same construct.

Several changes were made to the 1992 data. Several items were recategorized onto different literacy scales (prose to document). In addition, several dichotomous items were recored using the partial credit model. To accommodate these changes, the 1992 data were recalibrated to provide item characteristic parameters comparable to the 2003 data. Data from the common test blocks used in both the 1992 and 2003 assessments were pooled for this rescaling. Following standard psychometric procedure for linking across years, the population mean and standard deviation of the 1992 scales were kept constant in 1992 and 2003, even though the rescaling changed the item parameters slightly. Because of the rescaling, the 1992 results in this report may differ slightly from the findings reported following the 1992 data collection.

**Background Questionnaire**

The 2003 National Assessment of Adult Literacy household background questionnaire was used to collect data about various demographic and background characteristics. A primary goal of the assessment was to measure literacy trends between 1992 and 2003, so many of the questions on the 2003 background questionnaire were identical to questions on the 1992 background questionnaire. The 2003 background questionnaire also included some new questions that were added in response to input from stakeholders and users of the 1992 data.

A separate background questionnaire was developed for the prison study. The prison background questionnaire was used to collect demographic data on inmates and provided contextual data on their experiences in prison that were related to literacy, including participation in classes, job training, and prison work assignments.

**Establishing Literacy Levels**

The Committee on Performance Levels for Adult Literacy, appointed by the National Research Council's Board on Testing and Assessment (BOTA), recommended a set of performance levels for the 2003 assessment (Hauser et al. 2005). Drawing on the committee's recommendations, the U.S. Department of Education decided to report the assessment results by using four literacy levels for each scale. Table 1-2 summarizes the knowledge, skills, and capabilities that adults needed to demonstrate to be classified into one of the four levels. Figures 1-1, 1-2, and 1-3 show the types of tasks and where they are located on the prose, document, and quantitative scales.

BOTA's Committee on Performance Levels for Adult Literacy also recommended reporting the 2003 results by using a separate category: nonliterate in English. Adults were considered to be nonliterate in English if they were unable to complete a minimum number of simple literacy questions or if they were unable to communicate in English or Spanish. Adults who were classified as nonliterate in English because they could not complete a minimum number of simple literacy questions were generally able to complete the background questionnaire, which was administered orally in either English or Spanish; for reporting purposes, they
Table 1-2. Overview of the literacy levels

<table>
<thead>
<tr>
<th>Level and definition</th>
<th>Key abilities associated with level</th>
</tr>
</thead>
</table>
| **Below Basic** indicates no more than the most simple and concrete literacy skills. Score ranges for Below Basic: Prose: 0–209 Document: 0–204 Quantitative: 0–234 | Adults at the Below Basic level range from being nonliterate in English to having the abilities listed below:  
- 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 |
- 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 |
- 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 |
| **Proficient** indicates skills necessary to perform more complex and challenging literacy activities. Score ranges for Proficient: Prose: 340–500 Document: 335–500 Quantitative: 350–500 |  
- 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 |

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

Figure 1-1. Difficulty of selected prose literacy tasks: 2003

- 409 Infer the purpose of an event described in a magazine article.
- 403 Find the information required to define a medical term by searching through a complex document.
- 361 Evaluate information to determine which legal document is applicable to a specific healthcare situation.
- 345 Compare viewpoints in two editorials with contrasting interpretations of scientific and economical evidence.
- 345 Compare and contrast the meaning of metaphors in a poem.
- 332 Compare two different systems of government, using information in a complex text that is not organized with section headers or other organizing devices.
- 331 List two facts from a business magazine article that explain why a marketer quoted in the article has a particular opinion.
- 304 Infer the meaning of a metaphor in a poem.
- 284 Summarize the work experience required for a specific job, based on information in a newspaper job advertisement.
- 266 Explain why the author of a first-person narrative chose a particular activity instead of an alternative activity.
- 254 Find information in a pamphlet for prospective jurors that explains how citizens were selected for the jury pool.
- 245 Find information in a newspaper article that explains how students who participate in a school program benefit from the program.
- 241 Explain the meaning of a metaphor used in a narrative.
- 213 Find, in a long narrative passage, the name of the person who performed a particular action.
- 199 Find information in a short, simple prose passage.
- 190 Determine how long an event lasted, based on information in a short newspaper article.
- 183 Identify how often a person should have a specified medical test, based on information in a clearly written pamphlet.
- 161 Identify what it is permissible to drink before a medical test, based on a short set of instructions.

NOTE: The position of a question on the scale represents the average scale score attained by adults who had a 67 percent probability of successfully answering the question. Only selected questions are presented. Scale score ranges for performance levels are referenced on the figure.

