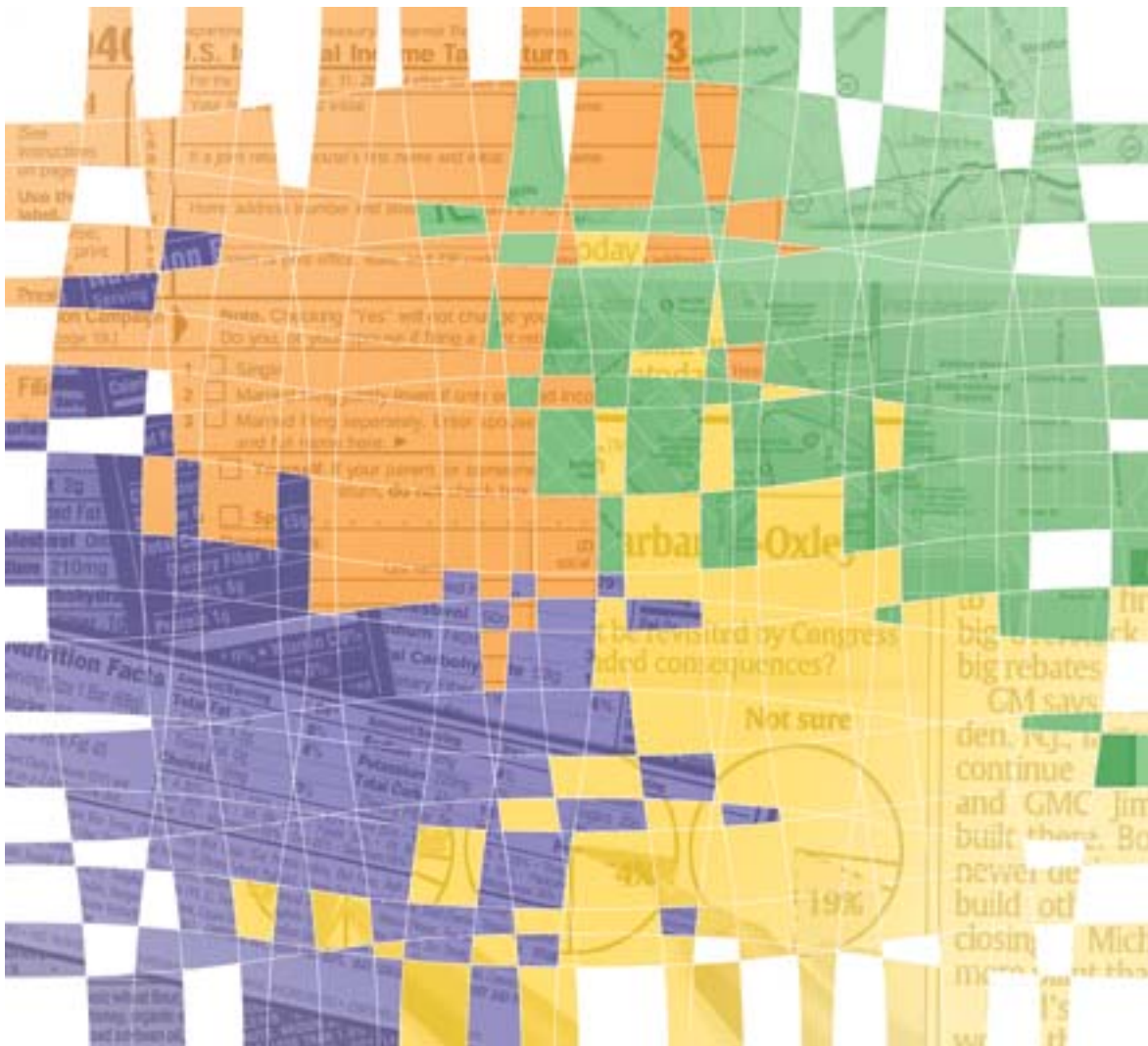
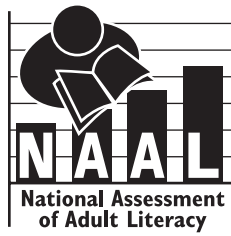


Key Concepts and Features of the 2003 National Assessment of Adult Literacy

U.S. Department of Education
Institute of Education Sciences
NCES 2006-471





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Key Concepts and Features of the 2003 National Assessment of Adult Literacy

December 2005

Sheida White
National Center for
Education Statistics

Sally Dillow
Education Statistics
Services Institute

Sheida White
Project Officer
National Center for
Education Statistics

U.S. Department of Education

Margaret Spellings
Secretary

Institute of Education Sciences

Grover J. Whitehurst
Director

National Center for Education Statistics

Mark Schneider
Commissioner

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U.S. Department of Education
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Washington, DC 20006-5651

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Content Contact

Sheida White
(202) 502-7473
sheida.white@ed.gov

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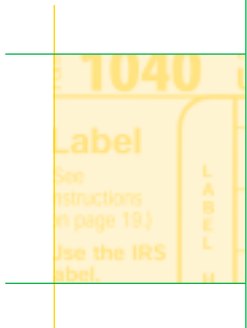
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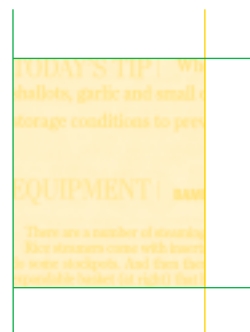
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INTRODUCTION

What is the 2003 NAAL?

Sponsored by the National Center for Education Statistics (NCES) in the U.S. Department of Education's Institute of Education Sciences, the 2003 National Assessment of Adult Literacy (NAAL) is a nationally representative assessment of literacy among adults (age 16 and older) residing in households and prisons in the United States. It is the first assessment of the nation's progress in adult literacy since the 1992 National Adult Literacy Survey (NALS).

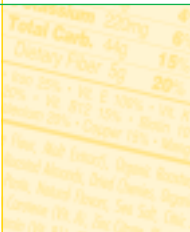
What do the results cover?

