8
Literacy

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Introduction

Literacy has been equated with freedom, economic development, and even civilization. Literacy comes with many different definitions, historical trends, and serious implications for individuals and societies all over the world. The study of literacy combines all social science disciplines, including psychology, linguistics, history, anthropology, sociology, and demography, but the field itself broadens beyond research to both policy and practice, from childhood through adulthood. Literacy, at its core, refers to the composite set of abilities needed to comprehend and produce written forms of language.

Within a cross-cultural developmental science perspective, literacy invokes a band of research that includes the intersection of both cognitive and social inputs to literacy development across the life span, along with contextual, cultural, and linguistic variations that shape literacy acquisition around the world. It would be convenient to be able to say that there is a consensus that ties together the various ways that social scientists view literacy, but such is not the case. Every subfield of literacy research has its own internal debates, and the disciplinary variants on literacy work assure that such debates, even over the meaning of literacy itself, will continue into the future. It needs to be kept in mind too that in industrialized countries, literacy acquisition begins and is completed largely in childhood and early adolescence, but that in poor and developing countries, literacy acquisition may take place in later adolescence and adulthood. The present analysis takes into account a breadth of research from early childhood through adolescence and into adulthood, while trying to give a sense of cross-cultural variation. This chapter begins with broad historical brushstrokes and then moves into several key domains of literacy work today, eventually focusing on policy and practice considerations for the future. As we shall see in later sections, the varieties of literacy used today, of which school-based literacy tends to be the most prominent, mirror the increased social complexity in rapidly changing societies.

Historical Perspectives on Literacy

The history of literacy has been the subject of a considerable number of scholarly studies in recent years (see Wagner, Venezky, and Street, 1999). Historical research indicates that literacy was often transmitted and practiced outside of what we now call "formal schooling." For example, as early as the sixteenth century, reading was widespread in Sweden on account of family and church efforts to teach Bible reading at home (Johansson, 1987). In nineteenth century Liberia, the Vai created an indigenous script and have used it ever since for economic and personal written communication (Scribner and Cole, 1981). Likewise, the Native American Cree of northern

Canada maintain the use of their syllabic script as a source of cultural identity (Bennett and Berry, 1987). And, of course, literacy was used in the Near East, India, and China more than 2,000 years ago largely as part of religious texts (Goody and Watt, 1963).

These illustrations outside of formal schooling represent only a few of the many cases of literacy development across time and geography. More importantly, such examples point to a new perspective in literacy research and current literacy efforts. Literacy is a *cultural* phenomenon, and it is practiced in a variety of settings and contexts. Literacy, for most children in today's world, is primarily taught in the classroom, but achievement levels are often determined as much by the out-of-school determinants (such as literacy of parents, availability of home reading) as by school factors, such as teacher training or textbook quality. Literacy skills as taught in schools all over the globe tell only part of the literacy story because literacy is practiced in far more varied ways outside of school contexts. It is essential to keep this fact in mind because literacy development depends on a sensitive understanding of how literacy and culture relate to one another (Wagner, 1991).

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The varieties of literacy in schooling in today's world have expanded greatly since the advent of modern public education. More languages are written each year, with scripts, dictionaries, and newspapers to support them.[1] More individuals have increasingly varied literacy skills, as requirements for using and producing written language have changed. For example, there has been a dramatic increase in the use of new information technologies, which has produced an array of requirements including typing, cutting and pasting, image-word multimedia, and texting and "acronyming" ("Be right back" as BRB) on cell phones (Wagner and Kozma, 2005). Simply put, the world can no longer be characterized as a place where the literate elites dominate the masses of unschooled illiterates, as was once the case. There are relatively few "naïve" illiterates (who know absolutely nothing about scripts or print), but there are many individuals with quite limited or restricted literacy skills, such that their own governments might list them as illiterate or functionally illiterate for census purposes. The varieties of literacy, of which school-based literacy tends to be the best understood, mirror the increased social complexity within rapidly changing societies (Resnick and Resnick, 1990).

