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Workers With Higher Literacy Skills Not as Well Rewarded in Rural Areas

According to the 1992 National Adult Literacy Survey, rural workers score somewhat lower than their urban counterparts in their ability to use written and quantitative materials. However, younger rural workers' scores are not significantly different from urban workers' scores, reflecting the positive changes in the rural education system over the past several decades. Additionally, rural workers earn less than urban workers with the same literacy skills. This finding suggests that increasing rural literacy may not be enough to attract more high-paying jobs to rural areas.

THE importance of universal literacy to democratic institutions and the Nation's prosperity has long been appreciated. More recently, several major studies of workforce quality have concluded that good literacy skills have become a precondition for economic success. Perhaps the most influential of these studies was the 1992 report by the Secretary of Labor's Commission on Achieving Necessary Skills (SCANS), which emphasized the growing importance of basic academic and communication skills for workers. These conclusions, summarized in a list of "SCANS skills," are playing an influential role in national efforts to improve schools, school-to-work transition, and adjustment assistance for displaced workers (see "SCANS Skills," p.46).

The argument for an increased literacy threshold is easily summarized. Computers and other new technologies, as well as organizational strategies that enhance flexibility through decentralized decisionmaking, mean that information processing tasks are an increasingly important component of job responsibilities. A growing number of workers must use symbolic information, presented in computer graphics, written manuals, and other diverse forms. Workers are also frequently required to communicate information they have collected or generated to customers, managers, or other workers. Over the span of

workers' careers, continuous learning looms larger as job requirements—and often employers—more frequently change. Lifelong education and training is much more difficult for workers lacking good literacy skills. In short, literacy is a critical threshold skill for workers in the "information age." It follows that the literacy levels of the rural workforce are an important component of rural human capital supply with far-reaching implications for the economic prospects of rural workers and their communities.

The recent release of data from an unprecedented survey—the 1992 National Adult Literacy Survey (NALS)—allowed us to analyze rural workforce literacy (see "Data and Methods," p. 51, for details on the NALS). Although rural literacy is closely related to educational attainment (see articles by Paasch and Swaim, pp. 24-34 and Gibbs, pp. 35-44) and educational achievement (see article by Greenberg and Teixeira, pp. 17-23), our analyses of adult literacy add two important new dimensions to an overall assessment of rural human capital. First, we look beyond the qualifications of future rural workers—those coming out of high school or college today—to assess the skills of the current adult workforce. Many of today's workers completed their schooling at a time when fewer rural than urban youths completed high school and rural achievement levels lagged. Second, the NALS provides a continuous and multidimensional measure of literacy skills applied on the job and in other nonacademic contexts by adults. Literacy is not a simple threshold, such as the ability to sign one's name or complete grade school. Rather, workforce literacy is a continuous measure of individuals'

Elizabeth Greenberg is a social science analyst employed by the Washington State University, Pullman. Paul Swaim is an economist at the Organization for Economic Cooperation and Development, Paris, France, and Ruy Teixeira is a sociologist in the Rural Economy Division, ERS.

proficiency at information processing tasks, which is related to, but is not directly measured by, years of schooling or scores on academic achievement tests.

Rural Workforce Literacy

The literacy levels of rural adults vary widely, but are quite low on average (table 1). The average rural scores on prose, document, and quantitative measures of literacy lie near the upper end of level 2 ("low"). Adults employed at the time of the survey average 10 to 13 points higher than all adults, yet approximately 40 percent of rural workers scored in the very low or low ranges (levels 1 - 2) and appear to have limited abilities to use written and quantitative materials (fig. 1). These workers may become trapped in low-skill and low-paying jobs because they are unable to qualify—or even train—for better paying and higher skill jobs. Nearly half of all nonmetro adults, who represent the total potential rural workforce, score in the very low or low ranges.

Do limited literacy proficiencies represent a significant economic handicap for rural workers? The implications of rural literacy scores for rural areas' ability to compete economically can best be assessed by comparing rural and urban scores. Nonmetro literacy skills are somewhat lower than metro, particularly when comparing

suburban metro areas with the most rural of the non-metro areas (table 2). This gap suggests that the most rural areas may have a workforce literacy problem when competing with urban, particularly suburban, areas. Rural-urban comparisons of the distribution of workers across the five performance levels also indicate a significant rural deficit in the two highest performance levels. For example, 28 percent of employed metro adults had high or very high prose literacy scores compared with 19 percent of nonmetro adult workers (table 1).