Results from the 2003 NAAL cover the status and progress of literacy in the nation, the literacy skill levels of American adults (including the least-literate adults), various factors associated with literacy, and the application of literacy skills to health-related materials. NAAL also will provide the results of state-level assessments for six participating states and a national study on literacy among the prison population.

The first results from the 2003 NAAL appear in *A First Look at the Literacy of America's Adults in the 21st Century* (Kutner, Greenberg, and Baer 2005). Later reports will provide additional results from and information about the assessment.

What is the purpose of this publication?

The 2003 NAAL is a complex assessment with several components and various types of data. The primary purpose of this publication is to describe the assessment's key features and data types. Thus, the publication covers the critical concepts and features carried over from the 1992 assessment, as well as those new to the 2003 assessment—for example, new performance levels that are used to report results (see section 2) and new components that provide expanded data on the least-literate adults and on the role of basic skills in adult literacy performance (see section 3). By providing an overall picture of important goals and aspects of the 2003 NAAL, the publication provides a context for interpreting the results.



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1

VIEWING ADULT LITERACY FROM A FUNCTIONAL PERSPECTIVE

NAAL measures how well U.S. adults perform tasks with printed materials

As a part of their everyday lives, adults in the United States interact with a variety of printed and other written materials to perform a multitude of tasks. A comprehensive list of such tasks would be virtually endless. It would include such activities as balancing a checkbook, following directions on a prescription medicine bottle, filling out a job application, consulting a bus schedule, correctly interpreting a chart in the newspaper, and using written instructions to operate a voting machine.

The National Assessment of Adult Literacy (NAAL) measures the ability of a nationally representative sample of adults to perform literacy tasks similar to those that they encounter in their daily lives. Statistical procedures ensure that NAAL participants represent the entire population of U.S. adults who are age 16 and older and live in households or prisons. In 2003, the 19,714 adults who participated in NAAL represented a U.S. adult population of about 222 million. (This population estimate was calculated by NAAL researchers based on data from the U.S. Census Bureau's 2003 Current Population Survey and the Bureau of Justice Statistics' midyear 2003 National Prisoner Statistics.)

Like other adults, NAAL participants bring to literacy tasks a full range of backgrounds, experiences, and skill levels. Like real-life tasks, NAAL tasks vary with respect to the difficulty of the materials used as well as the complexity of the actions to be performed. However, in order to be fair to all participants, none of the tasks require specialized background knowledge, and all of them were reviewed for bias against particular groups.

Adults need literacy skills in order to function

Literacy is not a single skill or quality that one either possesses or lacks. Rather, it encompasses various types of skills that different individuals possess to varying degrees. There are different levels and types of literacy, which reflect the ability to perform a wide variety of tasks using written materials that differ in nature and complexity. A common thread across all literacy tasks is that each has a purpose—whether that purpose is to pay the telephone bill or to understand a piece of poetry. All U.S. adults must successfully perform literacy tasks in order to adequately function—that is, to meet personal and employment goals as well as contribute to the community.

NAAL tasks reflect a definition of literacy that emphasizes the use of written materials to function adequately in one's environment and to develop as an individual. Of course, the actual literacy tasks that individuals must perform in their daily lives vary to some extent depending on the nature of their work and personal goals. However, virtually all literacy tasks require certain underlying skills, such as the ability to read and understand common words. NAAL measures adults' performance on a range of tasks mimicking actual tasks encountered by adults in the United States. Adults with very low levels of performance on NAAL tasks may be unable to function adequately in 21st century America.



NAAL examines three literacy areas—prose, document, and quantitative

NAAL reports a separate score for each of three literacy areas:

Prose literacy refers to the knowledge and skills needed to perform prose tasks—that is, to search, comprehend, and use continuous texts. Prose examples include editorials, news stories, brochures, and instructional materials.

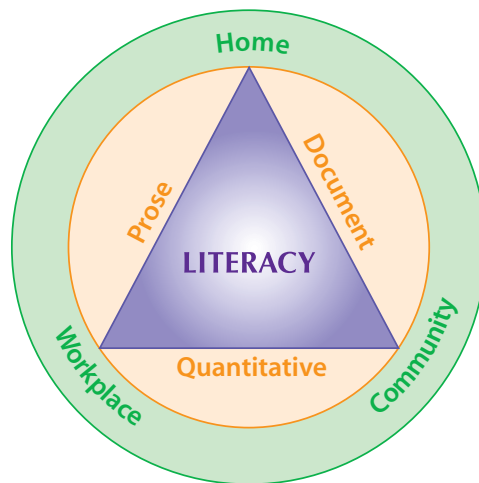
Document literacy refers to the knowledge and skills needed to perform document tasks—that is, to search, comprehend, and use noncontinuous texts in various formats. Document examples include job applications, payroll forms, transportation schedules, maps, tables, and drug or food labels.

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

The *Framework for the 2003 National Assessment of Adult Literacy* (White and McCloskey forthcoming) discusses the three literacy areas in detail. Underlying the prose, document, and quantitative tasks is NAAL's *task-based definition of literacy* (figure 1).

Figure 1. Task-based definition of literacy

Literacy is the ability to use printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential.



NAAL's task-based definition of literacy implies the ability to meet literacy demands at home, in the workplace, and in the community by performing prose, document, and quantitative tasks.

SOURCE: White, S., and McCloskey, M. (forthcoming). *Framework for the 2003 National Assessment of Adult Literacy* (NCES 2006-473). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

Sample assessment tasks have been released to the public

To provide a clearer picture of the types of tasks that NAAL participants are asked to perform, the National Center for Education Statistics (NCES) has released numerous assessment tasks (i.e., test questions) that either were used in the 2003 NAAL or are similar to those used in the 2003 NAAL. Most of these tasks were used in the 1992 National Adult Literacy Survey (NALS), from which NAAL evolved. Below are a few examples. Almost 100 tasks are currently available on the NAAL website (<http://nces.ed.gov/naal/TestQuestions.asp>). NCES plans to make more assessment tasks available in the future, including many of those used in 2003. However, not all of the tasks used in the 2003 administration of NAAL can be made public, because some of them will be reused in future administrations to allow comparisons across time.