Beyond academic research, major international agencies (like the World Bank and the United Nations Educational, Scientific and Cultural Organization [UNESCO]) have also been concerned about literacy from an economic perspective. To provide worldwide statistical comparisons, such agencies have relied almost entirely on data provided by their member countries. According to the most recent UNESCO statistics (Table 8.1), world illiteracy rates have dropped from 25% to less than 20% over the last two decades, apparently primarily because of increases in primary school enrollments. Yet these data also indicate that the actual number of persons labeled as "illiterate" (approximately one billion persons today) has remained relatively constant because of population growth. It was once assumed that increased efforts to achieve universal primary schooling would lead to near-zero adult illiteracy around the world. These optimistic views are no longer widely held for a variety of reasons, including continued increases in population growth in developing countries, declining quality of basic education where rapid expansion has taken place, upward changes in the skill standards for literacy, both in developing and industrialized countries, and improved measurement of literacy through surveys that show that previous estimates of literacy (based on school grade levels achieved) often overestimated actual basic learning competencies (Wagner, 2000).

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[1] This evolution comes despite "language death," where some languages in very small ethno-linguistic populations cease to be able to keep a critical mass of native speakers given the advent of schooling and literacy in more dominant languages (Crystal, 2000).

Table 8.1. Global and regional trends in Adult Literacy Rates, 1950 to 2000–2004

	Adult literacy rates (%)						Increase in literacy rates (%)		
	1950	**1960**	**1970**	**1980**	**1990**	**2000–2004**	**1970 to 1980**	**1980 to 1990**	**1990 to 2000–2004**
World	55.7	60.7	63.4	69.7	75.4	81.9	9.9	8.2	8.5
Developing countries	–	–	47.7	58.0	67.0	76.4	21.6	15.6	14.0
Developed and transition countries	–	–	94.5	96.4	98.6	99.0	2.0	1.8	0.5
Selected regions									
Sub-Saharan Africa	–	–	27.8	37.8	49.9	59.7	36.0	32.1	19.6
Arab States	–	18.9	28.8	39.2	50.0	62.7	36.1	27.7	25.3
East Asia and the Pacific	–	–	57.5	70.3	81.8	91.4	22.3	16.4	11.7
South and West Asia	-	–	31.6	39.3	47.5	58.6	24.4	20.8	23.5
latin America and the Caribbean	-	–	73.7	80.0	85.0	89.7	8.5	6.3	5.5

Sources: Same as Table 7.1.
From: United Nations Educational, Scientific and Cultural Organization (2006).

Literacy Development: Four Key Themes

Literacy development can be seen from a number of perspectives. Following is a review that focuses on four intersecting themes. First, we consider the various ways that literacy can be operationally defined. Second, the acquisition of literacy in formal and informal settings is considered, across human development in ontogenetic time. Third, we review some of the major sociocultural parameters that significantly support or constrain literacy development. Finally, research on the consequences of becoming literate is reviewed. Taken together, these four themes begin to provide a coherent picture of literacy development.

Defining Literacy: A Moving Target

A person is functionally literate when he has acquired the knowledge and skills in reading and writing which enable him to engage effectively in all those activities in which literacy is normally assumed in his culture or group. (Gray, 1956, p. 19)

…[L]iteracy is a characteristic acquired by individuals in varying degrees from just above none to an indeterminate upper level. Some individuals are more literate or less literate than others, but it is really not possible to speak of literate and illiterate persons as two distinct categories. (UNESCO, 1957, p. 18)

It appears that a functional competence [in literacy] has been defined so that it is merely sufficient to bring its possessor within the reach of bureaucratic modes of communication and authority. (Levine, 1982, p. 261)