Older, Southern, and Black Rural Adults Have the Widest Literacy Gaps

Do all rural adults have a literacy problem, or only certain groups? For simplicity, we focus on average prose scores for all adults in looking at subsectors of the rural population. Unless otherwise noted, similar conclusions hold for document and quantitative literacy, the distribution of individuals across literacy performance levels, and the employed workforce.

Perhaps of the greatest importance, the rural literacy gap is nonexistent for younger adults (table 3). The rural gap in average prose scores is limited to individuals age 60 and older, many of whom are no longer in the active workforce. Nonmetro document and quantitative

SCANS Skills

The Secretary of Labor's Commission on Achieving Necessary Skills (SCANS) identified eight areas of workplace know-how that workers need for solid job performance. Those skills are grouped into five competencies and three foundational skills.

Workplace Competencies

Effective workers can productively use:

- Resources—They know how to allocate time, money, materials, space, and staff.
- Interpersonal skills—They can work on teams, teach others, serve customers, lead, negotiate, and work well with people from culturally diverse backgrounds.
- Information—They can acquire and evaluate data, organize and maintain files, interpret and communicate, and use computers to process information.
- Systems—They understand social, organizational, and technological systems, can monitor and correct performance, and can design or improve systems.
- Technology—They can select equipment and tools, apply technology to specific tasks, and maintain and troubleshoot equipment.

Foundational Skills

Competent workers in the high-performance workplace need:

- Basic skills—reading, writing, arithmetic and mathematics, speaking, and listening.
- Thinking skills—the ability to learn, to reason, to think creatively, to make decisions, and to solve problems.
- Personal qualities—individual responsibility, self-esteem and self-management, sociability, and integrity.

Source: U.S. Department of Labor, Secretary's Commission on Achieving Necessary Skills, *Learning a Living: A Blueprint for High Performance*, April 1992, p. xiv.

scores lag metro for individuals age 35 and older, however, an age range that includes the majority of the workforce. Even among young adults (ages 25-34) the share with high or very high literacy is lower in nonmetro areas, probably reflecting their lesser college and post-graduate education (table 1). Despite these qualifications, it is clear that the rural-urban literacy gap is primarily due to older workers.

Rural literacy scores are neither consistently higher nor lower than urban scores controlling for the educational level of the respondents (table 3). This finding helps to explain the age patterns noted above, because older rural individuals completed their schooling at a time when rural primary and secondary education had not caught up to urban education. The fact that younger rural cohorts more closely resemble their urban counterparts in both secondary education and literacy suggests that the rural

literacy gap is closing, but may not fully vanish if urban youths continue to receive more college-level education.

Nonmetro residents in the West actually score higher than metro residents in that region. In the South, nonmetro residents score 21 points lower than their metro counterparts. By race, White nonmetro residents score 15 points below White metro residents and Black nonmetro residents score nearly 30 points below their urban counterparts. However, Hispanic nonmetro residents score over 20 points better than metro Hispanics, many of whom are recent immigrants with limited English proficiency. (There were not enough nonmetro Asians in the NALS data set for us to accurately measure their achievement.) Younger (25-34 year olds) nonmetro Southerners and Blacks have made considerable gains over older cohorts and closed part of the gap with their urban counterparts, but still have below-average literacy.

Table 1

Literacy scores by nonmetro/metro status, employment status, and age, 1992

About half of nonmetro adults had very low or low literacy, but employed and young adults scored higher