Figure 2 shows an easy prose task (performed correctly by 83 percent of adults). This task requires participants to search a short text to locate a single piece of easily identifiable information. In more difficult prose tasks, the requirements include making inferences, comparing and contrasting information, and synthesizing pieces of information from long and complex passages.

Figure 2. Example of an easy prose task

Underline the sentence that tells how the Social Security Administration defines the term "blind."

WHAT IS SSI?

SSI stands for supplemental security income. It is a Federal program run by the Social Security Administration. It pays monthly checks to aged, blind, and disabled people who do not have much income or resources.

Under SSI, *aged* means you are 65 or older. *Blind* means the vision in your better eye is 20/200 or less or you have a limited visual field of 20 degrees or less. *Disabled* means you have a severe physical or mental condition that keeps you from doing any substantial gainful work, and medical evidence shows it is expected to last at least 12 months or result in death.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1992 National Adult Literacy Survey (NALS). Available in the Sample Questions section of the NAAL website (<http://nces.ed.gov/naal/TestQuestions.asp>).

Figure 3 shows a moderately difficult document task (performed correctly by 56 percent of adults). This task requires participants to determine which type of sandpaper to buy for a specific job. To do this, they need to identify the correct row, column, and cell in a complex table that contains subcategories. To select the correct row, participants must find the “WOOD” category and the “Preparation for Sealing” subcategory in the list at the far left of the table. To select the correct column and cell, they must first identify “GARNET” as the main column heading that is relevant, then follow the row they selected to the shaded cell under this main heading. Finally, they must connect the abbreviation “F” in the subordinate column heading with the word “Fine” in the key below the table.

More difficult document tasks have requirements such as comparing, contrasting, and drawing high-level inferences from multiple pieces of information embedded in complex documents. At the other end of the spectrum, the simplest document tasks require only actions such as signing a form in the right place or appropriately filling in blanks.

Figure 3. Example of a moderately difficult document task

You need to smooth wood in preparation for sealing and plan to buy garnet sandpaper. What type of sandpaper should you buy?

ABRASIVE SELECTION GUIDE																			
MATERIAL & OPERATION	PRODUCTION®					GARNET				WETORDRY®				PRE-CUT®		EMERY			
	EC	C	M	F	EF	C	M	F	EF	VF	EF	SF	UF	VF	EF	C	M	F	
WOOD																			
Paint Removal	■																		
Heavy Stock Removal						■													
Moderate Stock Removal			■				■												
Preparation for Sealing				■				■											
After Sealer					■				■										
Between Coats										■					■				
After Final Coat											■								
METAL																			
Rust and Paint Removal	■																■		
Light Stock Removal																			
Preparation for Priming			■											■				■	
Finishing and Polishing					■														■
After Primer										■									
Between Coats											■					■			
After Final Coat												■							
PLASTIC & FIBERGLASS																			
Shaping	■																		
Light Stock Removal			■																
Finishing & Scuffing					■										■				

EC = Extra Coarse C = Coarse M = Medium F = Fine VF = Very Fine EF = Extra Fine SF = Super Fine UF = Ultra Fine

SAFETY INFORMATION:

- Wear approved safety goggles when sanding.
- Use particle/dust mask or other means to prevent inhalation of sanding dust.
- When using power tools, follow manufacturer's recommended procedures and safety instructions.

NOTE: Reprinted by permission of and copyrighted by the 3M Company.
 SOURCE: U.S. Department of Education, National Center for Education Statistics, 1992 National Adult Literacy Survey (NALS). Available in the Sample Questions section of the NAAL website (<http://nces.ed.gov/naal/TestQuestions.asp>).

Figure 4 shows one of the more difficult quantitative tasks (performed correctly by 29 percent of adults). This task requires using information on an automobile maintenance record to compute the gas mileage since the previous fill-up. To perform this task, participants must determine which numbers on the maintenance record are relevant to the task and what specific computations must be performed to get the answer. The appropriate steps are to subtract the mileage on March 2 (42,775) from the mileage on March 9 (43,083), then divide the result (308 miles) by the number of gallons used (12.5). If participants perform these computation steps correctly, they will find that the car got about 25 miles per gallon since it was filled with gas on March 2. If participants get any of the computation steps wrong, however, they will not obtain the correct answer. A simpler task might involve solving a single equation using only numbers that actually appear in the document.

Figure 4. Example of a difficult quantitative task

On March 9 you filled your car with gas. Calculate how many miles per gallon your car got since you filled it up with gas on March 2.

AUTOMOBILE MAINTENANCE RECORD					
Month of <u>March</u> 19 <u>92</u>					
Date	Mileage	Gasoline		Repairs	Oil and Grease
		No. Gals	Amount		
1					
2	<i>42,775</i>	<i>13.1</i>	<i>19.10</i>		
3					
4					
5					
6					
7					
8					
9	<i>43,083</i>	<i>12.5</i>	<i>18.25</i>		
10					
11					
12					

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1992 National Adult Literacy Survey (NALS). Available in the Sample Questions section of the NAAL website (<http://nces.ed.gov/naal/TestQuestions.asp>).

NAAL includes a new measure of health literacy

The U.S. Department of Health and Human Services (HHS) has adopted the following definition of health literacy: “The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions” (Selden et al. 2000, cited in HHS 2000). Although health literacy involves factors that NAAL cannot measure—such as the ability to communicate orally—NAAL will provide a portrait of one important aspect of the health literacy of the U.S. adult population.

NAAL’s health literacy component is the first-ever national assessment designed specifically to measure adults’ ability to use literacy skills to read and understand health-related information. Health-related materials used in the assessment include medication information, medical instructions, health insurance forms, and prevention and wellness information. Nearly one-fifth of the NAAL tasks are health related, and all participants perform some health-related tasks. One example appears in figure 5.

