

# Knowledge, Literacy, and Power

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## Knowledge, Literacy and Power

### Abstract

The importance of content knowledge and reading practices to the achievement of power was studied with adults. Relationships were examined among general, "mainstream" society knowledge, domain specific political knowledge, the amount of reading engaged in and three indicators of power, occupation, income and political activity. Care was taken to ensure that extraneous cognitive processing variance did not influence the results by using simple checklists of declarative knowledge that required listeners, on the telephone, to simply say "yes" if they thought they recognized a given factual stimulus. The results of two studies indicated that there were positive relationships among amount of content knowledge, reading and power, even when age, education and ethnicity were held constant. The latter is important because it indicates that regardless of one's cultural background, possession of large "banks" of declarative knowledge about the "mainstream" culture of the United States is associated with achieving and manifesting power.

## Knowledge, Literacy and Power

In democratic nations that subscribe to meritocratic principles, it is generally assumed that "knowledge is power," and that, to a large extent, knowledge is based on literacy (Lerner, 1958). The traditional view has been that, as a general rule, the more literate a person is, the more knowledgeable the person will be and the more likely he or she is to gain access to socially privileged positions or to gain a status that carries with it the capacity for influencing the thoughts and behaviors of others in direct or indirect ways (Lipset, 1960; Verba & Nie, 1972; Wolfinger & Rosenstone, 1980).

Today, however, among educators and other citizens alike, the importance of the acquisition of content knowledge as an outcome of education and as an important contributor to social status and power is in a state of ambivalence. On the one hand, education reformers such as Freire (1970) have argued against the "banking" concept of education in which the culture of the "dominant" classes is transmitted to the "oppressed" by requiring the latter to learn the facts, concepts, famous personalities, etc. of the "dominant" classes. He and various sympathizers have argued for an approach to education in which processes of "critical thinking" are emphasized over the acquisition ("banking") of content knowledge.

Interestingly, Freire, heavily influenced by Marxist-socialist thinking, has recently been joined by businessmen who also argue against the "banking" approach to education. Robert W. Galvin, Chairman of the Executive Committee of the Motorola Corporation has stated, "While most descriptions of necessary skills for children do not list "learning to learn," this should be the capstone skill upon which all others depend. Memorized facts, which are the basis for most testing done in schools today, are of little use in the age in which information is

doubling every two or three years. We have expert systems in computers and the Internet that can provide the facts we need when we need them. Our workforce needs to utilize facts to assist in developing solutions to problems. The worker needs to be able to utilize the systems which give him or her "just-in-time" access to information when it's required in the problem-solving process." (Galvin, in Murnane & Levy, 1996, p. vxii)

On the other hand, Hirsch (1987; 1996) has reviewed and argued against the position of many educators and researchers who call for the teaching of "critical thinking," "learning to learn," and other abstract cognitive processes over the teaching and learning of content knowledge. He argues for the importance of acquiring knowledge, that is, facts, names, concepts, and so forth, during the school years as the basis for being a knowledgeable, literate and productive adult who can continue to learn independently by reading. Hirsch has bolstered his arguments with references to the fairly large body of research that indicates the importance of "prior knowledge" for reading comprehension.

Both Hirsch's arguments and research on the importance of "prior" and "background" knowledge in reading comprehension are reviewed by Bruer (1993, pp. 173-213). While Bruer indicates the importance of learning various cognitive and metacognitive strategies for improving reading and learning from text, he also agrees to a large extent with Hirsch regarding the importance of knowledge in making it possible to acquire new knowledge from texts. He points out the importance of having a large body ("bank") of vocabulary knowledge, background knowledge about the world around us, knowledge about topics for creating "gists," domain-specific knowledge for understanding texts in special areas of content, knowledge of literary forms and genres to aid in understanding special forms of texts, and the importance of "prior" or "background" knowledge in reading to learn new knowledge.

### **Power, content knowledge, and cognitive processes**

In the present study we view "power" as indicated by the achievement of a higher status occupation and/or the ability to earn an average or higher level of income. These achievements empower the person in the mainstream society. Additionally, the more knowledgeable person is more likely to exercise the rights (power) of citizenship and to engage in political activities, such as voting, to advance his or her causes (Neuman, Just, & Crigler, 1992; Zaller, 1992). Through these means the more highly knowledgeable person joins the ranks of the influential in the "dominant" or "mainstream" society.

Previous studies have confirmed relationships among literacy and the indicators of power outlined above; occupation, income and political activity, including voting (Kirsch, Jungeblut, Jenkins & Kolstad, 1993; Sticht & Armstrong, 1994; Kaplan & Venezky, 1994). However, in these studies of literacy, declarative knowledge (i.e., factual or content knowledge available to people for use) is confounded with process skills of a largely unknown admixture. Because of this commingling of declarative knowledge and skills, it is not possible to use such studies to evaluate the role of content knowledge in empowering people. For instance, the prose, document and quantitative literacy tasks of the National Adult Literacy Survey (NALS) incorporated a number of "search and locate" and other cognitive skills that placed heavy demands on working memory. It is well established that working memory becomes increasingly less efficient with advanced age (Bernstein, Roy, Srull, & Wickens, 1988; Meyer, Marsiske, & Willis, 1993) so it is possible that the load on working memory contributed to the decline in performance observed for adults over the age of fifty (Kirsch, Jungeblut, Jenkins & Kolstad, 1993, p. 31).

### **Knowledge and literacy**

Several lines of research have converged to suggest that people become highly knowledgeable and highly literate largely by engaging in numerous literacy practices, such as reading books, magazines, newspapers, and so forth (Krashen, 1993; Reder, 1994; Kaplan & Venezky, 1994). A review of the major assessments of adult literacy in the United States revealed that, since 1937 it has repeatedly been found that for adults, as years of education increases there are corresponding increases in both the number of literacy practices in which adults

engage and the amount of knowledge and skill displayed in the assessments (Sticht & Armstrong, 1994; Smith, 1996, p. 196).

The importance of the development of knowledge as both an outcome of and contributor to adult literacy was expressed in the definition of literacy that was adopted by the advisory panel of experts for the 1993 National Adult Literacy Survey (Kirsch, Jungeblut, Jenkins & Kolstad, 1993). The definition of literacy agreed to was: "Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential (*italics added*)."

This definition notes the important role that literacy plays in helping people develop their store of knowledge. In contrast, the role that one's prior store of knowledge plays in helping people use their literacy skills was also acknowledged by the advisory panel for the NALS in its acceptance of the definitions of the three different literacy scales that were developed. These included: prose literacy, the knowledge and skills needed to understand and use information from texts, document literacy, the knowledge and skills required to locate and use information contained in materials, and quantitative literacy, the knowledge and skills required to apply arithmetic operations embedded in printed materials (Kirsch, Jungeblut, Jenkins & Kolstad, 1993).

It should be recognized that "skills" are, themselves, forms of procedural knowledge. Skills may be regarded as procedural knowledge that is acquired along with declarative knowledge. From these definitions, it is clear that the advisory panel for the National Adult Literacy Survey understood that the use of printed and written information to accomplish tasks requires, as a prerequisite, prior knowledge and skills to make such use possible. In this sense, knowledge is both a prerequisite for and an outcome of the use of literacy.

Despite the acknowledged importance of declarative knowledge as a component of all literacy practices, a review of every large-scale assessment of adult literacy since 1917, both military and civilian, revealed that there has never been an attempt to determine the validity of the maxim, "knowledge is power" by identifying the contribution to power (jobs, income, voting) of the declarative knowledge component of literacy, separate from the many other demands of more or less complex cognitive tasks that introduce unknown process variance in the study of relationships among literacy and power (Sticht & Armstrong, 1994; Messick, 1989). The research reported here aimed at determining empirically the value of "banking" declarative knowledge of the "dominant" or "mainstream" society in the United States of the mid-1990's as a contributor to achieving power.

### **Theoretical basis for the present research**

The present research used telephone survey and checklist methodologies to study relationships of declarative knowledge to power. The general approach is based on the "modal model of memory" that has been examined in over thirty years of research (Healy & McNamara, 1996, p. 143). Simply stated, this model conceives of a human cognitive system that includes both a knowledge base in long term memory consisting largely, though not exclusively, of language-based declarative and procedural knowledge, and a working memory in which active information processing takes place using the knowledge from long term memory and information picked-up from the external world through a perceptual system. Generally speaking, highly literate individuals possess large bodies of knowledge and information processing capacity and efficiency in working memory to process information in complex graphic documents (Kyllonen & Christal, 1990).

Stanovich (1993) and associates have conducted research to explore how engagement in literacy practices by children and adults contributes to their declarative knowledge base in the human cognitive system. In this research, Stanovich and associates developed an innovative method for assessing declarative knowledge with checklists that reduce task demands to a simple "yes" or "no" judgment on the part of the reader. Performance on these checklists correlates significantly with a variety of literacy activities and cognitive assessments (Stanovich, 1993; Stanovich & Cunningham, 1993; Allen, Cipielewski, & Stanovich, 1992; West, Stanovich, & Mitchell, 1993). From a causal perspective, the argument by Stanovich and associates is that those who read a lot acquire a large knowledge base containing the names of authors, magazines, and persons known for their

contributions to film, theatre, music and other cultural activities, and a large vocabulary of words that are typically not encountered with high frequency in day-to-day oral communication nor on television or radio. The declarative knowledge base made-up of authors, magazines, famous people and vocabulary is an indicator of both the amount of reading in which individuals have engaged and of the cognitive outcomes of that reading in terms of the growth in the individual's declarative knowledge base.

In the present research, two studies were conducted that examined how declarative knowledge relates to power. Both studies used the checklist methodology developed by Stanovich and associates to obtain information about adult's declarative knowledge. Lists containing discrete items, such as names or single vocabulary words, that require only a yes/no decision for each item are particularly suitable for presentation by telephone because they do not overload working memory and introduce irrelevant task variance (Messick, 1989).

Study 1 looks at relationships among various demographic variables, engagement in reading and electronic media usage, general, "mainstream," or "dominant" cultural declarative knowledge, and two indicators of power, occupational status and income. Study 2 focuses on domain specific political knowledge and looks at relationships among demographic variables, newspaper reading and electronic media usage, political knowledge and three power indicators, household income, voting, and engagement in political activities.

### **Study 1: General Declarative Knowledge and Power**

In Study 1, subjects' declarative knowledge was assessed using shortened versions of the Stanovich checklists for declarative knowledge of famous authors, magazine titles, famous people, and vocabulary words (West, Stanovich, & Mitchell, 1993). It provided information about respondent's general declarative knowledge taken from samples of the knowledge of the "mainstream" or "dominant" society. Study 1 examines for the first time the relationships of declarative knowledge to two indicators of power, occupational status and income, when age, education, and ethnicity are held constant.