Item	Mean test score	Distribution by literacy levels:				
		Level 1 (very low) 0-225	Level 2 (low) 226-275	Level 3 (medium) 276-325	Level 4 (high) 326-375	Level 5 (very high) 376-500
	Points	Percent				
Total adult population:						
Prose proficiency						
Metro	274.0	20.4	25.7	32.0	18.4	3.4
Nonmetro	268.5	20.6	30.6	32.9	13.8	2.1
Document proficiency						
Metro	268.3	22.6	27.3	30.9	16.5	2.6
Nonmetro	262.1	24.5	30.8	30.5	12.6	1.6
Quantitative proficiency						
Metro	272.2	21.9	24.9	30.3	18.4	4.5
Nonmetro	268.4	21.5	28.2	32.6	15.0	2.6
Employed adults:						
Prose proficiency						
Metro	288.6	13.4	22.9	35.6	23.3	4.8
Nonmetro	281.7	13.4	26.8	40.6	16.2	2.9
Document proficiency						
Metro	284.3	14.2	25.4	35.2	21.5	3.7
Nonmetro	276.6	15.9	29.3	36.2	16.6	2.0
Quantitative proficiency						
Metro	289.2	13.3	23.9	33.6	23.3	5.9
Nonmetro	283.6	13.5	26.1	37.5	19.3	3.5
Young adults, ages 25-35:						
Prose proficiency						
Metro	282.4	16.8	23.0	34.4	21.6	4.2
Nonmetro	283.3	12.4	31.0	35.5	17.9	3.2
Document proficiency						
Metro	281.3	16.6	24.2	34.3	21.3	3.8
Nonmetro	281.1	13.7	30.1	37.3	16.4	2.5
Quantitative proficiency						
Metro	280.9	18.0	23.0	33.2	20.4	5.4
Nonmetro	283.7	15.0	28.0	35.9	17.1	4.0

Source: Calculated by authors using data from the 1992 National Adult Literacy Survey.

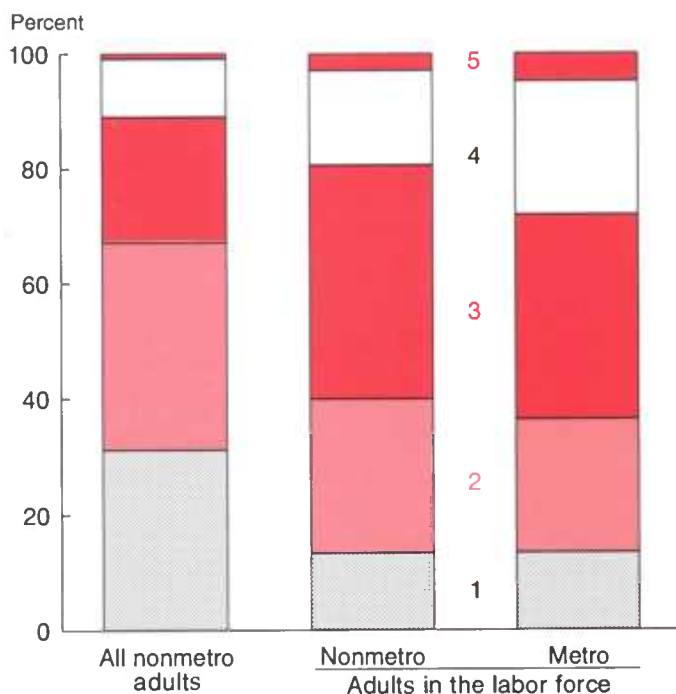
Determinants of Literacy and the Rural Literacy Gap

Scores from the NALS indicate that rural literacy levels are modestly lower than urban—particularly suburban—literacy levels. The association between lower literacy and rural residence is somewhat difficult to interpret,

Figure 1

Distribution of adults by prose literacy levels, 1992

Nonmetro adults in the labor force score higher than all nonmetro adults, but lower than metro adults in the labor force



Source: Calculated by authors using data from the National Adult Literacy Survey.

Table 2

Average literacy scores by rural-urban continuum, 1992

Literacy is highest in suburban counties and lowest in the most rural counties

Rural-urban continuum	Prose	Document	Quantitative
Metro:			
Central city	272.9	267.4	271.2
Suburban	285.3	279.7	285.7
Medium	273.6	267.1	271.3
Small	275.6	270.3	273.6
Nonmetro:			
Urban, adjacent	273.0	268.0	272.4
Urban, nonadjacent	275.9	268.7	277.0
Less urban or totally rural	264.7	258.3	264.3

Note: See Data and Methods, p. 51, for definitions of continuum groups.

Source: Calculated by authors using data from the 1992 National Adult Literacy Survey.

however, because literacy levels vary strongly across demographic groups and regions. We use regression analysis to help sort out these complex relationships and shed additional light on the extent, causes, and consequences of rural deficits in literacy skills (see "Data and Methods," p. 51, for details on the statistical procedure). To focus on issues related to the adult workforce, we dropped teenagers from our sample when conducting this regression analysis.