Each health-related task is also classified as a prose, document, or quantitative task. Thus, health-related tasks are included with other tasks when calculating the prose, document, and quantitative literacy scores. However, NAAL also includes a separate health literacy score, based solely on the health-related tasks. This score will measure the ability of adults with various demographic and background characteristics to effectively use health-related information, provide input for the development of health-related information and programs for these adults, and establish a baseline for tracking progress in future assessments.

Figure 5. Example of a health-related task

Copy three food sources, named in the almanac, that contain vitamin E.

Vitamin E (tocopherol)—helps protect red blood cells. May aid the circulatory system and counteract the aging process. Best sources: wheat germ, whole grains, eggs, peanuts, organ meats, margarine, vegetable oils, green leafy vegetables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1992 National Adult Literacy Survey (NALS). Available in the Sample Questions section of the NAAL website (<http://nces.ed.gov/naal/TestQuestions.asp>).

2

COMPARING ADULT LITERACY IN 1992 AND 2003

NAAL measures the three types of literacy that were measured in 1992

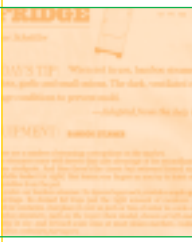
One important goal of the 2003 National Assessment of Adult Literacy (NAAL) is to provide information on changes in adult literacy performance since 1992. Accordingly, the 2003 NAAL provides scores for the same three literacy areas—prose, document, and quantitative—that were examined in the 1992 National Adult Literacy Survey (NALS). In order to provide trend data on adult literacy in the future, the National Center for Education Statistics (NCES) plans to conduct assessments of adult literacy periodically.

Cross-year comparisons are available for the nation, one state, and prisons

Changes over time in the literacy of adults living in the United States are of interest to diverse audiences, ranging from the general public to policymakers. For example, policymakers may use information about literacy changes to justify the creation or improvement of literacy programs, to provide grants for further research, or for accountability purposes. Libraries may use this information to help ensure that their policies and materials are appropriate for a broad spectrum of adults. Education researchers may explore possible causes of literacy changes and possible methods for promoting higher levels of literacy among adults. Members of the general public may be interested to know whether recent changes in the nation's demographic profile have been accompanied by changes in adult literacy.

In addition to results for the nation, both the 1992 NALS and the 2003 NAAL provide the results of state-level assessments for those states that chose to participate in state assessments. Participating states can compare their state with other participating states and with the nation. In 2003, the following states participated in state assessments: Kentucky, Maryland, Massachusetts, Missouri, New York, and Oklahoma. State-level results can help states determine where to target investment in adult education, training programs, and other services. In addition, the results establish a baseline for future assessments. Because New York participated in 1992 as well as in 2003, the 2003 results for New York include information on state-level changes across time.

Like the 1992 NALS, the 2003 NAAL includes an assessment of literacy among the prison population. This population includes only adults in state and federal prisons, not those in local jails or other types of institutions. (Sampled adults living in households but temporarily in local jails—where the median stay is about 2 weeks—were considered part of the household population, not the prison population. Since the data collection period was about 10 months long, these adults were interviewed in their homes when they got out of jail.) In both assessment years, the prison sample was representative of the prison population at the national level, allowing separate literacy estimates for this population as well as analysis of changes across time. Results provide demographic and performance data for the prison population in comparison to the general U.S. adult population.



Design and analysis methods ensure accurate comparisons across years

In 1992 and 2003, the same sampling and data collection procedures were used to ensure that comparable populations were assessed in both years. The 2003 NAAL also used some of the same assessment tasks that were used in the 1992 NALS. About 45 percent of the tasks used in 2003 were drawn from those used in 1992, while the remainder were newly created for the 2003 assessment. According to the widely used reference work *Test Equating* (Kolen and Brennan 1995, p. 248), using 20 percent of the same items is sufficient to allow for comparisons between tests, provided that new items are developed following specifications similar to those used in developing the old items. The newly created NAAL tasks were modeled after the 1992 tasks—having about the same average level of difficulty, requiring similar skills for successful completion, and covering the same content areas (home and family, health and safety, community and citizenship, consumer economics, work, and leisure and recreation). Item response theory (IRT; see, e.g., Baker 2001) was employed to link the 1992 and 2003 scales using the tasks common to both years. Another step taken to ensure accurate comparisons across years was to recompute the 1992 scores using the 2003 analysis procedures, which differed in some respects from those originally used to analyze the 1992 data (e.g., the rules for dealing with missing data had been modified). In addition, results from both 1992 and 2003 were reported using a newly developed set of performance levels (discussed below).

Performance levels describe task performance for various score ranges

For some purposes, it is useful to report average scores. For example, the average prose, document, or quantitative literacy score of one group (e.g., males) can be compared with that of another (e.g., females). Also, the average score of a particular group or of the entire population of U.S. adults residing in households and prisons in 1992 can be compared with the score in 2003.

Another useful way to report results is by grouping adults with similar scores into a relatively small number of categories, generally referred to as *performance levels*. Reporting the percentages of adults scoring at various performance levels is somewhat analogous to reporting the percentages of students receiving various letter grades (e.g., an A or a B) on a test. Performance levels serve as a useful tool for identifying and characterizing the relative strengths and weaknesses of adults falling within various ranges of literacy ability. Breaking the adult population into these levels allows analysts, policymakers, and others to examine and discuss the typical performance and capabilities of specified proportions of the adult population.

NCES originally used five “literacy levels” to report the 1992 results. In preparation for reporting on adult literacy performance in 2003, NCES asked the National Research Council (NRC) to evaluate the original 1992 literacy levels and recommend a set of performance levels that could be used in reporting 2003 results and also applied to 1992 results in order to make comparisons across years. In response to NCES’s request, NRC established the Committee on Performance Levels for Adult Literacy. A preliminary report released by the committee in April 2005 (Hauser et al. 2005) examines the original 1992 literacy levels, outlines the newly developed performance levels, and details the methodology and rationale underlying the new levels. The committee’s report discusses each step in the process of developing the new levels. The following brief discussion highlights only a few key points.