#### **Method**

##### **Subjects**

Data for this study were derived from telephone interviews with 538 adults residing in households that could be reached by listed or unlisted telephone in the larger San Diego, California metropolitan area. This included approximately 96 percent of all households. Sampling was conducted by using a random-digit-dialing procedure designed to reach households without numbers listed in the telephone directory, due to unlisted numbers or newly listed numbers not yet printed, as well as households listed (Dillman, 1978, pp. 232-281; Frey, 1989, pp. 79-116). Respondents who agreed to participate further and were willing to provide their name and address were mailed a written questionnaire as an alternative modality follow-up.

In the telephone interview, the subjects' mean length of residence in San Diego was 20.6 years (SD=15.5), mean educational level was 14.5 years (SD=2.6), mean age was 41.0 years (SD=16.0), mean total household income was \$34, 340 (SD=\$12,240).

Table 1.

Comparison of the San Diego telephone samples in studies 1 and 2 with the 1990 U. S. Census figures for San Diego County.

<b>Variables</b>	<b>Study 1</b>	<b>Study 2</b>	<b>Census</b>
<b>Household Income</b>	(478)b	(562)	
Under \$10,000		9.0	6.8
\$10,000-\$49,000		59.6	56.5
Over \$50,000		31.4	36.7

<b>Age</b>	(512)	(676)		
18-24		15.4	15.2	17.8
25-64		72.4	70.4	67.6
65+		12.1	14.4	14.4
<b>Gender</b>	(522)	(676)		
Male		47.9	49.1	50.9
Female		52.1	50.9	49.1
<b>Education</b>	(517)	(676)		
0-12		25.5	28.7	40.9
13-16		53.4	55.7	50.3
17+		21.1	15.5	8.8
<b>Ethnicity</b>	(520)	(663)		
White		72.9	74.8	65.6
Latino		13.7	10.7	20.0
Black		4.6	6.9	6.0
Asian		5.4	5.1	7.5
Other		3.5	2.4	0.0

a = Numbers are percentages with the characteristics listed.

b = Numbers in brackets are total numbers in samples with data for a given characteristic.

The survey procedures yielded a sample that matched the 1990 U.S. Census data closely, with some notable exceptions. Table 1 shows statistics for the telephone and U. S. Census population for the San Diego region. The telephone sample's gender, age, and income were similar to census distributions. Minorities were somewhat underrepresented and the telephone data were skewed upward in educational attainment, underrepresenting the lowest level of educational attainment and overrepresenting the highest level, in comparison to census data. Although moderate upward bias in the education parameters was present in the sample we do not believe that this undermines the main findings of the study. First, all English-speaking groups were represented in the telephone survey. Second, the thrust of our argument is based on correlational analyses. These kinds of sample biases present would reduce, not increase, variance. This attenuates the correlations making the findings overly conservative.

### **Interview procedures**

Interviewing was conducted by university students trained for telephone interviewing for the project during the late spring and early summer, 1994. Subjects were called between 4:30 p.m. and 9:30 p.m. weekdays and between 9:00 a.m. and 9:30 p.m. on weekends. Interviewers introduced the survey to the person who answered the telephone, gained informed consent, and asked to speak to the adult (18 years of age or older) who had "the most recent birthday" as a random method of selection among adults in the household. No substitutions were allowed so interviewers frequently were required to call the household back in order to complete an interview with the appropriate respondent. Up to four callbacks were made to households and a response rate of approximately 50 percent was attained. Due to resource constraints, interviews were conducted only in English, a procedure that eliminated approximately four percent of households.

The telephone interviews provided an oral presentation of information requiring the respondents to listen and respond from what they heard. Interviewers followed a protocol containing 63 questions, some with multiple items. About half of the questions concerned the assessment of knowledge. These questions were interspersed among other questions that were part of another on-going research project conducted in the area of political behavior. The interviews required a mean of 27.7 (SD= 7.6) minutes to complete.

## **Instrumentation**

Literacy knowledge checklists. For the sake of time, four abbreviated versions of the checklists used by West, Stanovich and Mitchell (1993) were used in the telephone survey. The appendix presents the items used in the Author Recognition Test, the Magazine Recognition Test, the Cultural Knowledge Test and the Vocabulary Knowledge Test. Generally, items were chosen to represent mainstream cultural knowledge (some items came from the work of Hirsch (1987), though some names were chosen to reflect multicultural knowledge within the United States (e.g., Steve Biko, Rosa Parks). Five of the vocabulary items included words typically known by students in the 8th through 12th grades, and the rest are familiar to adults with some college education. The four declarative knowledge checklists used in the telephone survey are given in Appendix A, along with the interview question number, the question asked, the means, standard deviations, and numbers of adults responding to the particular item, and the percentage of adults in each of five knowledge levels that knew the item. In the actual interview, the foils were mixed randomly among the genuine items.

For each checklist, an adjusted percent correct score was calculated. The adjusted percent correct score for an individual was the proportion of correctly identified real names or words minus the proportion of foils incorrectly identified as real names or words. For instance, if a person said "yes" to 10 of the 17 names of famous people on the Cultural Knowledge Test and to 2 of the 6 foils, the person's score for the Cultural Knowledge Test was 25.5 (10/17 minus 2/6, or 58.8 minus 33.3). The correction for guessing prevented the subjects from simply responding "yes" to all items. The signal detection rationale for the scoring procedures are given in West, Stanovich & Mitchell (1993, p. 38).

Split-half, internal consistency (Spearman-Brown) reliabilities of the checklists ranged from .80 (Magazine Recognition Test) to .88 (Cultural Knowledge Test). To increase the reliability of the checklists as measures of the knowledge component of literacy, a Total Knowledge score was calculated made up of the full number of 50 actual and 24 foil names and words. The internal consistency reliability for Total Knowledge was .91. For a sub-set of 140 respondents who completed the checklists by telephone and then later by reading and responding to mailed-out copies of the same checklists, test-retest ("alternate modality" or stability) reliabilities were obtained as: Total Knowledge score ( $r=.80$ ), Author Recognition Test ( $r=.71$ ), Magazine Recognition Test ( $r=.67$ ), Cultural Knowledge Test ( $r=.73$ ), and Vocabulary Knowledge Test ( $r=.63$ ). Thus, strong evidence of reliability ( $p<.05$ ), both in terms of internal consistency and test-retest, was present for each of the four scales and the Total Knowledge scale.

Engagement in media practices. Subjects were asked the number of times in an average week he or she engaged in various media practices such as reading for pleasure newspapers, books, and newsmagazines or reading job-related materials for work, watching television, listening to the radio, etc. Table A-5 in the Appendix shows the questions used to explore engagement in literacy and other media practices. For each respondent, a total literacy practices score was obtained as the average of questions 25a-k in Table A-5. The literacy practice variable is a composite indicator of "print exposure" used to relate average frequency of weekly reading of different materials for various purposes to demographic variables and the knowledge checklists.

## **Defining knowledge levels**

The National Adult Literacy Survey cast distributions of scores on literacy assessments into five levels of proficiency to identify groups, ranging from low to high (Sticht & Armstrong, 1994). Similarly, to illustrate the feasibility of that approach in the present case, the results of the telephone survey were cast into five levels of declarative knowledge using Total Knowledge scores.

To obtain the five levels of knowledge, each person's adjusted percent correct score on each checklist was added together to give a Total Knowledge score. Then the mean adjusted, percent correct score for Total Knowledge for the combined sample was calculated. This score was used to divide the sample into five groups or levels using the mean (45 adjusted percent correct) and the standard deviation (SD, 25 adjusted percent correct) for the

total sample. Knowledge levels were defined in adjusted percent correct scores from low to high proficiency as: Level 1= scores at -1.0 SD below the mean or lower (0-20 adjusted percent correct), Level 2 = scores between -.5 to -1.0 SD (21-32 adjusted percent correct), Level 3 = scores between -.5 SD (35-58 adjusted percent correct), Level 4 = scores between +.5 to +1.0 SD (59-70 adjusted percent correct), and Level 5 = scores from +1.0 SD and above (71-100 adjusted percent correct).

The five knowledge levels are used in presenting the findings for various demographic and media practice variables in two ways. First, the data are analyzed to find out what proportion of a given demographic or media practices sample is in each of the five levels. For instance, what percentage of all the males in the telephone interview sample are in level 1, what percentage are in level 2, and so on for levels 3, 4 and 5 on the Total Knowledge scale. In a second use, the data are analyzed to find out what proportion of people in each level of knowledge are in a given demographic or media practices group. For instance, what percentage of people in knowledge level 1 are males, what percentage in knowledge level 2 are males, and so forth for each knowledge level.

## **Results**

Table 2 presents the correlations among key demographic variables, the four checklists, a "practice" variable (e.g., How often during an average week do you read a local or national newspaper?) computed as the average of questions 25a-k (see appendix), and two indicators of power, occupational status and income. The practice variable is a composite indicator of "print exposure" and relates average frequency of weekly reading of different materials for various purposes to education, age, and the knowledge checklists.

Table 2 shows positive correlations among demographic, knowledge, practice and power variables consistently found in adult literacy assessments for over 75 years (Sticht & Armstrong, 1994). Generally, better educated subjects scored higher than less well educated subjects, older adults scored better than younger, the majority group (whites) scored better than minorities (Hispanics, Blacks, Asians, others), managers and professionals performed better than clerical and sales persons, who, in turn, performed better than unskilled workers and laborers, those who earned more scored higher than those who earned less, and those who spent more time per week reading scored higher than those who read less.

Women tended to be somewhat less well educated, to engage in fewer literacy practices, to hold somewhat higher level jobs but to earn less than men.

Table 2.

Study 1: Correlations among knowledge and demographic variables.

Variables	1	2	3	4	5	6	7	8	9	10	11	12
Education	1.00	.07*	0.23	0.31	0.31	0.36	0.37	0.34	0.14	-.10 <sup>a</sup>	0.34	0.34
Age		1.00	0.25	0.16	0.25	0.19	0.27	.08*	0.30	.05*	0.12	.04*
ART			1.00	0.61	0.61	0.53	<u>0.81</u>	0.23	0.27	-.10 <sup>a</sup>	0.24	0.23
MRT				1.00	0.58	0.54	<u>0.82</u>	0.22	0.30	.05*	0.25	0.23
CKT					1.00	0.62	<u>0.84</u>	0.23	0.32	.05*	0.23	0.18
VKT						1.00	<u>0.82</u>	0.25	0.29	-.04*	0.21	0.26
Total Knowledge							1.00	0.28	0.36	.05*	0.29	0.27
Practice								1.00	.09 <sup>a</sup>	-0.16	0.16	0.26
Ethnicity									1.00	.06*	0.22	0.13
Gender										1.00	0.21	-0.13

	1.00	0.17
Annual Income		1.00

ART=Author Recognition Test; MRT=Magazine Recognition Test; CKT= Cultural Knowledge Test; VKT=Vocabulary Knowledge Test. Total Knowledge= scores summed over the four checklists; Practice = mean scores on questions 25a through k (see appendix) for different reading practices. \*= Not significant, a= p < .05, all others significant beyond p < .01. Underlined r's are part-whole correlations. Ethnicity= nonwhites (0) and whites (1); gender= males (1) and females (2).