When the three literacy scores are regressed on residence indicators alone, the associated coefficients correspond to total area differences in mean literacy. For example, mean prose scores for adults age 20 and older were 6.2 points higher among metro than nonmetro residents. Similarly, residents of the largest central cities and their suburbs had mean prose scores 9.2 and 21.8 points higher than residents in the most rural counties.

After controlling for other characteristics of the respondents—including age, gender, marital status, education, parents' education, race, ethnicity, foreign or native-born, native speaker of English or not, and region of resi-

Table 3

Average prose scores by education, region, race, and ethnicity

The nonmetro-metro literacy gap is largest for older, southern, and Black adults

Item	Metro	Nonmetro
Points		
Age:		
25-34	282.4	283.3
35-59	279.2	284.0
60 or older	241.1	231.2
Education:		
Some high school	228.8	235.4
High school graduate	267.0	275.8
Bachelor's degree	320.5	324.8
Post-graduate degree	337.0	329.2
Region:		
Northeast	269.4	270.7
Midwest	280.2	277.9
South	273.5	252.2
West	274.0	290.7
Race/Ethnicity:		
White	290.3	275.9
Black	241.4	213.3
Asian/Pacific	241.4	NA
Other	228.9	259.9
Hispanic ¹	213.7	234.1

¹Hispanics may be of any race and overlap with the racial categories. NA - Mean score not reported for nonmetro Asians due to inadequate sample size.

Source: Calculated by authors using data from the 1992 National Adult Literacy Survey.

Table 4

Rural-urban gaps in average adult literacy scores and scores adjusted for respondent characteristics, 1991*Measurable characteristics of the population account for much of the rural gap in literacy*

Excess over less urban and totally rural nonmetro area scores: ¹							
Literacy category	Metro-nonmetro	Metro				Nonmetro	
		Central city	Suburb	Medium	Small	Urban, adjacent	Urban nonadjacent
Points							
Area differences:							
Prose	6.2	9.2	21.8	9.9	11.6	9.4	11.8
Document	7.0	10.4	22.7	9.7	12.6	10.7	11.3
Quantitative	4.3	7.8	22.4	7.5	10.0	9.2	13.3
Area differences adjusted for other respondent characteristics: ²							
Prose	2.8	4.7	6.7	2.6	4.3	2.9	3.1
Document	2.6	4.1	7.1	1.9	4.1	2.7	2.3
Quantitative	1.0	3.0	5.8	-0.4	0.9	1.3	2.6

Note: Only adults 20 years of age and older were included in this analysis.

¹See Data and Methods, p. 51 for descriptions of these rural-urban continuum groups.

²The regressions contained 33 control variables for individual demographic and other characteristics. See Data and Methods, p. 51 for a fuller description of the variables and the regression model.

Source: Calculated by authors using data from the 1992 National Adult Literacy Survey.

dence—area differences in literacy are reduced by about two-thirds, although still highly statistically significant in most cases. The fact that the control variables “absorb” much of the differences in literacy confirms that the demographic and regional composition of rural populations tends to depress literacy levels compared.

What are the most important demographic characteristics that depress literacy levels in rural areas and are they amenable to policy interventions? Are there any offsetting rural advantages that raise literacy?

Table 5 reports simulated compositional effects for prose literacy (similar conclusions hold for document and quantitative literacy). We report separately composition effects for independent variables for which both the metro-nonmetro difference in data means and the associated coefficient were statistically significant at the 1-percent level. That is, we focus on the largest and most precisely estimated composition effects although we also report the combined effect of all of the other compositional differences.

Two characteristics of the nonmetro population—higher average age and lower average education—significantly lower literacy levels. Individuals’ and parents’ educational gaps together lower nonmetro prose literacy by 10.4 points, significantly more than the total nonmetro prose gap of 6.2 points.

Some characteristics of the nonmetro population tend to raise literacy scores. Relatively fewer immigrants, ethnic and racial minorities, and non-native English speakers, all groups with below-average (English-language) literacy, live in nonmetro areas. Other small differences in characteristics lower the nonmetro gap a further 0.9 percentage point. Despite these pluses, the net effect of all of the differences in population characteristics that we are able to control for in our regression analysis is to depress nonmetro prose literacy by 3.4 points. The sum of this total compositional effect and the net nonmetro effect, which remains even after introducing the control variables into the model (2.8 points), yields the total nonmetro prose gap of 6.2 points.