New levels were developed in an open, public, and scientific way

According to the Committee on Performance Levels for Adult Literacy (Hauser et al. 2005), the original 1992 literacy levels “were not meant to reflect policy-based judgments about expectations for adult literacy. That is, the procedures used to develop the assessment did not involve identifying the level of skills adults need in order to function adequately in society. When findings . . . were released, however, the . . . levels were interpreted and discussed as if they represented standards for the level of literacy adults should have,” leading to “unsupported inferences.” The committee concluded that “some of the more important details about the process for determining the 1992 . . . levels were not specified” and that “a more open and public process combined with more explicit documentation would lead to better understanding of how the . . . levels were determined and what inferences could be based on them.”

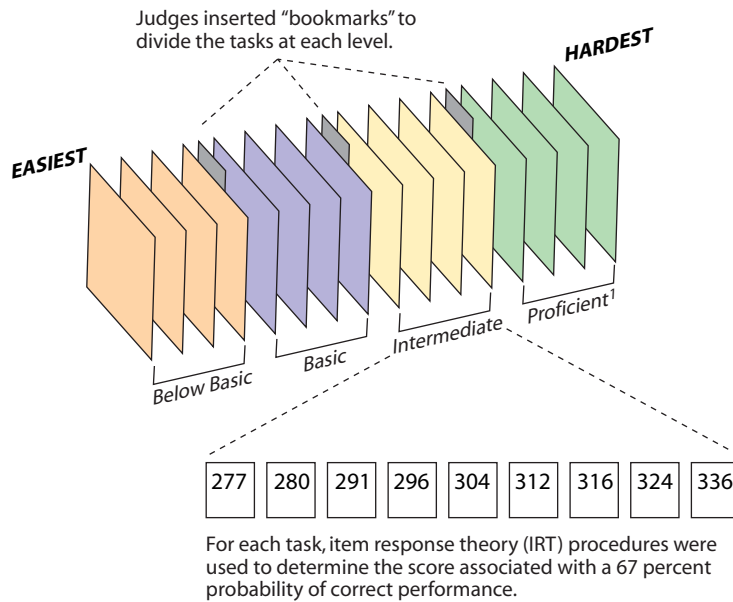
While development of the 1992 literacy levels had begun with rating and sorting the assessment tasks according to cognitive complexity (see Kirsch et al. 2000 for details), development of the new performance levels involved initial specification of levels intended to correspond to policy-relevant categories of adults. The committee specified the levels after reviewing information about the 1992 and 2003 assessments and asking stakeholders to identify the ways in which results would be used. The committee then created preliminary descriptions that characterized the literacy skills of adults at each performance level. (These preliminary descriptions of the levels were refined at various points in the development process.)

The next step was to determine the score ranges to be included in each level. After reviewing the literature about methods for determining score ranges, the committee decided to use the “bookmark” method. The method was implemented by holding two sessions with panels of “judges” consisting of adult literacy practitioners, officials with state offices of adult education, middle and high school teachers, and experts in industrial and organizational psychology. The judges received descriptions of the performance levels along with booklets of assessment tasks, arranged from easiest to hardest. Each booklet contained tasks from a single literacy area (prose, document, or quantitative). (For the first session, the booklets contained the tasks used in 1992; for the second session, they contained the tasks used in 2003.) The judges’ job was to place “bookmarks” in the booklets to identify the sets of tasks that adults at each level were “likely” to perform correctly. Following the recommendation of the designers of the bookmark method (Mitzel et al. 2001), “likely” was defined as 67 percent of the time (or, stated another way, two out of three times).

For each task, IRT procedures were used to determine the score associated with a 67 percent probability of performing the task correctly. As noted in the committee’s report (Hauser et al. 2005), a hallmark of IRT is the way it describes the relationship between the probability of a correct response and the scores on a proficiency scale. The committee established preliminary score ranges for the performance levels based on the scores corresponding to a 67 percent success rate on tasks that judges had included in each level (figure 6).

Income	1
Match	8a
Form W-2 and	8b
W-2G form	9a
Use attach	9b
Form 1099-R	10
File with	11
return	12
	13a
	13b
If you did not	14
get a W-2	15a
see page 22	15b

Figure 6. Use of the bookmark method in developing the new performance levels



¹The National Research Council's Committee on Performance Levels for Adult Literacy originally called this level "Advanced," but the National Center for Education Statistics changed the title to "Proficient" in order to better convey how adults scoring at this level perform.

NOTE: This figure is a simplified representation that is not intended to show actual numbers of tasks or actual scores associated with tasks.

SOURCE: U.S. Department of Education, National Center for Education Statistics. Based on information about the bookmark method provided in *Measuring Literacy: Performance Levels for Adults, Interim Report* (Hauser et al. 2005).

The committee's report discusses in detail the various "technical and nontechnical considerations" leading to the choice of a 67 percent success rate for developing the new performance levels. One reason is that the 80 percent success rate used by NCES to develop the 1992 literacy levels was judged "overly stringent given the uses of the assessment results." In the committee's opinion, such a stringent criterion is needed when an assessment (e.g., a licensing examination) requires "a high degree of certainty that the individual has truly mastered the specific content or skills," but not when an assessment (e.g., NALS or NAAL) has low stakes, "that is, no scores are reported for individuals, and no decisions affecting an individual are based on the results."