**Engagement in literacy practices/print exposure**

Table A-5 in the appendix presents mean scores and SD's related to the respondent's estimates of the frequency they engaged in various literacy practices during a typical week. Overall, subjects reported reading a newspaper an average 4.4 times a week (SD=2.8) (Q's 7 & 25g). Reading for pleasure (Q25a) was the most frequent reading practice (Mean=4.68; SD=2.50) while listening to someone read aloud was the least frequently engaged in weekly literacy practice (Mean=0.52; SD=0.74).

Generally, the trends for practice follow those for Total Knowledge and are significant at p<.05. As educational attainment (r=.34), age (r=.08), occupational status (r=.17), and income (r=.26) increase, the average frequency of weekly literacy practices increases. Whites were slightly more likely to engage in literacy practices than nonwhites (r=.09).

Questions 5A and 6 in Table A-5 of the appendix present the mean hours per day the subjects reported spending on either watching television or listening to the radio. There was a significant, negative (r=-.14, p<.001) relation between the number of hours of television watched and the average weekly literacy practice score. No relation between radio listening and literacy practices was found. Neither television viewing nor radio listening was related to any of the declarative knowledge checklist scores.

**Analyses by knowledge levels**

Correlational analyses reveal the overall trends in relationships among the variables under investigation. But they do not reveal what goes on within the distributions of scores. For that reason analyses are presented here that show how different variables are distributed in the five different Total Knowledge categories defined above.

Table 3.

Study 1.

Percentage of respondents in each demographic group falling into each of five levels of Total Knowledge. For instance, 9.2 percent of those with 17+ years of education were in Level 1 while 43.1 percent were in Level 5.

**Total Knowledge Levels\***

(\*Data are percentages in each knowledge level. See text for definition of levels)

<b>Variables</b>	<b>N</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Total Sample	538	19.2	14.1	31.4	16.7	18.6

Normal Curve		16.0	15.0	38.0	15.0	16.0
<b>Gender</b>						
Male	250	21.2	19.2	22.0	18.8	18.8
Female	272	18.8	19.5	19.1	21.3	21.3
<b>Education</b>						
0-12	132	31.0	30.1	21.1	11.9	06.8
13-14	146	22.6	22.6	21.9	18.5	14.4
15-16	130	13.1	13.1	25.4	26.9	21.5
17*	109	09.2	11.0	12.8	23.9	43.1
<b>Age</b>						
16-18	14	35.7	42.9	21.4	00.0	00.0
19-24	65	41.5	23.1	16.9	13.8	04.6
25-39	198	21.7	21.2	23.2	21.7	12.1
40-54	141	09.9	13.5	15.6	24.1	36.9
55-64	32	06.3	12.5	28.1	18.8	34.4
65+	62	17.7	19.4	22.6	21.0	19.4
<b>Ethnicity</b>						
White	379	11.9	17.4	22.4	23.2	25.1
African-Amer.	24	25.0	37.5	16.7	20.8	--
Hispanic	71	45.1	19.7	18.3	08.5	08.5
Asian	28	42.9	21.4	14.3	14.3	07.1
Other	18	33.3	38.9	05.6	11.1	11.1
<b>Occupation</b>						
Labor /Operator	50	42.0	26.0	14.0	12.0	06.0
Semi/Skill	103	21.4	22.3	25.2	20.4	10.7
Clerk/Sales	97	21.6	23.7	18.6	16.5	19.6
Tech/Engr	60	10.0	11.7	31.7	23.3	23.3
Mn/Ex/Prf	165	12.1	15.8	15.2	25.5	31.5
<b>Hourly Pay</b>						
0-\$5.99	56	26.8	26.8	17.9	10.7	17.9
\$6-10.99	103	29.1	26.2	17.5	20.4	06.8
\$11-15.99	82	19.5	12.2	20.7	25.6	22.0
\$16-20.99	55	09.1	20.0	27.3	20.0	23.6
\$21+	82	13.4	12.2	22.0	24.4	28.0
<b>Household Income</b>						
Under \$10,000	43	34.9	20.9	18.6	18.6	07.0
\$10,000-19,999	54	29.6	22.2	11.1	16.7	20.4
\$20,000-29,999	98	29.6	20.4	20.4	19.4	10.2
\$30,000-39,999	69	20.3	15.9	23.2	21.7	18.8
\$40,000-59,999	64	10.9	15.6	28.1	31.3	14.1
\$60,000+	150	10.0	20.7	19.3	19.3	30.7

First, as given in Table 3, we take a demographically defined group of adults, such as females, and show the percentage that fall into each of the five levels of knowledge. Looking at Table 3 it is clear that the less well educated, the younger, minorities, less occupationally skilled, and lower income respondents tend to fall with higher frequencies into the lower levels of Total Knowledge, confirming the data of Table 2. However, it is also clear that in all of these groups, there is a wide range of knowledge. For instance, about one in five Blacks fell

in the next to the highest category of knowledge, and about one in eight managers and professionals fell in the least knowledgeable category.

The importance of Total Knowledge in relation to the power indicators of occupation and income is revealed again in Table 4 where each of the five Total Knowledge categories is analyzed to see how adults in a given category of knowledge are distributed across the demographic variables. As indicated, about one in five of the adults in the lowest knowledge category are managers/professionals, whereas over half of those in the highest category of knowledge are managers/professionals. Similarly, only one in six of those in knowledge category 1 earn over \$50,000 a year while half of those in category 5 earn that much.

Table 4.

Study 1.

Percentage of respondents in each level of Total Knowledge who are in each of the variable categories. For instance, 51 percent of those in Level 1 are males, 49 percent are females; in Level 5, 44.8 percent are males and 55.2 females.

Variable	Total Knowledge Levels					Total
	1	2	3	4	5	
<b>Gender</b>						
Male	51.0	47.5	51.4	44.8	44.8	47.9
Female	49.0	52.5	48.6	55.2	55.2	52.1
	100	100	100	100	100	100
<b>Education</b>						
0-8	02.0	01.0	00.9	00.0	01.8	01.2
9-12	38.6	37.6	25.2	14.6	06.7	24.4
13-14	32.7	32.7	29.9	26.2	20.0	28.2
15-16	16.8	16.8	30.8	34.0	26.7	25.1
17+	09.9	11.9	13.1	25.2	44.8	21.1
	100	100	100	100	100	100
<b>Age</b>						
16-18	04.9	06.1	02.8	00.0	00.0	02.7
19-24	26.5	15.3	10.5	08.6	02.9	12.7
25-39	42.2	42.9	43.8	41.0	23.5	38.7
40-54	13.6	19.4	21.0	32.4	51.0	27.5
55-64	02.0	04.1	08.6	05.6	10.8	06.3
65+	10.8	12.2	13.3	12.4	11.8	12.1
	100	100	100	100	100	100
<b>Ethnicity</b>						
Caucasian	44.6	64.7	79.4	83.8	90.5	72.9
African-Amer.	05.9	08.8	03.9	04.8	00.0	04.6
Hispanic	31.7	13.7	12.1	05.7	05.7	13.7
Asian	11.9	05.9	03.7	03.8	01.9	05.3
Other	05.9	06.9	00.9	01.9	01.9	03.5
	100	100	100	100	100	100
<b>Occupation</b>						
Unemployed/Student	01.1	01.1	00.0	00.0	00.0	00.4
Homemaker	01.1	02.1	01.0	00.0	00.0	00.8

Laborer/Operator	22.5	13.7	08.2	06.1	03.0
Skilled/Semi-skilled	23.6	24.2	26.8	21.2	11.1
Clerical/Sales	23.7	24.2	18.6	16.2	19.2
Technical/Engineers	06.5	07.3	19.6	14.1	14.2
Managers/Professionals	21.5	27.4	25.8	42.4	52.5
	100	100	100	100	100
<b>Hourly Pay</b>					
\$0-5.99	19.5	20.5	12.8	07.6	14.1
\$6-10.99	39.0	37.0	23.1	26.6	09.8
\$11-15.99	20.7	13.7	21.8	26.6	25.4
\$16-20.99	06.5	15.1	19.2	13.9	18.3
\$21+	14.3	13.7	23.1	25.3	32.4
	100	100	100	100	100
<b>Household Income</b>					
Under \$10,000	15.6	09.7	08.2	08.0	03.3
\$10-20,000	16.7	12.9	06.2	09.0	12.0
\$20-30,000	30.2	21.5	20.6	19.0	10.9
\$30-40,000	14.6	11.8	16.5	15.0	14.1
\$40-50,000	07.3	10.8	18.6	20.0	09.8
>\$50,000	15.6	33.3	29.9	29.0	50.0
	100	100	100	100	100

### **Analyses holding age, education and ethnicity constant**

Table 5 shows relationships among knowledge and literacy practices when knowledge scores were computed after having removed variation in knowledge due to age, education, and ethnicity. This procedure reduced the numbers falling in the lowest and highest categories of knowledge and so the bottom two levels of knowledge and the top two categories of knowledge have been combined in Table 5. The data show a consistent, positive relationship between the number of literacy practices respondents reported engaging in and their scores on the knowledge checklists even when the latter are adjusted for age, education and ethnicity. All were in the predicted direction, with only "reading books or manuals" failing to attain statistical significance ( $P < .05$ )

Table 5.

#### Study 1.

Age, Education & Ethnicity held constant. Relationships of Knowledge Levels to various reading practices that respondents reported engaging in 6-7 times a week. For instance, 46.8 percent of those in Knowledge Levels (1+2) combined reported reading newspapers 6-7 times a week, while 61.4 percent of those in Knowledge Levels (4+5) combined reported reading newspapers that often.(a)

Variable	Knowledge Levels		
	(1+2)	3	(4+5)
Read For Pleasure	39.7	53.1	63.8
Read For Job	31.4	33.6	46.5
Read Book for Pleasure	31.7	39.8	43.0
Read Books or Manuals	17.5	24.8	25.7
Read Newspapers	46.8	56.8	61.4

(a) All relationships are statistically significant by Kendall's tau-b,  $P < .05$ , except reading books or manuals.

The relationships of Total Knowledge to the power indicators of occupation and income, after having removed variation due to age, education, and ethnicity, are shown in Table 6. The proportion of those in the lower two knowledge categories who are laborers was twice that of those in the upper two categories of knowledge. About three out of ten of those in the lowest two categories of knowledge are managers/professionals, while four out of ten of those in the highest two categories of knowledge are in these manager/professional jobs. Similar findings hold for income for those earning less than \$10,000 and those earning \$40,000 or more.

Table 6.

Study 1.