In sum, the determinants of literacy are complex. Although literacy tends to be a little lower in rural areas, rural-urban differences in literacy are modest compared with differences in literacy across other groupings, such as education levels, race, and ethnicity. It is important for rural policymakers to take account of the low literacy of much of the rural population and of the demographic and other factors that facilitate or impede the further development of rural literacy. Our finding that the lower educational levels of older rural residents is a source of low literacy suggests—as would be expected—that improved schooling is a powerful cure for low literacy in the long run, a strategy that most rural school districts are already pursuing. Remedial basic skills programs for workers with inadequate literacy skills would be needed to attack

the core of the current rural literacy gap. It is a cause for concern that very few workers participate in basic skills programs and that nonmetro participation is a little lower than metro (fig. 2).

Literacy Skills and the Demand for Labor

How much of a demand is there for literacy skills and do rural and urban areas differ in their levels of demand for these skills? To begin with, individuals with greater literacy skills are more likely to be employed and earn higher wages when employed (fig. 3). Do these associations indicate a large labor market payoff to bettering one's literacy skills? It is plausible that many employers value literate workers and pay a premium to recruit them. However, individuals scoring well on the NALS test also tend to have characteristics beyond literacy that employers value, such as college degrees. Multivariate analysis can help to isolate the true contribution of literacy to labor market rewards.

Table 5

The contribution of differences in population characteristics to the nonmetro-metro gap in average adult prose literacy scores, 1991

Historically lower rural education is still the most important source of lower rural literacy

Characteristic	Contribution to metro-nonmetro gap
	Points
Characteristics associated with lower nonmetro prose literacy:	
Older	1.0
Less educated—	
Own education	8.5
Parents' education	1.9
Characteristics associated with higher nonmetro prose literacy:	
Fewer immigrants	-2.1
Fewer Blacks	-1.0
Fewer Hispanics	-1.6
Fewer non-native English speakers	-2.4
Other (individually small) differences in characteristics	-.9
Total compositional effect	3.4
Gap net of compositional effects	2.8
Total gap	6.2

Note: Only adults 20 years of age and older were included in this analysis. The regression upon which these results are based contained 33 control variables for demographic and other individual characteristics. See Data and Methods, p. 51 for a fuller description of the variables and the regression model.

Source: Calculated by authors using data from the 1992 National Adult Literacy Survey.

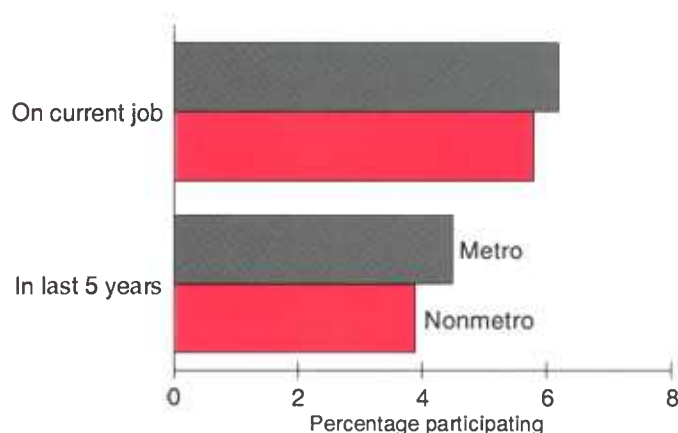
We estimated regression models of individual employment status and earnings, which included NALS literacy scores, along with an extensive list of human capital and other control variables widely used by social scientists to predict labor market outcomes. Table 6 reports regression-corrected estimates of the impact of a 100-point increase in a literacy score on weekly and annual measures of both employment and earnings. A 100-point rise in a NALS score corresponds to a two-level increase, for example, from level 2 ("low") to level 4 ("high"). Controlling for other determinants of labor market status reduces the magnitude of the association between literacy and employment outcomes by about half, but the remaining association is highly statistically significant and of an economically important magnitude, particularly for wages. Everything else—including education—equal, a worker with level 4 prose literacy skills tends to earn \$120 a week (\$6,067 a year) more than a worker with level 2 prose literacy. This finding supports the hypothesis that good literacy skills are amply rewarded in the labor market.