Figure 1-2. Difficulty of selected document literacy tasks: 2003

- Interpret survey data presented in a nested table.
- Construct financial information presented in a table regarding the differences between various types of credit cards.
- Apply information given in a text to graph a trend.
- Find the age range during which children should receive a particular vaccine, using a chart that shows all the childhood vaccines and the ages children should receive them.
- Follow directions, using a clearly labeled map.
- Find the time a television program ends, using a newspaper television schedule that lists similar programs showing at different times on different channels.
- Enter product numbers for office supplies on an order form, using information from a page in an office supplies catalog.
- Summarize what the articles in a specified section of a magazine are about, using information in the magazine’s table of contents.
- Find a table in an almanac with information on a specified topic.
- Determine and categorize a person’s body mass index (BMI) given the person’s height and weight, a graph that can be used to determine BMI based on height and weight, and a table that categorizes BMI ranges.
- Locate the intersection of two streets on a clearly labeled map.
- Find the phone number to call to get directions to a job fair, based on information presented in a newspaper job advertisement.
- Find the percentage of a market a particular retailer had in 1992, based on information presented in a bar graph.
- Circle the date of a medical appointment on a hospital appointment slip.

NOTE: The position of a question on the scale represents the average scale score attained by adults who had a 67 percent probability of successfully answering the question. Only selected questions are presented. Scale score ranges for performance levels are indicated on the figure.

Figure 1-3. Difficulty of selected quantitative literacy tasks: 2003

Quantitative literacy scale

- 470 Calculate an employee's share of health insurance costs for a year, using a table that shows how the employee's monthly cost varies with income and family size.

- 404 Determine the number of units of flooring required to cover the floor in a room, when the area of the room is not evenly divisible by the units in which the flooring is sold.

- 356 Calculate the yearly cost of a specified amount of life insurance, using a table that gives cost by month for each $1,000 of coverage.

- 370 Determine whether a car has enough gasoline to get to the next gas station, based on a graph of the car's fuel gauge, a sign stating the miles to the next gas station, and information given in the question about the car's fuel use.

- 301 Calculate the total cost of ordering office supplies, using a page from an office supplies catalog and an order form.

- 291 Determine what time a person can take a prescription medication, based on information on the prescription drug label that relates timing of medication to eating.

- 284 Perform a two-step calculation to find the cost of three baseball tickets, using an order form that gives the price of one ticket and the postage and handling charge.

- 257 Calculate the weekly salary for a job, based on hourly wages listed in a job advertisement.

- 245 Locate two numbers in a bar graph and calculate the difference between them.

- 257 Calculate the cost of a sandwich and salad, using prices from a menu.

- 222 Compare two prices by identifying the appropriate numbers and subtracting.

- 217 Calculate the price difference between two appliances, using information in a table that includes price and other information about the appliances.

- 178 Calculate the change from a $20 bill after paying the amount on a receipt.

- 138 Add two numbers to complete an ATM deposit slip.

NOTE: The position of a question on the scale represents the average scale score attained by adults who had a 67 percent probability of successfully answering the question. Only selected questions are presented. Scale score ranges for performance levels are referenced on the figure.

were included in the Below Basic literacy level.
Adults who were classified as nonliterate in English
because they were unable to communicate in either
English or Spanish could not complete the back-
ground questionnaire; they are not included in the
analyses in this report that rely on background data.
Adults who could not be tested because of a cogni-
tive or mental disability are also not included in the
analyses in this report, but in the absence of any
information about their literacy abilities, they are
not considered to be nonliterate in English.

Conducting the Survey

The 2003 National Assessment of Adult Literacy
included two samples: (1) adults ages 16 and older
living in households and (2) inmates ages 16 and
older in federal and state prisons. Each sample was
weighted to represent its share of the total population
of the United States, and the samples were combined
for reporting. Household data collection was
conducted from March 2003 through February 2004;
prison data collection was conducted from March
through July 2004. For the household sample, the
to screen response rate was 82 percent and the back-
ground questionnaire response rate was 76 percent.
The final household sample response rate was 62
percent. For the prison sample, 97 percent of prisons
who were selected for the study agreed to participate
and the background questionnaire response rate for
prison inmates was 91 percent. The final prison sam-
ple response rate was 88 percent.

Household interviews were conducted in respon-
dents’ homes; prison interviews usually took place in
a classroom or library in the prison. Whenever possi-
ble, interviewers administered the background ques-
tionnaire and assessment in a private setting.