For each of the three literacy areas, the bookmark method generated "cut scores" that indicated the lowest score to be included in each performance level. For example, a cut score of 244 marked the lower boundary of the *Basic* level of quantitative literacy. To refine the bookmark-based cut scores, they were compared with the 1992 scores associated with selected background variables, including educational attainment. In setting cut scores, the judges had referred only to skill-based descriptions of the levels (e.g., "Is able to ..."), not to any information about background variables. However, the committee felt that an examination of background variables would be useful in evaluating the reasonableness of the resulting scores. The criterion for selecting the background variables was potential usefulness for distinguishing between performance levels. For example, the *Basic* level was intended to correspond to adults who are ready for GED preparation services, while the *Below Basic* level was intended to correspond to adults who are in need of basic adult literacy services (including

services for adult English language learners). The following background variables were identified as relevant to distinguishing between these two levels: having some high school education (versus none at all) and reporting that one reads well (versus not well).

The committee developed a set of rules and procedures for using the selected background variables to make adjustments to the bookmark-based cut scores. For the *Basic* level of prose and document literacy, the cut scores associated with the selected background variables were about the same as the bookmark-based scores, which therefore did not need to be adjusted. For the *Intermediate* level of prose and document literacy, the cut scores associated with the background variables were somewhat lower than the bookmark-based cut scores (although the differences were relatively small when considering *only* educational attainment instead of all the variables identified as relevant). The committee's rules and procedures resulted in minor downward adjustments to these bookmark-based cut scores. For the highest level of prose and document literacy and for all levels of quantitative literacy, the cut scores associated with the background variables were also lower than the bookmark-based scores, and the differences were greater. For example, analysis of 1992 scores by the background variables yielded a cut score of 207 as the lower boundary of the *Basic* level of quantitative literacy (compared with the bookmark-based cut score of 244). Since analysis by selected background variables was intended merely to complement the bookmark method, adjustments were relatively minor even in cases with relatively large differences between the bookmark-based scores and the scores associated with background variables. In this example, the final cut score for the *Basic* level of quantitative literacy was 235. Table 1 shows the final score ranges associated with the new performance levels.

Table 1. Score ranges associated with the new performance levels, by literacy area

	Below Basic	Basic	Intermediate	Proficient ¹
Prose	0–209	210–264	265–339	340–500
Document	0–204	205–249	250–334	335–500
Quantitative	0–234	235–289	290–349	350–500

¹The National Research Council's Committee on Performance Levels for Adult Literacy originally called this level "Advanced," but the National Center for Education Statistics changed the title to "Proficient" in order to better convey how adults scoring at this level perform.

SOURCE: Hauser, R.M., Edley, C.F., Jr., Koenig, J.A., and Elliot, S.W. (Eds.). (2005). *Measuring Literacy: Performance Levels for Adults, Interim Report*. National Research Council, Board on Testing and Assessment, Committee on Performance Levels for Adult Literacy. Washington, DC: The National Academies Press.

The new levels are supplemented by a *Nonliterate in English* category

In addition to the four performance levels that were developed using the bookmark method, the Committee on Performance Levels for Adult Literacy also recommended that NCES report on a fifth category—*Nonliterate in English*. This category includes two groups of adults:

- Two percent of the adults who were selected to participate in the 2003 NAAL could not be tested—in other words, could not participate in NAAL at all—because they knew neither English nor Spanish (the other language spoken by interviewers in most areas). The *Nonliterate in English* category includes these adults because their inability to communicate in English indicates a lack of English literacy skills.

As defined in the NRC committee's report (Hauser et al. 2005), the Nonliterate in English category does not include the group of adults who could not be tested because they knew neither English nor Spanish. However, NCES decided to include this group in order to provide a more complete representation of the proportion of U.S. adults who are not literate in English.

- Three percent of the adults who *were* tested in 2003 did not take the main part of the assessment, which was too difficult for them, but did take an alternative assessment specifically designed for the least-literate adults. Questions on the alternative assessment were asked in either English or Spanish, but all written materials were in English only. While some adults in this group displayed minimal English literacy skills (e.g., the ability to identify a letter or a common word in a simple text), others lacked such skills entirely. (For example, an adult who was able to attempt the alternative assessment by following oral Spanish instructions might still prove unable to do even the minimal amount of English reading needed to provide any correct answers.) The *Nonliterate in English* category includes these adults because their English literacy skills are minimal at best.

In 2003, the two groups of adults classified as *Nonliterate in English*—the 2 percent who could not be tested because of a language barrier (i.e., inability to communicate in English or Spanish) and the 3 percent who took the alternative assessment—accounted for 11 million adults, or 5 percent of the population. These adults range from having no English literacy skills to being able to “recognize some letters, numbers, or common sight words in everyday contexts” (Hauser et al. 2005).

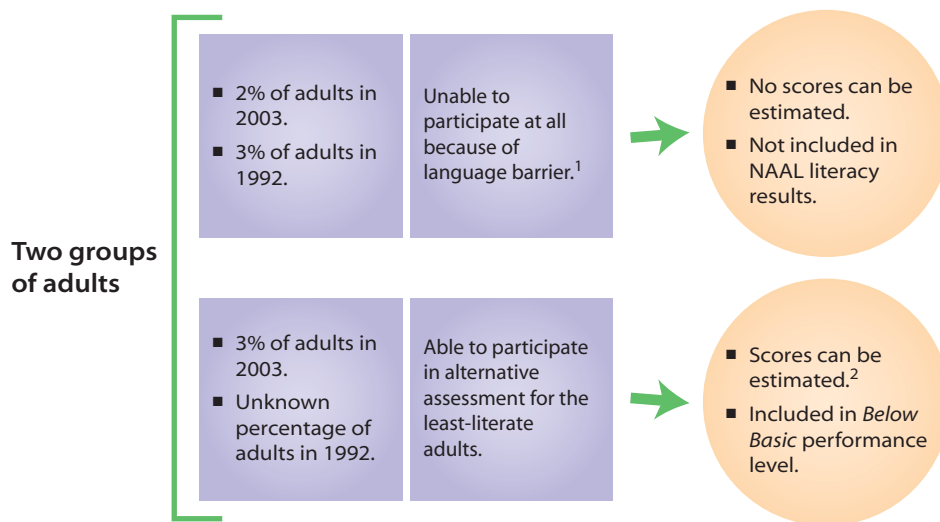
It is not possible to report on the *Nonliterate in English* category for 1992. This is because the 1992 NALS did not include an alternative assessment for the least-literate adults, and an unknown proportion of the *Below Basic* population in that year is likely to have required such an assessment. (In 2003, adults were routed to the alternative assessment if they were unable to successfully perform a minimum number of easy literacy screening tasks. Although the 1992 assessment also began with a set of easy tasks, these tasks were different from the ones used in 2003. In 2003, moreover, questions for the screening tasks could be offered in Spanish, whereas only English was used in 1992.)