Even though the labor market payoff to literacy is high, the nonmetro gap in average literacy skills only accounts for a small share of the nonmetro gap in earnings, because nonmetro literacy levels are only a little lower than metro, while nonmetro earnings are substantially lower than metro. For example, our regression results imply that only approximately \$9 of the \$128 gap in average weekly earnings in 1992 can be attributed to the 7.3-point gap in average prose literacy for employed adults. (The 7.3 point prose gap for employed adults is a little higher than the 6.2-point gap for all adults.)

Figure 2

Share of the workforce participating in basic skills programs

Fewer nonmetro than metro workers participate in basic skills training



Source: Calculated by the authors using data from the January 1991 Current Population Survey for training on the current job and data from the 1992 National Adult Literacy Survey for training within the last 5 years.

Data and Methods

The 1992 National Adult Literacy Survey was a collaborative project of the U.S. Department of Education and the Educational Testing Service. Each of the approximately 25,000 adults interviewed was administered three tests designed to measure prose, document, and quantitative literacy by simulating tasks likely to be encountered in actual life. By measuring document literacy—which includes using tables and graphs—and quantitative literacy, the NALS test expands traditional conceptions of literacy to encompass the skills recently named “numeracy.”

To capture the continuous progression in respondents’ information processing skills and strategies, their performances on the exams were summarized by scaled scores, ranging from 0 to 500. Scores are grouped into five levels, ranging from level 1, representing very low proficiencies (0 to 225), to level 5, representing very high proficiencies (376 to 500). For example, in document literacy, level 1 suggests an ability to locate an expiration date on a driver’s license but likely inability to enter background information correctly on an application for a Social Security card. Level 5 in document literacy indicates the ability to use a table depicting survey results about parental involvement in school to write a paragraph summarizing the extent to which parents and teachers agree. For a fuller discussion of the NALS survey design and literacy measures, see U.S. Department of Education report listed in For Further Reading, p. 52.

The NALS also included an extensive set of background questions that recorded detailed demographic, economic, and other information on each respondent. Of crucial importance, we are also able to distinguish levels of urbanization because we can identify the county of residence for each respondent. We used this background information to investigate the extent, causes, and implications of rural-urban differences in literacy.

In much of our analysis, we define rural individuals as those living in nonmetro counties and urban individuals as those living in metro counties. When feasible, we also used the Economic Research Service’s Rural-Urban Continuum Codes, which provide a more detailed categorization of urbanization (see the report by Butler and Beale in For Further Reading, p. 52). The four subcategories of metro counties are: central counties of metro areas of 1 million population or more (“central city”); fringe counties of metro areas of 1 million population or more (“suburb”); counties in metro areas of 250,000 to 1 million population (“medium”); and counties in metro areas of fewer than 250,000 population (“small”). Due to insufficient sample sizes, we grouped the six non-metro continuum codes into three subcategories: urban population of 20,000 or more, adjacent to a metro area (“urban, adjacent”); urban population of 20,000 or more, not adjacent to a metro area (“urban, nonadjacent”); and all other counties (“less urban or totally rural”).

Regression Models of Characteristics Affecting Literacy

Multivariate regression techniques allow us to investigate the factors affecting literacy in rural and urban areas more fully than simple tabulations. First, we regressed individual literacy scores on either a dummy variable for metro county or five dummy variables for the most urban county types from our modified rural-urban continuum (all except “less urban or totally rural”). The resulting coefficients measure the extent to which mean literacy is higher in more urban counties than in the most rural counties, in other words, the corresponding rural literacy gap. Second, we reestimated these models adding 33 independent variables measuring age, gender, marital status, education, parents’ education, race, ethnicity, whether a native-born American or a native speaker of English, and region. The regression coefficient for an urbanization variable now represents the rural literacy gap after standardizing the rural and more urban populations with respect to the characteristics measured by the 33 additional independent variables. The regression coefficient corresponding to one of these additional independent variables estimates the impact of that characteristic on literacy, holding all other characteristics and urbanization fixed. Finally, we used these coefficients to simulate the contribution of rural/urban differences in the prevalence of these characteristics to the rural literacy gap. The product of the metro-nonmetro difference in the mean value of a population characteristic with the corresponding coefficient is the regression model’s estimate of how that difference in population composition either widens or narrows the rural gap in average literacy.