Age, Education & Ethnicity held constant. Relationships among Knowledge Levels, Occupational Status, and Annual Income. Data are percentage of people in each Knowledge level who are in each of the demographic categories. For instance, 29.9 percent of those in Knowledge Levels (1+2) combined were Managers/Professionals, while 41.3 percent of those in Knowledge Levels (3+4) combined were in that occupational category.(a)

Variable	Knowledge Levels		
	(1+2)	3	(4+5)
Occupation			
Laborer/Operator	13.0	13.5	05.8
Skilled/Semi-skilled	23.4	20.9	20.0
Clerical/Sales	13.0	12.2	14.2
Technical/Engineers	20.8	20.9	18.7
Managers/Professionals	<u>29.9</u>	<u>32.4</u>	<u>41.3</u>
	100	100	100
Annual Income			
Under \$10,000	13.8	06.9	05.8
\$10-20,000	15.1	07.5	11.6
\$20-30,000	22.4	18.9	19.4
\$30-40,000	13.8	13.8	16.1
\$40-50,000	07.2	18.2	14.8
>\$50,000	27.6	34.6	32.3
	100	100	100

(a) Relationships are statistically significant,  $P < .01$ , by Kendall's tau-b. Not in labor force categories (unemployed, student, homemaker) were removed from calculations due to very few cases (less than 2 in cells) from occupation cross-tabulation.

Together, Tables 5 and 6 indicate that more generally knowledgeable adults engage in greater amounts of reading, they hold higher status occupations and they earn higher levels of income, even when general knowledge scores are adjusted for differences in age, education and ethnicity.

## Study 2: Domain Specific Declarative Knowledge and Power

In Study 1, subject's general declarative knowledge was assessed using shortened versions of the Stanovich checklists for knowledge of famous authors, magazine titles, famous people, and vocabulary words (West, Stanovich, & Mitchell, 1993). It provided information about respondent's general declarative knowledge taken from samples of the knowledge of the "mainstream" or "dominant" society.

One critic of the Stanovich checklists has referred to them as being similar to the game of "trivial pursuit," and that there is essentially no "real world" value to showing that people possess such culturally "biased" knowledge (Taylor, 1994). However, the results of Study 1 counter this argument by showing "real world" relationships among so-called "mainstream," "dominant" culture knowledge and the acquisition of power.

While some may question the utility of cultural knowledge as defined in Study 1, there is no questioning the fact that citizens in a democracy need to possess considerable political knowledge to make informed choices among political candidates to represent them and to pursue their vital interests through political activities. Political knowledge is not "trivial." Therefore, to further examine the role of declarative knowledge in achieving and exercising power, Study 2 examines for the first time the relationships of domain specific, declarative, political knowledge to two indicators of power, income and political activities, when age, education, and ethnicity are held constant.

To establish construct validity of the declarative knowledge measures as indicators of political knowledge, conventional measures of political knowledge used in earlier studies of political activity were administered (Delli Carpini & Keeter, 1993; Newman, Just, & Crigler, 1992). If positive correlations of the checklist and traditional measures of political knowledge are obtained, this offers convergent validity (Messick, 1989, p. 5) for the checklist knowledge measures. Additionally, checklist measures of declarative knowledge were related to a four-item rating scale that attempted to directly gauge subject's sense of power. If positive correlations are obtained between the checklist measures of declarative political knowledge and perceived power, this provides additional convergent evidence for the validity of the knowledge checklists and the relationship of knowledge to power.

## **Method**

### **Subjects**

Data for Study 2 followed the same general random-digit-dialing telephone survey procedures as used in Study 1. Structured telephone interviews were conducted with 644 English speaking persons selected to represent a cross-section of the population 18 or older who could be reached by residential telephone in the greater San Diego, California, area during late spring and early summer, 1995. Up to four call-backs were made resulting in an overall completion rate of 50 percent, a rate comparable to or surpassing that for the better survey research firms in the area. Fewer than five percent of respondents contacted were eliminated due to inability of the subject to respond to the protocol in English. Respondents were generally well educated and affluent, reporting 14.5 (SD=3.2) years of formal schooling completed and mean household income of \$34,380 (SD=\$12,244). Mean age was 41.8 (SD=17.2). As indicated in Table 1, the sample generally corresponded to the sample of Study 1 and the 1990 U. S. Census data for San Diego, although minorities and less well educated were slightly underrepresented.

### **Instrumentation**

Using the same type of checklist approach as used in Study 1, a series of political knowledge checklists with foils was developed drawing on traditional bodies of political knowledge domains used by political scientists in studying political activism and voting (Delli Carpini & Keeter, 1993; Neuman, Just & Crigler, 1992). The measures of political knowledge were designed to tap those aspects of politics that are relevant for meaningful personal political action. For the present study, five political domains were identified including (1) Political Leaders, that is, actors or activists engaged in political processes, (2) Political Policies, policies produced by various political systems, (3) Political Groups, i.e., groups such as the National Organization for Women who are active in political movements, (4) Government Organizations, i.e., domestic or foreign government organizations such as the Bureau of Indian Affairs, and (5) Political Events such as the Three Mile Island or Exxon Valdez incidents.

As in Study 1, the approach presented subjects with a series of declarative knowledge stimuli. The Appendix, Tables A6-A10, shows the five domains of political knowledge, the questions asked to elicit responses from subjects, mean percent correct and standard deviations for each item, and the percentage of subjects for each item falling into each of five levels of total political knowledge (see below).

Reliability data for each of the subscales and the Total Political Knowledge scale were computed using Cronbach's Alpha. The reliability coefficient for the Political Leaders scale was .73; for Political Policies, .63, Political Groups, .61, Government Groups, .58, and Political Events, .62. For the Total Political Knowledge scale the reliability coefficient was .88.

### **Defining political knowledge levels**

As in Study 1, the Total Political Knowledge checklist scores of subjects were used to define five levels of Total Political Knowledge. Scores for each subscale and for the Total Political Knowledge scale (all items from all subscales) were computed by subtracting the percentage of foils misidentified as real from the percentage of real items correctly identified as real. The computation was designed to correct for guessing (West, Stanovich, & Mitchell, 1993). To obtain the five levels, each person's adjusted percent correct score on each checklist was added together to give a Total Political Knowledge score. Then the mean adjusted, percent correct score for Total Political Knowledge for the combined sample was calculated. This score was used to divide the sample into five groups or levels using the mean (53.36 adjusted percent correct) and the standard deviation (SD, 21.97 adjusted percent correct) for the total sample. Political Knowledge levels were defined in adjusted percent correct scores from low to high proficiency as: Level 1 = scores at -1.0 SD below the mean or lower (0-31 adjusted percent correct), Level 2 = scores between -.5 to -.1.0 SD (32-42 adjusted percent correct), Level 3 = scores between .5 SD (43-64 adjusted percent correct), Level 4 = scores between +.5 to +1.0 SD (65-75 adjusted percent correct), and Level 5 = scores from +1.0 SD and above (75-100 adjusted percent correct).

Conventional measures of political knowledge. To validate the political knowledge checklists as measures of political knowledge, political knowledge was also measured using a series of questions from political science studies (Delli Carpini & Keeter, 1993; Neuman, Just & Crigler, 1992). Subjects were asked which of the two parties "...is usually regarded as the most conservative" (Republican), "...currently has a majority in the U.S. House of Representatives" (Republican), "...had a majority ... before the last election" (Democratic), and "...currently has a majority in the U.S. Senate" (Republican). They were also asked the name of the first ten amendments to the Constitution (Bill of Rights), the number of times a person can be elected President (2), and the length of terms for the U. S. President (4 years), a U.S. Senator (6 years), and a U.S. Representative (2 years). For this nine item scale, called Conventional Political Knowledge, the Alpha reliability was .60.

Reading and media practices. To determine the role of media in developing political knowledge subjects were asked to indicate how many days a week they read a newspaper, how many hours a day they listened to the radio, and how many hours a day they watched television. They were asked to indicate about how many national network news programs, such as CBS, NBC, or ABC news they saw in an average week, how many local news programs they watched in a week, how many network news magazines such as 60 Minutes, 20/20, Frontline, Dateline, or Eye to Eye they watched during a week, and how many Public Broadcasting news programs such as the McNeil Lehrer News Hour, Washington Week in Review, or National Business Review they watched in an average week.

Political interests and activities. To determine relationships of political knowledge to political interests, subjects were asked to rate on a four point scale how interested they were in politics and public affairs. They were also asked to rate on a four point scale the amount of attention (high to low) they paid to politics or political issues when they watch television or read the newspaper.

Two questions were asked to determine the frequency on a four point scale (very often to never) with which subjects voted in local or national elections (combined into one voting score, Alpha reliability = .91), and

thirteen questions were asked about various activities (encouraged others to vote for one of the parties or candidates, worked for one of the campaigns, talked about politics with family members, etc.) using the same four point scale. The mean score for the thirteen questions was used to form a political activities score for each subject that could be related to political knowledge (Alpha reliability = .83).

Measures of perceived power. To assess subject's sense of power directly, a scale of "powerlessness" taken from Kohn (1976) was used. Two items asked for respondents to state whether they 1-agree strongly, 2-agree, 3-disagree, 4-disagree strongly or 9-don't know. Scores of 9 were excluded from analyses. One of these items said, "I generally have confidence that when I make plans I will be able to carry them out." The second said, "There are things I can do that might influence national policy." A third item asked, "Do you feel that most of the things that happen to you are the result of your own decisions or of things over which you have no control?" and were scored 1, meaning that things happened due to their own control, or 2, meaning things happen due to decisions over which they had no control. The fourth and final item asked, "How often do you feel powerless to get what you want out of life?" It was scored 4-very often, 3-often, 2-sometimes, 1-rarely/never. Summed over the four items, low scores indicate a feeling of power, high scores feelings of powerlessness. For the present analyses, signs of correlations were reversed to show that increments in knowledge correlate positively with increments in perceived power. Cronbach's alpha for the power scale was .39, a low but usable degree of reliability given that this is only a four item scale.

## **Results**

Validity indicators. Convergent evidence for the validity of the Total Political Knowledge checklist method as a measure of political knowledge was obtained by the finding of a significant, positive correlation of Total Political Knowledge with Total Conventional Political Knowledge ( $r = .47$ ;  $p < .001$ ). Convergent evidence that the Total Political Knowledge checklist scale is an indicator of perceived power was obtained by the significant positive correlation between the total perceived power scale and Total Political Knowledge checklist scores ( $r = .22$ ;  $p < .001$ ).

Knowledge checklists. Tables A6-A10 in the appendix show each of the items in each of the knowledge checklists along with the mean percentage correct and standard deviations for each item as well as the average correct and standard deviations for the sum of each checklist. These tables show that the Political Leaders checklist had the highest average correct scores (74 percent) and the Political Policies checklist had the lowest scores (31 percent). The remaining scales were about equal in average difficulty.

Tables A6-A-10 also show the percentage of subjects in each of the five Total Political Knowledge levels that got each item correct. For Political Leaders in Table A6, 25 percent of those in Level 1 knew of John Major, the Prime Minister of Great Britain, while almost 90 percent of those in Level 5 knew of him.

Correlational analyses. There were significant positive relationships of Total Political Knowledge checklist scores to political interests ( $r = .28$ ,  $p < .001$ ) and to the amount of attention adults said they paid to politics or political issues when they watch television or read the newspaper ( $r = .11$ ,  $p < .002$ ). There were no significant relationships of Total Political Knowledge to the frequency of listening to the radio or watching television, nor to the types of news programs watched on television, with one exception. The number of Public Broadcasting news programs watched during an average week was significantly correlated with the Total Political Knowledge checklist scores ( $r = .14$ ,  $p < .001$ ).