> Literacy [is] not simply…a set of isolated skills associated with reading and writing, but more importantly…the application of those skills for specific purposes in specific contexts…. There is no single measure or specific point on a single scale that separates the "literate" from the "illiterate." …[B]ecoming fully literate in a technologically advanced soiceity is a lifelong pursuit, as is sustaining good health. …[Like] the fhysical health of every individual, there is no single action or step, that if taken, will ensure that every individual will become fully literate. (Kirsch and Jungeblut, 1986, p. 67)

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As noted earlier, most specialists today would agree that the term "literacy" connotes reading and writing (although some would add basic math and even computer skills).[2] Where major debates continue, it is often around such issues as what specific abilities count most as literacy and what "levels" can and should be defined for measurement, or as "standards," in a given society. Thus, UNESCO, an organization that has devoted much energy and resources to promoting literacy, opted for the rather general notion of "functional literacy," as defined earlier by Gray (1956). If the phrase functional literacy has appeal because of its implied adaptability to a given cultural context, it is also inadequately defined for measurement purposes. For example, it is unclear in an industrialized nation like Great Britain what level of literacy should be required of all citizens; does a coal miner have functionally different needs than a barrister? Similarly, in a developing country, does an illiterate woman need to learn to read and write to take her prescribed medicine correctly, or is it more functional (and cost effective) to have her school-going son read the instructions to her? The general use of the term functionality, based on norms of a given society, fails precisely because adequate norms are so difficult to establish.

What might be an adequate definition of literacy? Is it, as implied earlier by Levine (1982), a competency that permits the individual to be controlled (and propagandized) by government media and bureaucracies? Based on the earlier 1957 UNESCO statement, the work of Kirsch and colleagues in literacy measurement (Kirsch and Jungeblut, 1986; Kirsch, Jungeblut, Jenkins, and Kolstad, 1993), and efforts by UNESCO (2006) in its *Global Monitoring Report on Literacy*, literacy competency may be defined as a continuum of abilities that range from zero to some undefined upper limit, whose desired level may vary across societies. Because dozens of orthographies for hundreds of languages with innumerable cultural variations exist, it would seem ill-advised to select a universal operational definition of competence required, either at minimum or maximum, to "succeed" in a given society. In some countries today, the use of newspaper reading skills as a functional baseline may seriously underestimate literacy if the emphasis is on comprehension of text (especially if the text is in a national language not well understood by the individual). Such tests may overestimate literacy competency if the individual, as is often the case in national censuses, is asked simply either whether she or he can read and write in a quick self-assessment procedure or (less often) to read aloud a short text, with little or no attempt to measure comprehension.

At least part of the controversy in defining literacy lies in how literacy has been studied in the first place. Anthropologists provide in-depth ethnographic accounts of single communities, while trying to understand how literacy is woven into the fabric of community cultural life (e.g., Street, 1999). In this work, the focus is on the social meanings of literacy, to the individual and to the society, and relatively little attempt is made at quantifying levels of particular literacy abilities. This approach has led to an epistemological shift toward thinking of literacy as a plural, as *literacies*. Anthropologists typically use qualitative description, whereas psychologists and educators tend to use psychometrics and inferential statistics to substantiate claims beyond a

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[2] This author was once informed that in Zimbabwe, a citizen was considered "literate" if he or she could recite a few lines of the President Robert Mugabe's most annual speech to the nation.

numerical level of uncertainty; this approach is often favored by those who need to test for skill levels (e.g., UNESCO, 2006). As might be expected, even within the quantitative subfield of literacy assessment, there are various views as to which methodology is suitable for which purpose (see, for example, Wagner, 2003, on "quick" assessments for use in program development in developing countries).