As described above, the *Nonliterate in English* category includes all adults identified as lacking literacy in English—not only the lowest performers among adults who were able to participate in NAAL, but also adults who could not be tested because of a language barrier. In contrast, NAAL literacy results—reported in terms of scores and performance levels—provide information only about adults who could be tested. Figure 7 summarizes the composition of the *Nonliterate in English* category and its relationship to the NAAL literacy results.

The reason that NAAL literacy results do not include adults who could not be tested as a result of a language barrier is that no performance data are available for these adults and it cannot be assumed that they would perform similarly to other adults with similar characteristics (e.g., age, gender, and education level). Such an assumption would be the basis of any approach designed to estimate their performance using a statistical model in the absence of data. While this assumption could be made for adults who failed to participate for reasons that do not relate to literacy (e.g., unavailability), it would overestimate the performance of adults who were untestable because of a language barrier. On the other hand, some of these untestable adults might have been able to perform a few of the easiest tasks correctly if, for example, the instructions had been given in their native language. There is no way to know for certain whether individual untestable adults would or would not have been able to provide a few correct answers.

Figure 7. The Nonliterate in English category

About 3 percent of adults in 1992 (vs. about 2 percent in 2003) were considered to be untestable as a result of a language barrier. The fact that interviewers administering literacy screening tasks in 2003 had the option of asking the questions in Spanish may be one reason that more adults could be tested in that year.



¹Adults in this group could communicate in neither English nor Spanish. (Although the assessment tasks measure literacy in English only, bilingual interviewers were available in most areas.)

²These adults' performance on a set of seven easy screening tasks is included when computing NAAL literacy results. (The screening tasks were used to determine which adults required the alternative assessment. For more information, see "The least-literate adults take an alternative assessment," in section 3.)

NOTE: Adults are defined as people age 16 and older living in households or prisons. The *Nonliterate in English* category is reported only for 2003. This category is not reported for 1992 because there was no alternative assessment in 1992 and an unknown proportion of the *Below Basic* population in that year is likely to have required such an assessment.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1992 National Adult Literacy Survey (NALS) and 2003 National Assessment of Adult Literacy (NAAL).

NCES adopted the new levels and refined their descriptions

The new performance levels and related findings were presented to NCES as recommendations. Having accepted the general recommendations, NCES incorporated a few refinements before using the levels to report results. Table 2 presents descriptions and illustrative tasks selected by NCES to concisely convey the meaning of each level. More extensive descriptions of the levels appear in the report by the Committee on Performance Levels for Adult Literacy (Hauser et al. 2005). The committee provides a separate description of each level for each of the three literacy areas (prose, document, and quantitative).

The new performance levels will be featured in publications that report on adult literacy performance in 2003 and differences in performance between 1992 and 2003. Figure 8 shows the distribution of adults across the new levels in both years. More detailed comparisons of performance across years appear in *A First Look at the Literacy of America's Adults in the 21st Century* (Kutner, Greenberg, and Baer 2005).

Table 2. Overview of the new performance levels

Level and definition	Key abilities associated with level	Sample tasks typical of level
Below Basic indicates no more than the most simple and concrete literacy skills.	<p>Adults at the <i>Below Basic</i> level¹ 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
Basic indicates skills necessary to perform simple and everyday literacy activities.	<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
Intermediate indicates skills necessary to perform moderately challenging literacy activities.	<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
Proficient indicates skills necessary to perform more complex and challenging literacy activities.	<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

To provide information about demographic, social, and economic factors associated with adults at the Below Basic level, NCES has profiled these adults in terms of various background characteristics (see Kutner, Greenberg, and Baer 2005).

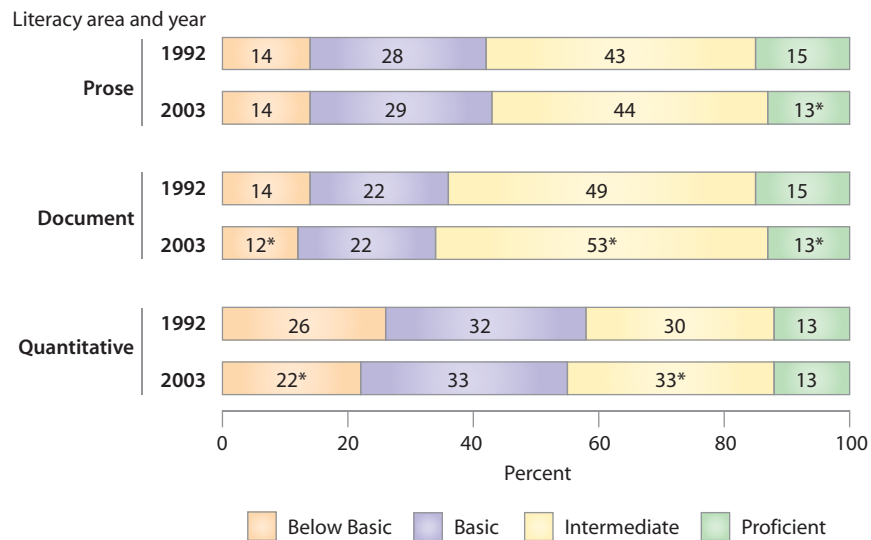
For each performance level, the percentage of adults who responded correctly to almost 100 different assessment tasks is included in the Sample Questions section of the NAAL website (<http://nces.ed.gov/naal/TestQuestions.asp>). For a brief discussion and an example of how specific tasks relate to the levels, see "Each performance level represents a continuum of abilities," later in this section.