Interrelationships of demographic variables, political knowledge checklist scores, literacy practice and power indicators (household income, voting and political activism) are given in Table 7. These data are consistent with those of Study 1 in showing significant, positive correlations among the knowledge scores and the power indicators.

Study 2:

Correlations among demographic variables, knowledge, literacy practice and power indicators.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Education	1.00	.06*	.27	.21	.25	.25	.25	.36	.11	.16	-.06*	.18	.27	.15
Age		1.00	.18	.20	.15	.31	.19	.27	.29					
Leaders			1.00	.41	.52	.48	.46	.74	.19	.24	-.07*	.19	.29	.06*
Policies				1.00	.46	.46	.41	.72	.19	.16	-.07*	.16	.27	.10
Groups					1.00	.5	.44	.8	.13	.29	-.15	.18	.24	.06*
Organizations						1.00	.49	.79	.18	.20	-.06*	.19	.34	.18
Events							1.00	.76	.16	.2	-.10	.14	.24	.14
Total Political Knowledge								1.00	.22	.22	-.13	.23	.369	.14
Literacy Practice <sup>a</sup>									1.00	.11	-.11	.17	.25	.16
Ethnicity										1.00	.08	.17	.28	.06*
Gender											1.00	-.03*	.09	.04*
Annual Household Income												1.00	.19	.09
Voting													1.00	.40
Political Activism														1.00

\*Not significant at p <.05 or lower; all others statistically significant. a Literacy Practice is frequency of reading newspaper in a week.

To sum up these correlational data, better educated, older, caucasian adults who read newspapers and watch Public Broadcasting news programs more frequently, tend to have greater interests in politics, they are more knowledgeable about politics, they have higher household incomes, they vote more and they are more politically active.

**Analyses by knowledge levels**

Following the method of presenting of results in Study 1, analyses are presented here that show how different variables are distributed in the five different Total Political Knowledge categories defined above.

Table 8.

Study 2.

Percentage of respondents in each demographic group falling into each of five levels of Total Political Knowledge. For instance, 5.7 percent of those with 17+ years of education were in Level 1 while 28.6 percent were in Level 5.

Variables	Total Political Knowledge Levels*					
	N	1	2	3	4	5
Total Sample	644	16.1	12.6	35.9	19.7	15.7
Normal Curve		16.0	15.0	38.0	15.0	16.0
<b>Education</b>						
1-8	22	22.7	09.1	45.5	04.5	18.2
9-12	160	26.9	15.0	37.5	16.9	03.8
13-14	129	24.0	15.5	33.3	17.1	10.1
15-16	228	08.3	12.7	34.6	23.2	21.1
17+	105	05.7	05,7	37.1	22.9	28.6
<b>Age</b>						
16-18	16	56.3	12.5	31.3	00.0	00.0

19-24	82	35.4	17.1	31.7	11.0	04.9
25-39	250	16.0	13.6	40.8	16.0	13.6
40-54	132	04.5	07.6	33.3	26.5	28.0
55-64	63	12.7	11.1	34.9	25.4	15.9
65+	91	08.8	14.3	31.9	27.5	17.6
<b>Ethnicity</b>						
Caucasian	477	10.7	11.7	36.5	22.6	18.4
African-Amer.	44	29.5	15.9	29.5	15.9	09.1
Hispanic	65	35.4	13.8	36.9	07.7	06.2
Asian	32	34.4	18.8	37.5	06.3	03.1
Other	14	21.4	14.3	35.7	14.3	14.3
<b>Household Income</b>						
Under \$10,000	51	21.6	19.6	35.3	13.7	09.8
\$10,000-19,999	77	32.5	16.9	22.1	15.6	13.0
\$20,000-29,999	92	16.3	17.4	35.9	19.6	10.9
	93	09.7	12.9	45.2	16.1	16.1
\$40,000-49,999	60	11.7	10.0	31.7	28.3	18.3
\$50,000+	169	09.5	07.7	39.1	23.1	20.7
<b>Voting Behavior<sup>a</sup></b>						
Low	152	32.9	16.4	34.9	12.5	03.3
\$30,000-39,999	198	10.6	14.1	39.9	17.7	17.7
High	286	10.1	09.8	33.9	25.2	21.0
<b>Political Activism<sup>b</sup></b>						
Low	201	20.4	17.4	37.3	13.9	10.9
Medium	211	14.2	10.9	33.2	23.2	18.5
High	230	13.9	10.0	37.0	21.7	17.4

\* Data are percentages in each knowledge level. See text for definition of levels.

a Voting Frequencies: Low=never/not very often; Medium=often; High=very often.

b Political Activism: Low=average mean frequency score for 13 activities of 1.43; Medium=1.78; High=4.

First, as given in Table 8, we take a demographically defined group of adults, such as age 16-18, and show the percentage that fall into each of the five levels of knowledge. Looking at Table 8 it is clear that the less well educated, the younger, minorities, lower household income adults who vote less and are less politically active tend to fall with higher frequencies into the lower levels of Total Knowledge, confirming the data of Table 7.

The importance of Total Political Knowledge in relation to the power indicators of household income, voting and political activism is revealed again in Table 9 where each of the five Total Political Knowledge levels is analyzed to see how adults in a given level of knowledge are distributed across the demographic variables.

Table 9.

Study 2.

Percentage of respondents in each level of Total Political Knowledge who are in each of the variable categories. For instance, 21.4 percent of those in Level 1 had 15 or more years of education, while 70.2 percent of those in Level 5 had that much education.

Variable	Total Political Knowledge Levels					Total
	1	2	3	4	5	

Education						
0-8	04.8	02.5	04.3	00.8	04.0	03.4
9-12	41.3	29.6	26.0	21.3	05.9	24.8
13-14	29.8	24.7	18.6	17.3	12.9	20.0
15-16	18.3	35.8	34.2	41.7	47.5	35.4
17+	05.8	07.4	16.9	18.9	29.7	16.4
	100	100	100	100	100	100
Age						
16-18	09.0	02.5	02.2	00.0	00.0	02.5
19-24	29.0	17.5	11.4	07.2	04.0	12.9
25-39	40.0	42.5	44.7	32.0	33.7	39.4
40-54	06.0	12.5	19.3	28.0	36.6	20.8
55-64	08.0	08.8	09.6	12.8	09.9	09.9
65+	08.0	16.3	12.7	20.0	15.8	14.5
	100	100	100	100	100	100
Ethnicity						
Caucasian	50.5	70.0	76.3	87.1	88.9	75.4
African-Amer.	12.9	08.8	05.7	05.6	04.0	07.0
Hispanic	22.8	11.3	10.5	04.0	04.0	10.3
Asian	10.9	07.5	05.3	01.6	01.0	05.1
Other	03.0	02.5	02.2	01.6	02.0	02.2
	100	100	100	100	100	100
Household Income						
Under \$10,000	13.3	14.3	09.2	06.5	05.8	09.4
\$10-20,000	30.1	18.6	08.7	11.1	11.6	14.2
\$20-30,000	18.1	22.9	16.9	16.7	11.6	17.0
\$30-40,000	10.8	17.1	21.5	13.9	17.4	17.2
\$40-50,000	08.4	08.6	09.7	15.7	12.8	11.1
>\$50,000	19.3	18.6	33.8	36.1	40.7	31.1
	100	100	100	100	100	100
Voting Behavior <sup>a</sup>						
Low	50.0	30.9	23.1	15.1	05.0	23.9
Medium		21.0	34.6	34.5	27.8	35.0
High	29.0	34.6	42.4	57.1	60.0	45.0
	100	100	100	100	100	100
Political Activism <sup>b</sup>						
Low	39.8	43.2	32.6	22.0	21.8	31.3
Medium	29.1	28.4	30.4	38.6	38.6	32.9
High	31.1	28.4	37.0	39.4	39.6	35.8
	100	100	100	100	100	100

a Voting Frequencies: Low = never/not very often; Medium = often; High = very often.

b Political Activism: Low = average mean frequency score for 13 activities of 1.43; Medium = 1.78; High = 4.

### **Analyses holding age, education and ethnicity constant**

Analyses were conducted of relationships among Total Political Knowledge checklist scores and literacy practices (reading newspapers seven days a week) when knowledge scores were computed after having

removed variation in political knowledge for age, education, and ethnicity. As in Study 1, this procedure reduced the numbers falling in the lowest and highest categories of knowledge and so the bottom two levels of knowledge and the top two categories of knowledge were combined to form three categories of Total Political Knowledge. The data show that 37.1 percent of adults in the combined lowest two categories of political knowledge read newspapers seven days a week, 48.8 percent in the middle category and 49.0 percent of those in the highest two categories combined read newspapers seven days a week. This indicates a positive relationship between the amount of political knowledge adults have and the number of literacy practices they reported engaging in, even when the effects of age, education and ethnicity on knowledge scores are held constant.

Table 10.

Study 2.

Age, Education & Ethnicity held constant. Relationships among Total Political Knowledge Levels on the checklists and three indicators of power. Data are percentage of people in each Total Political Knowledge level who are in each of the indicators of power categories. For instance, 23.5 percent of those adults in the two lowest combined levels of Total Political Knowledge reported household incomes over \$50,000 while 33.7 percent of those in the two highest categories of Total Political Knowledge combined reported household incomes over \$50,000.

Variable	Total Political Knowledge Levels			
	(1+2)	3	(4+5)	
Annual Household Income				
Under \$20,000		34.2	18.9	19.9
\$20,000-50,000		42.3	45.8	46.4
\$>50,000		23.5	35.2	33.7
		100	100	100
Voting Frequency <sup>a</sup>				
Low		34.7	21.0	18.0
Medium		25.4	34.5	32.0
High		39.9	44.5	50.0
		100	100	100
Political Activism <sup>b</sup>				
Low		37.4	32.9	25.0
Medium		27.6	34.6	35.6
High		35.1	32.5	39.4
		100	100	100

a Voting Frequencies: Low = never/not very often; Medium = often; High = very often. Political Activism: Low = average mean frequency score for 13 activities of 1.43; Medium = 1.78; High = 4. All relationships are statistically significant,  $P < .05$  by the Kendall's tau test.

The relationships of Total Political Knowledge to the power indicators of household income, voting and political activism are shown in Table 10. Altogether, the data indicate that more politically knowledgeable adults engage in greater amounts of reading, they have higher levels of household income, they vote more often and they are involved in more political activities than less knowledgeable adults, even when Total Political Knowledge scores are adjusted for differences in age, education and ethnicity.

**Discussion**

At the outset of this paper, we introduced a major issue facing educators and, hence, their students. The issue is whether educational activities ought to focus more on teaching the processes of thinking, such as "critical thinking" (Freire, 1970) or "learning to learn" (Galvin, in Murnane & Levy, 1996, p. xvii) while downplaying the importance of content knowledge, or whether content knowledge is as important as processing skills (Bruer, 1993) and ought to be equally if not more emphasized in the educational process (Hirsch, 1987, 1996).