Regression Models of Employment Status and Earnings

We used similar regression techniques to investigate the effect of literacy on employment status and earnings. We regressed individual employment status or earnings on a literacy score plus 24 control variables for labor market experience, gender, marital status, education, race, ethnicity, whether a native-born American or a native speaker of English, and region. The models estimated for the total United States also included a control variable for metro residence. The regression coefficient of the literacy variable estimates the impact of literacy on the dependent variable, for example weekly earnings, holding the other 24 characteristics fixed. This should provide a good estimate of the labor market premium to increasing literacy, because the additional control variables capture a wide range of factors shown by previous research to influence an individual’s employment and earnings.

The labor market rewards for literacy are substantially lower in nonmetro labor markets than in metro labor markets. For example, a 100-point increase in prose literacy is associated with a \$133 increase in weekly earnings for metro workers, but only a \$66 increase for nonmetro workers. Similarly, the probability of employment rises less strongly with literacy for nonmetro workers. Both of these patterns suggest that the demand for workers with good literacy skills is considerably lower in nonmetro than in metro labor markets. Relatively low labor market rewards for literacy, in turn, probably tend to depress rural literacy because individuals have less incentive to develop these skills, while those who have high literacy gravitate to urban jobs.

Job skill requirements from the Dictionary of Occupations Titles (DOT) indicate that the skill levels of jobs held by rural workers at a given literacy level tend to be substantially lower than the skill levels of jobs held by corresponding urban workers. Over-qualification, where the skills of the worker appear to exceed the skills of the job, also is more common in rural areas. Despite their relative scarcity, highly skilled rural workers have a more difficult time than their urban counterparts in finding jobs that make full use of their skills.

Conclusion

On the supply side, there is a modest gap between the literacy of the rural and urban adult workforces as a whole, which is largely attributable to older workers who grew up at a time when rural education lagged urban. The rural-urban literacy gap is much smaller for young workers, suggesting that, over time, the gap in average literacy

skills will be erased, though the gap at the high end of the literacy distribution may remain. The very low rate of participation of adult workers in basic skills programs is a cause for concern, because it is precisely such programs that have the potential to reach the individuals with the greatest literacy deficits.

The more general literacy problem for rural workers lies on the demand side. There are still relatively few high-skill, high-wage jobs available to reward rural workers for the skills they have today and those they are likely to acquire. Thus, generating an adequate supply of these jobs is as much a concern for rural policymakers as is increasing literacy. Without jobs requiring more literate workers, efforts to improve literacy and numeracy may still leave rural areas with less literate workers as the more literate seek urban jobs commensurate with their skills.

For Further Reading. . .

M. A. Butler and C. L. Beale, *Rural-Urban Continuum Codes for Metro and Nonmetro Counties*, 1993, USDA-ERS-RED, Washington, DC, Sept. 1994.

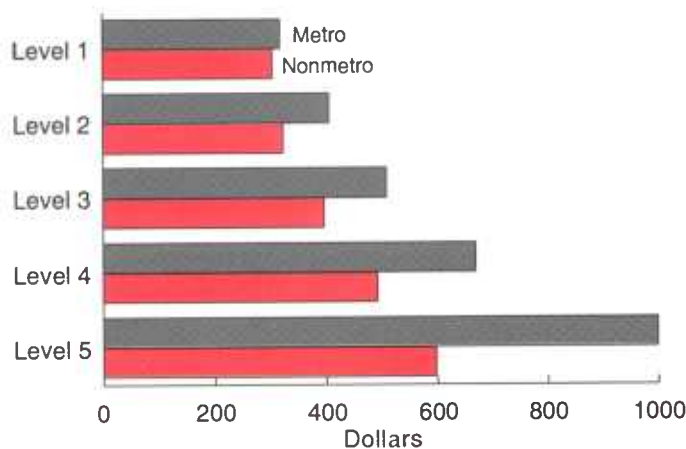
U.S. Department of Education, National Center for Education Statistics, *Adult Literacy in America*, Sept. 1993.

U.S. Department of Labor, Secretary's Commission on Achieving Necessary Skills, *Learning a Living: A Blueprint for High Performance*, April 1992.

Figure 3

Average weekly earnings by prose literacy levels, 1992

The gap between nonmetro and metro workers' earnings increases as the literacy level increases, suggesting lower demand for advanced literacy skills by rural employers



Source: Calculated by authors using data from the National Adult Literacy Survey.