Alternatives for Literacy Assessment

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Abstract

This paper was presented at the International Literacy Year Colloquium in October 1990 in Washington, D.C. It proposes that the statistical figures concerning literacy rates, often presented as development indicators for a country, are not as valid as the assertions indicate. The lack of consistency in the statistics from year to year indicates their lack of reliability. Three alternatives are suggested to the current practice. The paper shows the value of the third alternative, direct literacy assessment. Some thoughts on how to conduct this type of assessment are shared. Some recent national and international developments indicate that direct assessment may be a growing trend.

1. Introduction

Literacy statistics, ostensibly indicating "the proportion of a country's adult population who can read and write," have been gathered from censuses and reported in UNESCO and other collections of "development indicators" for decades. A country's literacy statistic has been interpreted as an indicator of its societal development and available human resources, and has been used to compare human resource development trends and levels across countries. At both national and international levels, the literacy statistic has been used as an indicator of regional and gender equity in the distribution of resources, as an explanatory variable in models of social and economic development, and as an output indicator of the quality and effectiveness of school systems. And yet, existing national literacy statistics are acknowledged to be of dubious accuracy and comparability.

Improving our literacy information base is important for development efforts. First, the positive relationship often found between "education" and a number of development outcomes is in need of more detailed information and analysis. To what extent is this relationship due to the socialization experience education provides? To what degree is it due specifically to the reading and writing skills imparted by the school? Do numeracy skills or other knowledge acquired at school have particular roles to play in the relationship? With information on literacy and other skills available in greater detail, analysis can better identify particular skills and education factors that appear to contribute most to desired development outcomes.[*]

Accurate, reliable, and meaningful literacy statistics are also essential to successful literacy programs, as they can be used to better identify and target communities and population groups in need, such as women; to target skill areas in need of development; and to evaluate the results of programs. Sound literacy statistics are critical to the planning of effective development programs and the judicious use of literacy materials in health and family planning, agricultural extension, and small business development activities.

2. Problems with Current Statistics

Most countries' existing national statistics on literacy contain severe problems regarding definition, measurement, and interpretation. They tend to be based on self-report or even third-person report census information on literacy ability and educational level. They typically represent literacy as a dichotomous quality, a thing possessed or not, despite the great range of skills and definitions that have been offered as constituting "literacy." At their worst, national literacy statistics are meaningless and may be dangerously misleading for policy makers and planners who depend on them for the design of programs and policies.

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Census-based literacy statistics commonly contain the following implicit assumptions. One assumption is that those who have attended school for a given number of years are literate, and that they have experienced no attrition of skills in the years since leaving school. A second, corollary assumption is that those who have not been to school are illiterate. Census-based statistics also assume that household heads are capable of judging the literacy capabilities of other household members, even if they themselves are nonliterate.

National literacy statistics are often compared across countries in discussions and analyses of the relative human resources countries can draw on, despite the fact that the statistics may be derived from noncomparable operational definitions. Some countries, for example, report the proportion of persons ten years of age and older who are "literate," while most report the proportion of those fifteen years of age and older, resulting in noncomparable populations. And because the quality and intensity of schooling have been demonstrated to differ greatly across countries, as well as within, the cross-national comparison of literacy statistics that are based on "years of schooling" is clearly misleading.

While admitting their shortcomings, many policy makers and researchers have been compelled to use the available literacy statistics in decision making and comparative analyses, presumably, "because they are there." But until our means of information collection on literacy improve, we must face the fact that making do with what we have will result in programs, policy decisions, and comparative analyses that may be seriously misguided.

The tenuousness of literacy statistics may best be demonstrated by an example. The 1988 World Development Report presented illiteracy statistics for Morocco of 80 percent for females and 40 percent for males (World Bank, 1988). Just two years later, the same source reported a female illiteracy rate of 78 percent, showing a reasonable improvement, and a total illiteracy rate of 67 percent (World Bank, 1990). Estimated from these figures, the male illiteracy rate would have to fall between 56 percent and 58 percent—a decline of sixteen to eighteen percentage points from the 1988 figure! Do these statistics represent an accurate reflection of the literacy status of Moroccan men and women? This question forms the starting point of the present discussion.

3. Alternatives

The dubious quality and usefulness of existing national-level literacy statistics cry out for a solution. To relieve or attenuate the problems cited above, a number of alternatives may be considered.