Literacy Acquisition

> Six stages (of reading) are hypothesized…, from a kind of pseudo-reading to reading that is highly creative…. Individuals vary in their progression, yet most who are educated in typical schools tend to progress largely through the stages within (certain) age limits…. Among adult illiterates, the typical time periods for each of the stages is uncertain. Hypothetically they, too, tend to follow largely the same course of development, although like others with special needs, they have more success with some stages (of reading) than with others. (Chall, 1983, p. 9)

> Children growing up in literate societies, surrounded by the printed word, begin to read and write long before they start school. They become aware of many of the uses of written language, they develop a sense of the written forms, and they begin to make sense of print and to experiment with communication through writing. Until recently, this growth into literacy has not been expected or appreciated, even by professional educationists. (Goodman, 1985, p. 57)

> …[T]he mistrust which blacks [in the United States] have toward the school and the conflict between them and these schools reduce the degree to which black parents and their children are able to accept the goals, standards, and instructional approaches of the schools as legitimate, and hence, their internalization or convictions of the need to cooperate with the school and follow their rules of behavior for achievement [of literacy] as conceived by and required by the schools. (Ogbu, 1980, p. 26)

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> …[L]iteracy development is multiply determined; successful reading and writing in the later elementary and secondary grades is not possible without high levels of language proficiency, access to large stores of knowledge, and control over the local cultural norms of communication. (Snow and Kang, 2006)

The study of literacy acquisition remains heavily biased in favor of research undertaken in the industrialized world. Much of this research might better be termed the acquisition reading and writing skills, with an emphasis on the relation between cognitive skills, such as perception and memory, and reading skills, such as decoding and comprehension (Kamil, Mosenthal, Pearson, and Barr, 2000). Most of this work has been carried out with school-aged children, rather than with adolescents or adults. Even today, there is a relative dearth of research on literacy acquisition undertaken in non-Western parts of the world and in the huge variety of the world's languages and scripts, and much that has been done has focused more on adult acquisition of literacy than on children learning to read (perhaps a result of the significant emphasis by international organizations to promote adult literacy in the developing world).

Nonetheless, work has increased on children's literacy acquisition in diverse languages, some in minority groups in countries like the United States, where children from these groups often have poor school achievement, and among researchers who are interested in cross-cultural variation in language and literacy development. The subfield of comparative reading acquisition was begun by Downing (1973), who surveyed the acquisition of reading skills across a wide variety of languages and orthographies. Mastery of the spoken language is a typical prerequisite for fluent reading comprehension in a language, although many exceptions exist. For example,

AQ4   some Islamic scholars can read and interpret the Qur'an, even though they cannot speak classical Arabic, the language in which the Qur'an is written (Wagner, 1993); and, of course, many individuals can read and write languages that they may not speak fluently. Chall (1983) identified universal stages through which individuals seems to progress in achieving fluency and becoming a comprehending reader, ranging from word decoding to understanding the intent of the person who wrote the passage. If some would take issue with Chall's precise stages, most specialists agree that there is a variety of cognitive and linguistic skills that need to be acquired as a basis for literacy acquisition in a given written language and that a good proportion of these skills must be mastered before fluent reading can be accomplished (Snow and Kang, 2006).

The issue of reading skills acquisition has been the subject of a "great debate" (Chall, 1967) in the United States (in particular), with specific abilities (such as the "phonics" approach to decoding of text) thought by some to be at the center of cognitive growth in reading. Those associated with a more linguistic-cultural context approach have claimed, by contrast, that literacy is more like language in the sense that specific abilities do not need to be learned; rather, an individual must be able to interact with a "literate environment" (a term that is itself often ill-defined; Goodman, 1985). This latter approach stems in part from the popular perception of a high correlation between literate parents and children in many societies but, as such, does not imply direct causation. It is likely that literate parents provide a variety of additional opportunities for their children to learn reading abilities, including book reading practice at home, but they also afford their children better schools, more textbooks, and the attitudes and values that help children learn in school. Over the past decade, research reviews have sought to evaluate the empirical evidence in this debate and came down squarely in favor of a more phonics-based, skill-based approach to literacy acquisition as an optimal pathway for children's reading in alphabetic scripts (National Reading Panel, 2000; Snow, Burns, and Griffin, 1998). Additional support for this perspective has now come from a variety of other languages, such as Spanish (Dickenson, McCabe, Clark-Chiarelli, and Wolf, 2004), Turkish (Oney and Durgunoglu, 1997), and Arabic (Abu-Rabia and Siegel, 2002); for a general theoretical review, see Ziegler and Goswami (2005).