Assessments were administered one-on-one using a
computer-assisted personal interviewing system
(CAPI) programmed into laptop computers.
Respondents were encouraged to use whatever aids
they normally used when reading and when per-
forming quantitative tasks, including eyeglasses, mag-
nifying glasses, rulers, and calculators.

Three percent of adults were unable to participate in
the assessment because they could not communicate
in either English or Spanish or because they had a
mental disability that prevented them from being
tested. Literacy scores for these adults could not be
estimated, and they are not included in the results
presented in this report.

Additional information on sampling, response rates,
and data collection procedures is in appendix C.

Interpretation of Results

The statistics presented in this report are estimates of
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 assessment. Estimates of performance of the
population and groups within the population were
calculated by using sampling weights to account for
the fact that the probabilities of selection were not
identical for all respondents. Information about the
uncertainty of each statistic that takes into account
the complex sample design was estimated by using
Taylor series procedures to estimate standard errors.

The analyses in this report examine differences rela-
ted to literacy based on self-reported background
characteristics among groups in 2003, as well as
changes within groups between 1992 and 2003, by
using standard t tests to determine statistical signifi-
cance. Statistical significance is reported at \( p \leq .05 \).
Differences between averages or percentages that are
statistically significant are discussed by using compar-
ative terms such as higher or lower. Differences that are

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1 Nonresponse bias analyses are discussed on page 102 of the report.
All percentages in this section are weighted. For the unweighted per-
centages, see tables C-1 and C-2 in appendix C.
not statistically significant either are not discussed or are referred to as “not statistically significant.” Failure to find a statistically significant difference should not be interpreted as meaning that the estimates are the same; rather, failure to find a difference may also be due to measurement error or sampling.

Detailed tables with estimates and standard errors for all tables and figures in this report are in appendix D. Appendix C includes more information about the weights used for the sample and the procedures used to estimate standard errors and statistical significance.

Cautions in Interpretation

The purpose of this report is to examine the relationship between literacy and various self-reported background factors. This report is purely descriptive. Readers are cautioned not to draw causal inferences based solely on the results presented here. It is important to note that many of the variables examined in this report are related to one another, and complex interactions and relationships have not been explored here.

Organization of the Report

Chapter 2 of the report presents the prose, document, and quantitative literacy for the adult population of the United States as a whole and discusses how literacy changed between 1992 and 2003. The chapter also examines how literacy varies across groups with different demographic characteristics, including gender, race and ethnicity, language background, age, and household income. With the exception of the analyses related to household income, all the analyses in the chapter are based on the combined household and prison samples.

Chapter 3 explores the relationship between education and literacy and also discusses how that relationship changed between 1992 and 2003. In addition to focusing on educational attainment, the analyses in the chapter examine the relationship between literacy and other types of adult education, including basic skills classes, English as a second language classes, and information technology (IT) certification. The chapter also includes a focus on educational attainment by race and ethnicity. All analyses in the chapter are based on the combined household and prison samples.

Chapter 4 examines how adults with different levels of literacy functioned in the labor market and the workplace and also discusses changes between 1992 and 2003. Topics explored in the chapter include employment status, occupation, weekly wage or salary, job training, and participation in public assistance programs. All analyses in the chapter are based on the household sample only because prison inmates are not part of the same labor market as adults living in households.

Chapter 5 examines how parents, grandparents, and guardians with different literacy levels interacted with the children living in their homes around issues related to literacy and school. The chapter also describes the relationship between the literacy of adults living in a home and the likelihood that the home had educational resources—including books and computers—that encourage children to read and to actively engage in other academic and intellectual pursuits. Analyses in the chapter are limited to the household sample because prison inmates do not have the same opportunity to interact with children as do adults living in households. Additionally, because the types of educational activities that parents do with their children change as the children get older, many of the analyses in the chapter are limited to parents or households with children in an age range at which the activity being discussed is likely to occur.

Chapter 6 examines how adults with different literacy levels participated in government and community affairs by voting, staying informed, and volunteer-
ing. Because most of the background questions on which this chapter is based were new in 2003, the analyses in the chapter are based on the 2003 sample only. Prison inmates are not included in the analyses in this chapter because they are not able to vote or participate in community activities outside the prison and do not have the same opportunities to stay informed about issues related to current events, public affairs, and the government.

The analyses for chapters 2 and 3 present results from all three literacy scales: prose, document, and quantitative. The analyses in chapters 4, 5, and 6—which look at literacy in workplace, family, and community settings—present some results using only one or two of the three scales. In these instances, results for the other scale(s) are presented in appendix E.

Throughout the report, 1992 results are presented in grey or black and 2003 results are presented in color. The years are also labeled on the figure axes next to the corresponding results.