A first alternative is simply to stop collecting and reporting "literacy data" at the national level. This position would effectively stop policy makers and analysts from drawing facile, and very likely misleading, comparisons and conclusions about a population's literacy abilities. It would not preclude, however, conducting small scale literacy assessments for specific purposes. The World Bank's World Development Report appears to be revealing a certain ambivalence toward reporting literacy statistics; from year to year the statistics are reported in different formats and in some years not at all.

A second alternative is to stop collecting literacy data at the national level and use only formal education statistics as the indicator of human resource development. By this alternative, essentially a variation on the first, national data on literacy would effectively be replaced by what is, in many cases, their implicit proxy—years of schooling. Unfortunately, as discussed above, education statistics themselves have problems of noncomparability and should not, technically, permit the inference that a given number of years of schooling imparts a given amount of lasting skill.

A third alternative is to replace reported literacy figures based on census data and conventional proxies with figures based on assessment through sample survey. The sample survey approach to national statistics estimation has been widely used in the fields of population and health, consumption, and employment and has the advantage of permitting data collection of a depth and breadth the cost of which would be prohibitive, if attempted in full population census efforts. In the case of literacy assessment, the sample survey approach could provide an opportunity for individual, direct assessment across an array of specific skills. Examples of such an approach

include the National Assessment of Educational Progress (NAEP), conducted in the United States and adapted for use in Canada, Australia, and elsewhere; the National Household Survey Capability Program's literacy assessment module, developed for use in several countries through the U.N. Statistical Office, and the Living Standards Measurement Survey literacy module, employed by the World Bank and the Ministry of Planning in Morocco.

4. Advantages of Direct Literacy Assessment

Rather than not collecting or reporting literacy information at all, the third alternative—direct literacy assessment through sample surveys—can provide a rich data base important for development efforts in many sectors.

Improved accuracy of information. Properly designed, direct assessment can be used to estimate the accuracy of existing self-report or third-person report measures of literacy. It can also be used to identify or estimate the attrition of skills through longitudinal assessment of the same individuals and through cross-sectional analysis of skills of individuals with a range of educational experiences and years since leaving formal education.

Greater breadth of information. Properly designed, direct assessment can provide more information on skill domains and levels than is typically gathered, moving us beyond a stark dichotomy. It can also be used to collect information about individuals' skills in areas "on the periphery" of conventionally measured reading and writing skills. This includes skills such as oral and written math abilities, knowledge of sound health behaviors, and familiarity with forms, documents, and other literacy artifacts encountered in everyday life.

Data for program evaluation. When assessed at all, the success or failure of a literacy or educational program is, in practice, more often determined on the basis of fiscal performance and sustainability, rather than on an evaluation of the learning process or outcomes of such a program. Direct literacy assessment, on the other hand, by providing measures of actual skill acquisition, can be used to evaluate a program's qualitative effectiveness through controlled comparisons of skill levels of program participants and nonparticipants.

Data for program design. Individualized assessment also provides an opportunity to collect information on individuals' perceived needs for literacy and constraints to participation in literacy programs, as well as to design appropriate programs for effective targeting of groups. With such information, research may be undertaken on the gap between literacy planners' often low expectations of demand for literacy programs and the actual numbers of persons who enroll. This should lead to the identification of ways to improve demand estimations for planning.

5. Development of a Direct Assessment of Literacy Through Household Survey

In this section, it is not my purpose to describe the process in detail. A number of good descriptions and manuals exist (United Nations, 1989; Wagner, 1990; Kirsch and Jungeblut, 1986). Rather, I confine myself to highlighting five critical steps in the development of a direct literacy assessment.

An early step in the design and development of a direct literacy assessment instrument is the selection of the range of skills and levels to be assessed. Different types of skills include the ability to read and demonstrate comprehension of connected prose text; the ability to interpret more formulaic documents such as tables, signs, forms, and advertisements; and production or writing, as well as reading, of these sorts of text. In multilingual settings, which languages to be assessed must also be considered. Depending on the setting and purposes of the assessment, it may also be desirable to assess related skills and knowledge such as numeracy, knowledge of public services, knowledge of sound health practices, "radio" literacy—that is, knowledge of radio language—and even picture literacy, such as George McBean's work with UNICEF in Nepal. The assessment may

also include questions on individuals' perceived needs for literacy and on constraints to literacy learning they have encountered.

Once the desired content is determined, instruments must be designed and tested and the results analyzed for accuracy, reliability, and validity. Where appropriate, some evaluation of the comparability of instruments across settings should also be made. Cross-national comparability will depend on equivalency of assessments and a certain coordination of efforts across countries, through programs such as the United Nations' National Household Survey Capability Program.