AQ5   However, this empirical conclusion does not undermine the importance of cultural variables; it only posits that, when these can be controlled (within, say, a homogeneous sample of learners), phonics skill learning proves to be a crucial part of school-based instruction.

In what ways is reading acquisition similar or different between children and adults? Strikingly little can be said in response to this question. In both developing and industrialized countries, there is a real need for this type of research, which would provide useful insights concerning the relation between cognitive and knowledge-based skills on the one hand and social factors and reading achievement on the other. Because adults have a much more complete repertoire of cognitive and linguistic skills and general knowledge than most beginning readers of primary school age, it ought to be possible to tease apart the range of cognitive and social prerequisites to learning to read. Little research has been undertaken along these lines (but see, for example, Durgunoglu and Oney, 2002; Greenberg, Ehri, and Perin, 2002). Such comparisons have been accompanied by an important increase in research on adult literacy in industrialized countries (e.g., Organisation for Economic Co-operation and Development [OECD] and Statistics Canada, 2000; Tuijnman, Kirsch, and Wagner, 1997; Wagner and Venezky, 1999).

Sociocultural Context, Literacy, and Literacies

> …[T]here is no real sense in which a level of education in the active population of a country can be said to be technically 'required' to permit the achieved level of economic growth of that country. That sort of argument grossly exaggerates the contribution of manipulative and cognitive skills in the performance of economic functions, and ignores the fact that such skills are largely acquired by on-the-job training. (Blaug, 1985, p. 25)

…[T]he single most compelling fact about literacy is that it is a *social* achievement; individuals in societies without writing systems do not become literate. (Scribner, 1984, p. 7)

Literacy is not just a set of uniform 'technical skills' to be imparted to those lacking them – the 'autonomous' model – but rather there are multiple literacies in communities and literacy practices are socially embedded (p. 2). The alternative, ideological model… offers a more culturally sensitive view of literacy practices as they vary from one context to another; it posits instead that literacy is a social practice…. It is about knowledge: the ways in which people address reading and writing are themselves rooted in conceptions of knowledge, identity and being. (Street, 2001, p. 7)

Focusing on the plurality of literacies means recognizing the diversity of reading and writing practices and the different genres, styles and types of texts associated with various activities, domains or social identities…. In multilingual contexts, different languages, language varieties and scripts add other dimensions to the diversity and complexity of literacies. (Martin-Jones and Jones, 2000, p. 5)

Since World War II, perhaps the most compelling argument for human resources development is that literacy and schooling normatively lead to economic growth in countries that are able to make a sufficient investment. Anderson and Bowman (1965), for example, went so far as to estimate that an 80% national adult literacy rate would be necessary for rapid economic development, but at least a 40% literacy rate would be required for a minimal amount of economic development. Naturally, this type of claim makes use of aggregated data across many countries of the world, based on a significant correlation between gross national product and literacy rates. Claiming causality using such correlations is hazardous of course. One would probably be equally correct in claiming that literacy rates, like infant mortality rates, are prime indicators of the degree of economic development in most countries. If social and economic progress is being attained, then one usually finds that literacy rates climb and infant mortality rates decline. Blaug (1985) came to the conclusion (cited earlier) that neither years of schooling nor specific literacy rates have a direct effect on economic growth. Yet, today there are few national policy makers who do not act as if literacy levels are one of the most important drivers of social and economic progress. One of the endemic problems in this the sociocultural domain is whether to continue to view literacy as the "possession" or trait of the individual or whether literacy is more socially constructed as a relative phenomenon within a social group.