¹This level includes the lowest performers among those who could be tested. Adults whom interviewers determined to be untestable as a result of a language barrier are not included in the literacy results at all, because no literacy scores could be estimated for them. For more information, see "The new levels are supplemented by a *Nonliterate in English* category," earlier in this section.

NOTE: These performance levels are used to report results from the 2003 National Assessment of Adult Literacy (NAAL), including comparisons with results from the 1992 National Adult Literacy Survey (NALS). Although some of these performance levels share common names with levels used for the National Assessment of Educational Progress (NAEP), they do not correspond to the NAEP levels.

SOURCE: U.S. Department of Education, National Center for Education Statistics (NCES). Based on information from *Measuring Literacy: Performance Levels for Adults, Interim Report* (Hauser et al. 2005) as well as input from the NCES Assessment Division.

Figure 8. Percentage of adults scoring at each performance level, by literacy area: 1992 and 2003



The percentage of adults at each level varies by literacy area (prose, document, or quantitative).

*Significantly different from 1992.

NOTE: Adults are defined as people age 16 and older living in households or prisons. Adults who could not be interviewed due to either a language barrier or a cognitive or mental disability (3 percent in 2003 and 4 percent in 1992) are excluded from this figure. (For more information, see “Administration procedures accommodate adults with special needs,” in section 5.) Detail may not sum to totals because of rounding. The 1992 results presented in this figure are based on reanalysis of the 1992 data using procedures developed for the 2003 assessment.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1992 National Adult Literacy Survey (NALS). Taken from figure 2 in *A First Look at the Literacy of America’s Adults in the 21st Century* (Kutner, Greenberg, and Baer 2005).

Note that more adults scored at the lower levels for quantitative literacy than for prose and document literacy. One possible explanation for this is that NAAL quantitative tasks typically require most, if not all, of the skills typically required for prose or document tasks, plus specific quantitative skills. The skills common to the other task types are needed to effectively use the prose or document texts in which numbers for quantitative tasks are embedded, while the specific quantitative skills are needed to identify and perform the necessary computations.

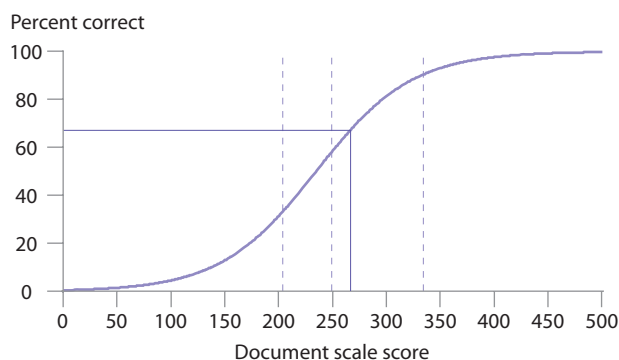
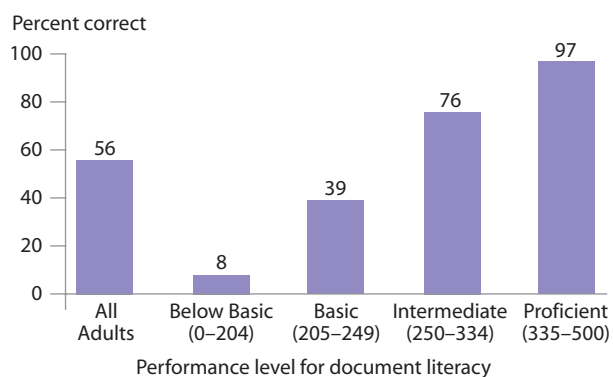
Each performance level represents a continuum of abilities

Although certain tasks can be characterized as *typical* of each performance level (as shown in table 2, on the previous page), it is important to remember that the tasks at each level extend across a certain range of difficulty and therefore require a continuum of abilities. For example, the new *Basic* level of document literacy encompasses scores ranging from 205 to 249. Adults with a score of 205 (the lowest score included in the level) have a 67 percent rate of success with the *easiest* task at that level, while adults with a score of 249 (the highest score included in the level) have a 67 percent rate of success with the *most difficult* task at that level. This means that adults at the high end of the *Basic* level have an even higher rate of success with some of the level’s easiest tasks. Moreover, these adults have a fairly high rate of success with some of the tasks at the low end of the *Intermediate* level, even though the rate is below 67 percent.

Regardless of the specific criteria used to establish performance levels, *adults at every level have some probability of performing any task correctly*. Therefore, it is not correct to say that adults at a certain performance level are “not able to do” tasks at higher levels. These adults are, however, less likely to succeed with such tasks. Figure 9 illustrates this fact by showing the percentage of adults at each of the new performance levels who were able to correctly perform a moderately difficult document task in 1992. For this particular task, the success rate ranged from 8 percent at the *Below Basic* level to 97 percent at the *Proficient* level.

Figure 9. Percentage of adults able to correctly perform a sample document task in 1992, by performance level and scale score

Moderately difficult document task—Determine correct type of sandpaper from table



Section 1 of this publication shows this sample task in its entirety (see figure 3).

Although this task is associated with the Intermediate level, some adults at each level performed the task correctly. Adults with a score of 266 had a 67 percent probability of correct performance.

NOTE: Adults are defined as people age 16 and older living in households or prisons. The 4 percent of adults who could not be interviewed in 1992 due to either a language barrier or a cognitive or mental disability are excluded from this figure. (For more information, see “Administration procedures accommodate adults with special needs,” in section 5.) In the line graph shown in this figure, the dotted vertical lines separate the performance levels. The solid guidelines draw attention to the relationship between a specific point on the scale—in this case, 266—and a 67 percent probability of correct performance.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1992 National Adult Literacy Survey (NALS).