As in all data collection efforts, a realistic assessment of the time, training, and resources needed for field implementation is necessary. Unlike census taking, direct assessment requires individual assessment of multiple household members. Because of this, more time per household will be required than is typical for census and survey approaches, which permit one household member to "answer for" other members. Direct performance assessment also requires special training of the interviewer, as it may involve subjective judgments on his part. It demands special sensitivity regarding the ease and comfort of the respondent so as to maximize his or her performance, and in some settings, may call for the provision of same-gender evaluators, especially for female respondents.

Scoring procedures and form of presentation of assessment results must also be carefully selected. Item response theory (IRT) procedures, for example, can be used with graduated tests and incomplete sampling designs to establish scoring scales that adjust item scores on the basis of item difficulty, the individual's estimated proficiency, and chance score, if applicable. Such procedures were employed in the NAEP study (Kirsch, 1990; Kirsch and Jungeblut, 1986). Discrete skill domains may also be used to report assessment results. The scoring and presentation of results in these ways permit finer analysis and interpretation than is possible using the conventional, monolithic dichotomy.

The sustainability of a program of sample survey with direct literacy assessment beyond the initial development phase (often supported by external technical assistance and financing) should also be carefully considered. A "one-shot" assessment has some utility, but it can be used to monitor change and to discern actual progress only if it is repeated at regular intervals over time. Developing local commitment to and capacity for direct assessment within existing institutions is likely to be the surest way to establish a routinely updated base of information on literacy. Identifying the appropriate institution, whether within the government or a private organization, is often the first hurdle.

Ministries of Planning and Statistical Offices, while typically the collecting agencies for population and national sample information, may not be interested in direct literacy assessment initially. They will often need convincing regarding the value of improved literacy statistics for their own work.

Ministries of Education might appear to be a more logical institutional choice, since they typically collect education statistics regularly and may conduct national examinations and other assessments. Such assessments, however, are likely to emphasize school-type skills and techniques, which may not be appropriate for the assessment of adult literacy abilities. In most cases, considerable retraining may be required to develop literacy assessment capacity in a Ministry of Education.

Ministries of Social Affairs, often the seat of adult literacy programs and, therefore, potentially most interested in sound national literacy statistics, typically do not have the experience or resources to mount large scale population-based sample survey efforts. Developing sustainable capacities for national direct literacy assessment would need both extensive training and substantial resources.

In some countries, a nongovernmental organization (NGO) or group of organizations specializing in testing services, survey taking, or literacy services may be an appropriate site for the establishment of direct literacy assessment capabilities. NGO participation may also be considered in conjunction with Ministry oversight, with the NGO providing technical expertise or services outside the normal operating range of the Ministry.

6. Recent Encouraging Developments

Recently, growing interest and efforts, both nationally and internationally, point to an encouraging movement toward the use of direct assessment as a basis for literacy statistics. The National Assessment of Educational Progress has produced rich and important information on the reading, writing, language, and mathematical skills of a large national sample of in-school and out-of-school young adults in the United States. NAEP has also served as a template and catalyst for adaptations and similar efforts in other countries and with other populations, notably in Canada and Australia, and with a broader range of adults in the United States. Several countries and institutions in both Western and Eastern Europe have also begun to show interest in conducting literacy surveys along NAEP lines.

For developing country contexts, the United Nations' Statistical Office has published a manual for the development of literacy assessments, entitled *Measuring Literacy Through Household Surveys* (United Nations, 1989), as part of its National Household Survey Capability Program. The manual describes in detail the processes of construction and implementation of literacy assessments touched on here and provides general guidelines for analysis. UN funded literacy modules as part of National Household Survey efforts have been produced for Kenya, Zimbabwe, and elsewhere.

The Living Standards Measurement Surveys (LSMS), conducted in a wide range of countries with World Bank assistance, provide another logical vehicle for literacy assessment. In Morocco, analysis is currently underway on results of a literacy assessment developed and implemented as part of that country's LSMS efforts. Other countries in the process of LSMS planning are also considering the inclusion of literacy assessments in their own survey development plans.

Finally, possible hybrid solutions which combine the greater detail and accuracy of direct assessment with the typically lower cost of collecting conventional proxy data are currently being examined and discussed by a number of social scientists. Such efforts are likely to lead the way to optimally cost effective methods of literacy assessment in the near future.

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