Within the domain of social context and in the1980s, specialists took a fresh look at national literacy programs and at the singular concept of literacy. Some were psychologists with a cross-cultural perspective. For example, Scribner (1984; Scribner and Cole, 1981), working in Liberia, suggested that researchers should resist making broad statements about literacy and its consequences (economic or cognitive) because there exists a variety of social literacy practices that are crucial in understanding both the inputs made into promoting literacy and the outcomes of literacy programs and activities (Wagner et al., 1999).

Among the first to adopt the multiple *literacies* perspective and formalize it through ethnographic research was Street (1984). Street developed a bimodal distinction for conceptualizing literacy: one that considered literacy as a tool (or set of skills) for producing and understanding written text, which he called the *autonomous* model of literacy, and one that considered literacy in its fullest cultural context, which he called the *ideological* model of literacy. Based on his initial field work in prerevolutionary Iran in the 1970s, Street found that the official Farsi literacy used in the Iranian government campaign and in formal schooling conformed to the autonomous model, but the Arabic language literacy learned in Islamic schools and that was used for a variety of everyday tasks, including small business enterprises, conformed to the ideological

model. Because Arabic and Farsi literacy differed from one another, Street claimed that they should be called different literacies, as distinct from, but related to, the social practice perspective of Scribner and Cole.

The term *literacies* has been adopted by many who were frustrated by the singular notion of literacy as a unique skill or set of cognitive skills that is or is not possessed by individuals to varying degrees. From the perspective of anthropologists such as Street, literacy in the singular is something appropriated by cognitivists, school pedagogues, and reading specialists whose principal goal, it is said, seems to be the purveyance of efficient formal schooling on the one hand and formalized adult literacy programs on the other. Because many individuals whose literacy falls below par in terms of statistical standards are from ethno-linguistic minority groups, anthropologists and ethnographers often attribute this "deficit" description to a lack of cultural sensitivity in those pursuing the autonomous model. Thus, Street claimed that the meanings and practices of literacy are necessarily contested; particular versions and interpretations of literacy are "always rooted in a particular world-view and a desire for that view to dominate and to marginalize others" (Street, 2001, p. 8). The literacies movement not only challenges the cognitive tradition, but also even more directly challenges those doing literacy work in developing countries where issues of dominance, hierarchy, and power are more central to policy discourse.

Individual Consequences

What does illiteracy mean to the illiterate? …[T]he map of illiteracy closely coincides with the maps of poverty, malnutrition, ill-health, infant mortality, etc. Hence, in the typical case, the illiterate is not only unable to read and write, but he—or more usually she—is poor, hungry, (and) vulnerable to illness…. In these circumstances, does his or her literacy really matter? Would he or she even list illiteracy among life's major problems? (Gillette and Ryan, 1985, p. 21)

An individual needs a minimum level of mastery in order to "pass" as literate in public and keep intact his or her self-respect; as schools and literacy programs become more effective in equipping their students with these skills, the effective threshold of acceptability will be raised accordingly. There is, quite simply, no finite level of attainment, even within a specific society, which is capable of eliminating the disadvantages of illiteracy or semi-literacy by permitting the less literate to compete on equal terms for employment and enjoy parity of status with the more literate. (Levine, 1982, p. 260)

…[A]dopting different criteria [for literacy] for different regions and communities would ensure the perpetuation of educational inequalities and the differential access to life opportunities with which these standards are associated. (Scribner, 1984, p. 10)

[L]iteracy proficiency…has a substantial effect on earnings, a net effect that is independent of the effects of education. (OECD and Statistics Canada, 2000, p. 84)