To determine the importance of content knowledge to adult living, two studies were conducted that examined relationships among general, "mainstream" or "dominant" society knowledge, domain specific political knowledge and three indicators of power, occupational status, income and political activity. In both studies, care was taken to ensure that extraneous cognitive processing variance did not influence the results. This was accomplished by using simple checklists of declarative knowledge that required listeners, on the telephone, to simply say "yes" if they thought they recognized a given factual stimulus. The task involved no reading, no drawing of inferences, no "critical thinking" and no complex "search and locate" processes that might tend to overload working memory.

The results indicated that there were strong relationships among content knowledge and power, even when age, education and ethnicity were held constant. The latter is important because it indicates that regardless of one's cultural or subcultural background, possession of large "banks" of declarative knowledge about the "mainstream" or "dominant" culture of the United States is associated with achieving and manifesting power in the "mainstream" society.

The data of Study 1 (Table 6) show that the adults in knowledge levels 4 and 5 combined were 1.38 times as likely to be managers and/or professionals and over 1.35 times as likely to earn over \$40,000 per year as were the least knowledgeable adults in levels 1 and 2. They were more likely to engage frequently in voting in local and national elections, and more likely to engage in various political activities (Study 2, Table 10). Again, these relationships were found with age, education and ethnicity held constant.

### **Vocabulary knowledge and power**

Study 1 included a measure of vocabulary knowledge among the checklists of "mainstream" declarative knowledge and found significant relationships among the vocabulary measures and the indicators of power (Table 2). These findings are consistent with research by the Johnson O'Connor Research Foundation, Inc. In one study the vocabulary scores of the presidents of Fortune 500 companies were studied (Smith & Supanich, 1984). In a second study, the vocabulary scores of managers in Fortune 500 companies were examined (Gershon, 1990). The results showed that the company presidents scored higher than the managers and the latter scored higher than college graduates who routinely took the Foundation's vocabulary tests as part of their career counseling. Thus, greater vocabulary knowledge was associated with higher levels of power (supervisory responsibility over larger numbers of others).

### **Knowledge and reading**

The correlational data of Tables 2 and 7 show positive relationships among the amount of reading practices that adults engage in and the levels of knowledge that they possess. Even when age, education and ethnicity are controlled, more knowledgeable adults reported a great deal more reading of books, newspapers, and so forth than the less knowledgeable adults (Table 5). Importantly, knowledge was not associated with amount of listening to the radio or to watching television news programs (except for those who watched the Public Broadcasting System news shows in Study 2).

The importance of reading as the primary means of acquiring knowledge has not gone unrecognized by many company presidents and managers. In the studies by the Johnson O'Connor Research Foundation, Inc. mentioned above, over half the presidents and managers said they had made deliberate efforts to increase their vocabulary knowledge since leaving school. Company presidents were asked what they did to increase their

vocabularies and over a quarter said that just general reading was used and over half said that general reading plus some method like use of a dictionary, vocabulary books, and so forth were their main methods for developing their vocabulary knowledge.

In a position contrary to that of Robert Galvin, head of Motorola, who eschews the value of factual knowledge in preference to "learning to learn," Bill Gates, the head of Microsoft, a giant in the new information age technologies, has outlined his belief in the importance of knowledge and the importance of reading as a major means of acquiring knowledge:

"It is pretty unlikely that people will become knowledgeable without being excellent readers. Multimedia systems are beginning to use video and sound to deliver information in compelling ways, but text is one of the best ways to convey details. I try to make sure I get in an hour or more of reading each weeknight and a few hours each weekend. I read at least one newspaper every day and several magazines each week. I make it a point to read at least one news weekly from cover to cover because it broadens my interests. If I read only what intrigues me, such as the science section and a subset of the business section, then I finish the magazine the same person I was before I started. So I read it all." (Gates, 1995).

In his recognition of the importance of becoming knowledgeable and the importance of broad reading for developing knowledge, Gates' position is consistent with the findings of the present study. More knowledgeable adults read more and there is reason to believe that as knowledge grows, one's literacy skills increase. The practice-engagement theory of literacy development (Reder, 1994; Stanovich, 1993; Krashen, 1993) holds that by engaging in extensive practices involving reading of a wide-ranging nature literates build vast bodies of knowledge (both declarative and procedural) and automaticity of word recognition that in turn make it possible to engage in and successfully complete a large number of literacy tasks. In turn this leads to greater knowledge and greater literacy skill.

This suggests one simple recommendation for public schooling and for adult literacy programs. To help people develop large bodies of knowledge and hence to become highly literate, K-12 and adult literacy programs should arrange conditions that will encourage students to engage in extensive, wide-ranging reading over long periods of time.

### **Knowledge and assessment practices**

Several studies have demonstrated that high levels of "prior" or "background" knowledge in a specific domain can compensate for several "years" of "general" reading skill (Recht & Leslie, 1988; Sticht et al, 1986). The National Adult Literacy Survey (Kirsch, Jungeblut, Jenkins, & Kolstad, 1993) concluded that high levels of "prior" or "background" knowledge about what one reads is prerequisite for comprehending at a high level across the wide range of tasks in the battery. For these reasons, it is likely that assessments of knowledge would be useful in estimating adult's ability to perform "real world" literacy tasks like those in the National Adult Literacy Survey.

The present results suggest that the assessment of knowledge (by checklists and/or other methods) may be a useful method for characterizing the skills and knowledge associated with functioning in a technological society. The Armed Services have spent decades and tens of millions of dollars on the Armed Services Vocational Aptitude Battery (ASVAB), consisting of ten tests, all of which require some reading and eight of which are tests primarily involving general and special vocabulary and conceptual knowledge (e.g., knowledge of geometry, electronics, automobiles, etc.) (Sticht & Armstrong, 1994, pp. 31-39). These knowledge tests are used to select applicants for military service and to predict who will be most likely to succeed in different kinds of technical training and jobs. This supports the position that knowledge assessment can serve to identify those who can use printed and written materials to function in society, at least in the high-technology world of the armed services.

## **Conclusion**

The two studies reported here have examined for the first time the relationships among declarative knowledge, literacy practices and power, as indicated by occupational status, income, and political activities when the effects of age, education and ethnicity are held constant. The results suggest the conclusion that, while high levels of knowledge are not absolutely necessary for achieving power, they certainly seem to help. Therefore educational practices that downplay the importance of content knowledge in favor of processes of thinking or learning should be reconsidered.

Further, literacy, that is reading, seems to be a much more frequent activity of the more knowledgeable adults and it appears to be a more important activity for the acquisition of knowledge than are listening to the radio or watching television. For this reason, children in the K-12 school system and adults in literacy education programs should be encouraged to do what many managers and professionals do, that is, develop self-management plans for guiding their engagement in reading and then spend a considerable amount of time in wide-ranging reading.

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## ***Footnote***

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## **References**

- Allen, L., Cipielewski, J., & Stanovich, K. E. (1992). Multiple indicators of children's reading habits and attitudes: Construct validity and cognitive correlates. *Journal of Educational Psychology*, 84, 489- 503.
- Bernstein, D., Roy, E., Srull, T., Wickens, C. (1988). *Psychology*. Boston: Houghton Mifflin.
- Bruer, J. T. (1993). *Schools for thought: A science of learning in the classroom*. Cambridge, MA: The MIT Press.
- Delli Carpini, M. X., & Keeter, S. (1993). Measuring Political Knowledge: Putting First Things First. *American Journal of Political Science*, 37, pp.1179-1206.
- Dillman, D. A. (1978). *Mail and telephone surveys: The total design method*. New York: John Wiley & Sons.
- Freire, P. (1970). *Pedagogy of the oppressed*. New York: Seabury Press.
- Frey, J. H. (1989). *Survey research by telephone*. 2nd edition. Newbury Park: Sage Publications.
- Gates, W. (1995, February) *Computerlinks: Ask Bill*. San Diego, CA: San Diego Union Tribune.
- Gershon, R. (1990, December). *The vocabulary scores of managers*. Chicago: Johnson O'Connor Research Foundation, Inc.
- Healy, A. F., & McNamara, D. S. (2006). Verbal learning and memory: Does the modal model still work? Spence, J., Darley, J. & Foss, D. (eds.) *Annual review of psychology*, Vol. 47, Palo Alto, CA: Annual Reviews, Inc., pp. 143-172.
- Hirsch, Jr., E. D. (1987). *Cultural literacy: What every American needs to know*. Boston: Houghton Mifflin Company.
- Hirsch, Jr., E. D. (1996). *The schools we need & why we don't have them*. New York: Doubleday.
- Kaplan, D. & Venezky, R. (1994). Literacy and voting behavior: a bivariate probit model with sample selection. *Social Science Research*, 23, 350-367.

- Kirsch, I., Jungeblut, A., Jenkins, L., & Kolstad, A. (1993, September). *Adult literacy in America: A first look at the results of the National Adult Literacy Survey*. Washington, DC: U. S. Government Printing Office.
  - Kohn, M. L. (1976). Occupational structure and alienation. *American Journal of Sociology*, 82, pp. 111-130.
  - Krashen, S. (1993). *The power of reading: Insights from the research*. Englewood, CO: Libraries Unlimited.
  - Kyllonen, P. C. & Christal, R. E. (1990). Reasoning ability is (little more than) working-memory capacity?!. *Intelligence*, 14, 389-433.
  - Lerner, Daniel. (1958). *The Passing of Traditional Society*. Glencoe: The Free Press.
  - Lipset, Seymour Martin. (1960). *Political Man: The Social Bases of Politics*. Garden City, NY: Doubleday & Company.
  - Messick, S. (1989). Meaning and values in test validation: the science and ethics of assessment. *Educational Researcher*, 18, 5-11.
  - Meyer, B. J. F., Marsiske, M., & Willis, S. L. (1993). Text processing variables predict the readability of everyday documents read by older adults. *Reading Research Quarterly*, 28, 235-248.
  - Murnane, R. J. & Levy, F. (1996) *Teaching the new basic skills*. New York: The Free Press.
  - Neuman, W. R. Just, M. R., & Crigler, A. N. (1992). *Common knowledge: news and the construction of political meaning*, Chicago: University of Chicago Press, 1992.
  - Recht, D. R. & Leslie, L. (1988). Effect of prior knowledge on good and poor reader's memory of text. *Journal of Educational Psychology*, 80, 16-20.
  - Reder, S. (1994). Practice-engagement theory: A sociocultural approach to literacy across languages and cultures. In: B. M. Ferdman, R-M. Weber, & A. G. Ramirez (Eds.), *Literacy across languages and cultures* (pp. 33-74). New York: State University of New York Press.
  - Smith, M. C. (1996, April/May/June). Differences in adults' reading practices and literacy proficiencies. *Reading Research Quarterly*, 31, pp.. 196-219.
  - Smith, R. & Supanich, G. (1984, August). *The vocabulary scores of company presidents*. Chicago: Johnson O'Connor Research Foundation, Inc.
  - Stanovich, K. E. (1993). Does reading make you smarter? Literacy and the development of verbal intelligence. In H. Reese (Ed.), *Advances in child development and behavior*, vol . 24. New York: Academic Press.
  - Stanovich, K. E. & Cunningham, A. E. (1993). Where does knowledge come from? Specific associations between print exposure and information acquisition. *Journal of Educational Psychology*, 85, 211-229.
  - Sticht, T. G. & Armstrong, W. B. (1994, February). *Adult Literacy in the United States: A compendium of quantitative data and interpretive comments*. Washington, DC: National Institute for Literacy.
  - Sticht, T. G., Armijo, L. A., Koffman, N., Roberson, K., Weitzman, R., Chang, F., & Moracco, J. (1986). *Teachers, books, computers, and peers: Integrated communications technologies for adult literacy development*. Monterey, CA: U. S. Naval Postgraduate School.
  - Taylor, D. (1994). The trivial pursuit of reading psychology in the "real world": A response to West, Stanovich, and Mitchell. *Reading Research Quarterly*, 29, 277-288.
  - Verba, S. & Nie, N. (1972). *Participation in America: political democracy and social equality*. New York: Harper & Row
  - West, R. F., Stanovich, K. E. & Mitchell, H. R. (1993, January/February). Reading in the real world and its correlates. *Reading Research Quarterly*, 28, 35-50.
  - Wolfinger, Raymond E., & Rosenstone, Steven J. (1980). *Who Votes?* New Haven: Yale University Press.
  - Zaller, John R. (1992). *The Nature and Origins of Mass Opinion*. Cambridge: Cambridge University Press.
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## Appendix A

### Data for Study 1

**Table A-1.**

**Study 1.**

Author Recognition Test (ART). Q26. I will now read you a list of names. Some of the people in this list are popular writers of books, magazines and/or newspaper columns, and some are not. Please just tell me if you recognize each one as a writer. Please do not guess. (10 real/5 foils) Data are percent of respondents saying "yes" to each name.

<b>Knowledge Levels</b>									
	Authors	Mean	SD	N	1	2	3	4	5
1.	Sidney Sheldon	0.82	0.39	517	46.7	82.7	83.2	93.3	95.2
2.	James Michener	0.66	0.47	516	19.0	40.4	70.1	96.2	100
3.	Louis L'Amour	0.64	0.48	515	26.7	47.1	62.6	83.8	91.4
4.	Judith Krantz	0.58	0.49	509	27.6	37.5	58.9	74.3	83.8
5.	J.R.R. Tolkien	0.58	0.49	506	15.2	31.7	54.2	84.8	92.4
6.	Joseph Wambaugh	0.49	0.50	512	18.1	31.7	46.7	54.3	88.6
7.	Irving Wallace	0.50	0.44	498	21.9	43.3	35.5	58.1	80.0
8.	James Clavell	0.44	0.50	502	16.2	22.1	32.7	56.2	82.9
9.	Bob Woodward	0.43	0.50	502	10.5	26.0	33.6	50.5	82.9
10.	Andrew Greeley	0.26	0.44	498	08.6	14.4	12.1	33.3	55.2
11.	Robert Tierney (foil)	0.20	0.40	491	14.3	22.1	19.6	22.9	16.2
12.	Isabel Beck (foil)	0.14	0.35	494	14.3	19.2	08.4	19.0	04.8
13.	P.E. Bryant (foil)	0.13	0.34	494	18.1	21.2	09.3	08.6	04.8
14.	Gerald Duffy (foil)	0.09	0.29	494	14.3	10.6	05.6	04.8	07.6
15.	Nancy Roser (foil)	0.05	0.22	490	09.5	06.7	03.7	02.9	01.0

**Table A-2.**

**Study 1.**

Magazine Recognition Test (MRT). Q27. I will now read you a list of magazine names. Some of the names are real magazines, and some are not. Please listen to the names and tell me if you recognize each as an actual magazine. Please do not guess. (9 real/6 foils). Data are percent of respondents saying "yes" to each name.

<b>Knowledge Levels</b>									
	Titles	Mean	SD	N	1	2	3	4	5
1.	Esquire	0.90	0.31	520	59.0	88.5	97.2	98.1	100
2.	Forbes	0.81	0.39	520	39.0	76.9	89.7	97.1	98.1
3.	Ladies Home Journal	0.81	0.39	516	45.7	74.0	86.0	92.4	99.0
4.	Harper's Magazine	0.73	0.45	517	32.4	55.8	84.1	91.4	93.3
5.	New Yorker	0.79	0.41	517	49.5	58.7	85.0	95.2	100.
6.	Town & Country	0.75	0.43	508	55.2	70.2	71.0	82.9	83.8

7.	Gentlemen's Quarterly	0.66	0.47	515	36.2	47.1	68.2	82.9	90.5
8.	Psychology Today	0.72	0.45	513	39.0	66.3	69.2	83.8	90.5
9.	Scientific American	0.53	0.50	505	28.6	32.7	42.1	65.7	86.7
10.	Fitness Today (foil)	0.46	0.50	489	56.2	55.8	37.4	42.9	22.9
11.	Amern. Jrnl. Rev. (foil)	0.35	0.48	486	55.2	45.2	29.9	22.9	07.6
12.	Outdoor Times (foil)	0.27	0.45	484	35.2	26.9	26.2	21.0	16.2
13.	Motor Sports (foil)	0.24	0.43	481	35.2	35.6	12.1	21.0	06.7
14.	Health & Life (foil)	0.22	0.42	483	36.2	33.7	15.0	11.4	05.7
15.	Trends American (foil)	0.10	0.31	478	21.0	12.5	04.7	06.7	02.9

**Table A-3.**

**Study 1.**

Cultural Knowledge Test. Q31. I will now read you a list of names of persons. Some of the people in this list are popular famous persons, and some are not. Please listen to each name and tell me if you know the person to be famous. Do not guess. (17 real/6 foils). Data are percent of respondents saying "yes" to each name.

<b>Knowledge Levels</b>									
	Names	Mean	SD	N	1	2	3	4	5
1.	Greta Garbo	0.90	0.30	516	58.1	84.6	98.1	100.	100.0
2.	Harry Houdini	0.90	0.30	514	58.1	89.4	96.3	98.1	98.1
3.	George Gershwin	0.84	0.37	510	43.8	74.0	91.6	98.1	100.0
4.	Ingmar Bergman	0.73	0.44	511	31.4	58.7	72.9	96.2	97.1
5.	Cole Porter	0.73	0.44	509	27.6	50.0	80.4	95.2	100.0
6.	Marie Curie	0.71	0.45	509	31.4	51.9	72.0	92.4	96.2
7.	Margaret Mead	0.69	0.46	508	30.5	51.0	61.7	90.5	100.0
8.	Walter Raleigh	0.65	0.48	505	33.3	53.8	59.8	81.9	84.8
9.	Jean Jacques Rousseau	0.57	0.50	505	39.0	51.9	45.8	64.8	72.4
10.	Rosa Parks	0.56	0.50	500	36.2	44.2	41.1	65.7	79.0
11.	Georgia O'Keefe	0.46	0.50	496	15.2	27.9	29.9	61.9	81.0
12.	Paul Cezanne	0.41	0.49	497	13.3	20.2	18.7	61.0	79.0
13.	Margaret Sanger	0.37	0.48	493	19.0	26.9	24.3	42.9	60.0
14.	Carlos Fuentes	0.33	0.47	493	30.5	24.0	24.3	38.1	39.0
15.	Enrico Fermi	0.30	0.46	493	13.3	13.5	14.0	36.2	64.8
16.	Sylvia Plath	0.25	0.44	488	12.4	21.2	17.8	19.0	47.6
17.	Steve Biko	0.12	0.32	485	08.6	03.8	03.7	12.4	24.8
18.	Darwin Muir (foil)	0.15	0.35	483	13.3	17.3	11.2	17.1	08.6
19.	Miriam Sexton (foil)	0.12	0.32	482	14.3	14.4	07.5	11.4	05.7
20.	John Gottman (foil)	0.11	0.31	485	17.1	12.5	07.5	11.4	02.9
21.	W. Patrick Dickson (foil)	0.10	0.30	484	20.0	18.3	05.6	03.8	00.0
22.	Reinhold Klieger (foil)	0.09	0.29	482	11.4	09.6	08.4	07.6	05.7
23.	Dale Blyth (foil)	0.05	0.23	479	11.4	07.7	01.9	02.9	01.0

**Table A-4.**

Study 1.

Vocabulary Knowledge Test (VKT). Q36. I will now read you a list of vocabulary words. Some of the words in this list are real words, and some are not. Please listen to the words and tell me if you know the word to be real. Please do not guess. (14 real/7 foils). Data are percent of respondents saying "yes" to each name.

Knowledge Levels									
	Words	Mean	SD	N	1	2	3	4	5
1.	audible	0.90	0.30	513	61.0	87.5	93.5	98.1	100.
2.	optimize	0.85	0.35	513	56.2	81.7	89.7	94.3	94.3
3.	polarity	0.84	0.37	516	54.3	77.9	86.9	94.3	97.1
4.	disconcert	0.80	0.40	506	44.8	74.0	77.6	91.4	97.1
5.	absolution	0.77	0.42	507	38.1	67.3	75.7	94.3	95.2
6.	nuance	0.74	0.44	510	30.5	51.0	83.2	92.4	100.
7.	nitrous	0.71	0.45	512	46.7	63.5	70.1	81.9	85.7
8.	irksome	0.65	0.48	503	20.0	45.2	58.9	87.6	98.1
9.	ubiquitous	0.61	0.49	504	19.0	40.4	53.3	81.0	97.1
10.	epicurean	0.57	0.50	500	22.9	30.8	50.5	70.5	94.3
11.	connote	0.53	0.50	498	30.5	26.9	37.4	67.6	89.5
12.	confluence	0.53	0.50	494	33.3	42.3	29.9	58.1	83.8
13.	eventuate	0.48	0.50	491	41.0	46.2	42.1	44.8	50.5
14.	purview	0.44	0.50	490	30.5	42.3	23.4	41.9	69.5
15.	arrate (foil)	0.30	0.46	496	41.9	35.6	26.2	22.9	15.2
16.	ineffity (foil)	0.18	0.38	483	34.3	18.3	11.2	12.4	06.7
17.	nonquacity (foil)	0.13	0.33	481	16.2	16.3	12.1	10.5	02.9
18.	neotatin(foil)	0.11	0.31	481	18.1	10.6	06.5	10.5	03.8
19.	metention (foil)	0.09	0.28	481	18.1	13.5	03.7	02.9	01.9
20.	ceiloplaty (foil)	0.06	0.24	476	08.6	04.8	05.6	03.8	04.8
21.	comectial (foil)	0.05	0.22	472	12.4	09.6	00.9	00.0	00.0

Table A-5.

Study 1. Items from the telephone survey relevant to the assessment of adult literacy and other media practices.

Item		M	SD	n
Q5A.	On an average day about how many hours do you watch television?	2.47	1.6	9529
Q6.	On an average day about how many hours do you listen to radio?	2.68	2.93	533
Q7.	In an average week about how many times do you read a newspaper?	4.40	2.76	534
Q25.	How often during an average week do you do each of the following:			
	a. Read something for pleasure?	4.68	2.50	528
	b. Read something because your job requires it?	3.37	2.80	524
	c. Read a book to a child?	0.64	0.83	529
	d. Read a book for pleasure?	3.10	2.78	527
	e. Read letters?	0.91	0.73	527
	f. Read a newsmagazine?	0.79	0.67	528

g. Read local or national news in a newspaper?	4.38	2.77	529
h. Read the sports section of a newspaper?	2.38	2.91	529
i. Read the editorial section of a newspaper?	2.69	2.85	529
j. Listen to someone else in your household read aloud?	0.52	0.74	529
k. Read books or manuals to help you do your job?	2.34	2.51	523

## Data for Study 2

Table A-6.

### Study 2.

Political Leaders Test (PLT). Q.14. I will now read you a list of names. Some of the people in this list are or have been political leaders and some are not. Please just tell me if you recognize each one as a political leader. Please do not guess. (11 real/5 foils) Data are percent of respondents saying "yes" to each name.

Knowledge Levels								
Leaders	Mean	SD	N	1	2	3	4	5
1. Fidel Castro	0.96	0.20	644	78.8	95.1	99.6	100	99.0
2. Albert Gore	0.92	0.28	644	76.9	87.7	93.5	96.1	100
3. Boris Yeltsin	0.90	0.30	644	61.5	77.8	97.4	99.2	99.0
4. Yassir Arafat	0.89	0.31	644	60.6	85.2	94.4	96.1	100
5. Walter Mondale	0.89	0.32	644	62.5	84.0	90.5	100	100
6. Ayatollah Khomeini	0.87	0.34	644	56.7	79.0	92.2	97.6	98.0
7. Janet Reno	0.83	0.38	644	53.8	69.1	84.8	97.6	99.0
8. Barbara Boxer	0.83	0.38	644	59.6	71.6	84.4	95.3	95.0
9. Colin Powell	0.77	0.42	644	45.2	67.9	80.5	90.6	92.1
10. Sandra O'Connor	0.77	0.42	644	65.4	65.4	69.7	96.9	91.1
11. John Major	0.51	0.50	644	25.0	35.8	42.0	66.1	89.1
Foils								
12. Melbourne Hovell	0.11	0.32	644	19.2	13.6	11.3	07.9	05.9
13. Catherine Rudder	0.09	0.29	644	22.1	08.6	08.2	05.5	03.0
14. Ben Ying Huie	0.08	0.27	644	11.5	12.3	08.2	03.9	03.0
15. Richard McGaw	0.08	0.27	644	14.4	12.3	08.2	03.1	02.0
16. Robert Entman	0.06	0.24	644	08.7	11.1	06.1	04.7	02.0
Total Subscale:	0.74	0.24	644					

Table A-7.

### Study 2.

Political Policies Test (PPT). Q.15. I will now read you a list of political terms. Some of the terms on this list are public policies, and some are not. Please just tell me if you recognize a term as being a real public policy. Please do not guess. (12 real/4 foils) Data are percent of respondents saying "yes" to each name.

## Knowledge Levels

<b>Policies</b>	Mean	SD	N	1	2	3	4	5
1. Medicaid/Medical	0.95	0.23	644	86.5	93.8	93.5	99.2	100
2. Geneva Convention	0.84	0.37	644	57.7	71.6	89.6	91.3	96.0
3. Aid to Families With Dependent Children	0.82	0.39	644	68.3	65.4	83.1	92.9	90.1
4. Voting Rights Act	0.82	0.38	644	76.9	77.8	83.1	85.8	83.2
5. Apartheid	0.81	0.39	644	52.9	69.1	86.1	93.7	94.1
6. Head Start	0.78	0.41	644	54.8	66.7	80.1	87.4	95.0
7. General Agreement Trade & Tariffs	0.64	0.48	644	50.0	50.6	63.6	70.9	80.2
8. Glasnost	0.58	0.49	644	13.5	38.3	58.9	78.0	94.1
9. Perestroika	0.54	0.50	644	16.3	37.0	49.8	70.9	92.1
10. Workfare	0.50	0.50	644	57.7	46.9	44.6	49.6	59.4
11. Detente	0.46	0.50	644	19.2	33.3	37.2	65.4	82.2
12. Most Favored Nation	0.45	0.50	644	18.3	21.0	38.1	60.6	87.1
<b>Foils</b>								
13. Anti-Immigration Program	0.62	0.49	644	77.9	76.5	68.4	52.8	32.7
14. Universal Rights Act	0.38	0.48	644	50.0	45.7	38.5	35.4	18.8
15. Save Our Nation	0.38	0.48	644	51.0	45.7	40.7	32.3	16.8
16. Nonlateralism	0.11	0.31	644	14.4	16.0	10.8	08.7	04.0
Total Subscale:	0.31	0.32	644					

**Table A-8.**

**Study 2.**

Political Groups Test (PGT). Q.16. I will now read you a list of groups. Some of the groups on this list are or have been politically active and some have not. Please just tell me if you recognize a group as being politically active. Please do not guess. (10 real/6 foils) Data are percent of respondents saying "yes" to each name.

<b>Knowledge Levels</b>								
<b>Groups</b>	Mean	SD	N	1	2	3	4	5
1. Planned Parenthood	0.92	0.27	644	84.6	88.9	92.2	96.9	98.0
2. Natl. Org. for Women	0.92	0.28	644	76.0	91.4	92.6	98.4	98.0
3. American Medical Association	0.89	0.31	644	74.0	86.4	89.2	94.5	99.0
4. United Auto Workers	0.84	0.37	644	60.6	69.1	87.4	94.5	96.0
5. Sierra Club	0.82	0.38	644	50.0	77.8	85.7	92.1	97.0
6. Irish Republican Army	0.81	0.39	644	45.2	60.5	87.4	98.4	99.0
7. Palestine Liberation Organization	0.81	0.39	644	47.1	71.6	83.5	97.6	97.0
8. Amnesty International	0.80	0.40	644	56.7	70.4	82.3	89.0	97.0
9. AFL-CIO	0.75	0.43	644	34.6	66.7	78.4	91.3	98.0
10. Abraham Lincoln Brigade	0.14	0.35	644	19.2	17.3	08.7	12.6	18.8
<b>Foils</b>								
11. Natl. Public Forum	0.41	0.49	644	53.8	48.1	41.1	40.9	19.8
12. Forum for Racial Equality	0.35	0.48	644	60.6	37.0	39.8	24.4	08.9
13. Committee Minority Justice	0.21	0.41	644	48.1	38.3	18.6	07.1	02.0

14. Congress for Peace and Justice	0.20	0.40	644	44.2	33.3	18.2	11.0	00.0
15. Taxpayers of World, Unite	0.18	0.38	644	26.9	19.8	17.3	16.5	08.9
16. Action, Safety, Health, Inc.	0.14	0.35	644	34.6	19.8	13.0	06.3	01.0
Total Subscale:	0.52	0.30						644

**Table A-9.**

**Study 2.**

Government Organizations Test (GOT). Q.18. I will now read you a list of political terms. Some of the terms on this list are government structures or organizations, and some are not. Please just tell me which you think are significant political structures or organizations. Please do not guess. (10 real/6 foils) Data are percent of respondents saying "yes" to each name.

<b>Knowledge Levels</b>								
<b>Organizations</b>	Mean	SD	N	1	2	3	4	5
1. Environmental Protection Agency	0.95	0.21	644	33.7	39.5	45.0	66.1	82.2
2. Center for Disease Control	0.86	0.35	644	76.9	80.2	87.9	91.3	89.1
3. Federal Reserve Board	0.85	0.36	644	64.4	80.2	84.8	92.9	98.0
4. Occupational Safety Health Administration	0.84	0.37	644	72.1	80.2	82.3	91.3	94.1
5. Bureau Indian Affairs	0.74	0.44	644	46.2	53.1	75.3	89.8	95.0
6. Electoral College	0.73	0.44	644	49.0	60.5	74.0	85.0	93.1
7. Natl. Endowment Humanities	0.63	0.48	644	51.9	44.4	61.5	78.7	73.3
8. Office Mgt & Budget	0.59	0.49	644	51.0	46.9	49.8	70.9	85.1
9. Intntl. Monetary Fund	0.58	0.49	644	51.0	43.2	50.2	59.8	90.1
10. European Economic Community	0.52	0.50	644	33.7	39.5	45.0	66.1	82.2
<b>Foils</b>								
11. Organization Petroleum Importers	0.30	0.46	644	47.1	42.0	25.1	26.0	15.8
12. Environmental Utilization Agency	0.26	0.44	644	49.0	44.4	28.1	09.4	02.0
13. US-Chinese Security Council	0.18	0.39	644	37.5	23.5	19.0	08.7	04.0
14. Taxpayers Corps	0.15	0.36	644	44.2	24.7	12.1	03.1	01.0
15. Agency for Capitalism	0.13	0.34	644	36.5	25.9	10.0	03.1	00.0
16. Berlin Defense Agency	0.09	0.28	644	27.9	17.3	03.5	01.6	02.0
Total Subscale:	0.55	0.29	644					

**Table A-10.**

**Study 2.**

Political Events Test (PET). Q.19. I will now read you a list of events. Some of the events on this list are significant political events, and some are not. Please just tell me if you recognize an event as being a significant political event. Please do not guess. (12 real/4 foils) Data are percent of respondents saying "yes" to each name.

<b>Knowledge Levels</b>								
<b>Authors</b>	Mean	SD	N	1	2	3	4	5
Exxon Valdez Incident	0.88	0.32	644	67.3	92.6	91.8	91.3	95.0

Whitewater	0.87	0.33	644	72.1	85.2	88.3	92.1	96.0
Chernobyl Incident	0.83	0.38	644	50.0	75.3	89.2	92.1	96.0
Tianamen Square	0.82	0.39	644	43.3	70.4	87.9	94.5	99.0
Three Mile Island	0.81	0.39	644	42.3	72.8	88.7	92.9	97.0
Contra War	0.77	0.42	644	48.1	72.8	81.4	86.6	88.1
Afganistan War	0.77	0.42	644	55.8	64.2	76.2	88.2	96.0
Falklands War	0.68	0.46	644	38.5	46.9	70.1	86.6	90.1
Perestroika	0.68	0.47	644	32.7	49.4	68.4	86.6	96.0
Irangate Scandal	0.66	0.47	644	48.1	61.7	60.2	77.2	89.1
Miranda vs Arizona	0.57	0.50	644	34.6	44.4	57.6	67.7	75.2
James Baker Scandal	0.48	0.50	644	43.3	48.1	51.5	49.6	39.6
<b>Foils</b>								
Phnom-Pen Incident	0.43	0.50	644	36.5	39.5	40.7	46.5	51.5
American Recapitalization	0.14	0.34	644	34.6	21.0	13.0	03.1	01.0
Assassination of John Barrymore	0.12	0.33	644	26.9	17.3	10.8	08.7	000
Invasion of Santo Thomas	0.11	0.31	644	20.2	12.3	13.4	03.9	02.0
Total Subscale:	0.52	0.22	644					