AQ6 These quotations are perspectives typical of the two opposing sides of the arguments concerning the firm necessity of literacy for every individual, but each perspective leaves out an essential ingredient. Gillette and Ryan (1985) admit that other problems might have a higher salience and importance than literacy to the world's poor but nonetheless claim that literacy can somehow be part of the remedy, without specifying what the real linkage is between literacy and other types of benefits, such as health. In contrast, Levine (1982) treats literacy like intelligence quotient (IQ) scores in that, as the latter is a normed average, it is impossible to raise the national IQ because it will always stay at 100, even if many individuals obtain more correct answers in a given year. In the same way, by improving national literacy rates, one is simply putting the

norm at a higher level, which, on the whole, maintains most individuals at their same relative level compared to others. Levine's argument, of course, denies the real possibility that literacy ability might have some concrete utility beyond one's social status relative to his or her neighbor or classmate. However, international surveys convincingly demonstrate that individual literacy levels are strong predictors of income in adults (OECD and Statistics Canada, 1995, 2000).

Does either perspective truly represent the real problems of individuals living in situations where a change from low to high literacy will make a concrete difference in life? The only way to reach a satisfactory answer is to undertake more ethnographic and case studies that explore the actual lives of individuals. Looking at the "average literacy rate" and comparing this with other estimated health indicators or estimating "employability" is akin to flying over a given area at 20,000 feet in the air—it can give a high-level idea but lacks detail on the ground. Work in rural low-literate Morocco has demonstrated that people with higher literacy tend to be better off economically, but also that an increasing number of parents believe that more education and more literacy will not necessarily lead to greater wealth because more and more school graduates have not found work (Wagner, 1993). A common perception is that both some literacy and some level of education are needed by some individuals in every family (or extended family) to meet the tasks required by government bureaucracy in Morocco, but not everyone needs to be literate to accomplish such tasks (Wagner, 1993). Similar mixed views and beliefs about the advantages of literacy and disadvantages of illiteracy have been found in studies in the United States (e.g., Wagner and Venezky, 1999) and in the domain of technological literacy (Wagner and Kozma, 2005).

In sum, the four intersecting themes described in the previous sections provide a sense of complexity of literacy. The first two themes (on definition and acquisition) have been the most common battleground for academics because they are both linked to how policy makers will need to make decisions. The second two themes (on sociocultural parameters and individual consequences) essentially call into question the first two themes by asking whether literacy can be a singular concept (or not) and by asking the degree to which it really matters to become literate.

Cross-Cultural Research and Developmental Theory in Literacy

If one were to engage in a substantive Internet-based search of publications in the field of reading today, the outcome would surely show millions of articles, books, and chapters. The vast majority of these would be in only a handful of languages, largely contained within a dozen major languages of the world (perhaps mirroring, to some real extent, the distribution of languages on the Web itself). This statistic would leave the remaining 2,000 to 3,000 languages most commonly used in the world with near-zero research as to how literacy is acquired or utilized. As with other developmental phenomena, such as language, motor skills, and personality, one might (indeed should) ask the legitimate question of how much of a global sample of humanity is necessary before we can reach generalizable conclusions about a particular domain of behavior. For decades (even centuries), developmentalists have not bothered very much about whether their conclusions might apply to peoples in faraway places or even ethnic groups much closer to home. Hence, we have seen that the end of the twentieth century has brought a rise in the number of cross-cultural and comparative studies across developmental science.

Still, it is not clear how much this cross-cultural research has directly affected child and human development theory, broadly speaking, or literacy development, more specifically. No doubt, there has been impact, yet there is also little doubt that the main tendency in reading research has been to focus on how to improve children's reading achievement in advanced industrialized countries. One area of literacy development research that is growing rapidly reflects changes in such societies, namely in countries subject to important ethno-linguistic population

changes as a result of immigration. Many of these cross-linguistic population contexts are now well known and even well studied, such as the United States and Spanish–English communities, Holland (Dutch–Arabic), France (North African Arabic–French), and England (Urdu–English). Both ethnographic and cognitive research has shown that ethno-linguistic minority groups in these situations fare less well than the dominant (majority) groups in reading achievement in the school years, although some intervention programs hold promise of improvements (for a review, see Snow and Kang, 2006). The available evidence suggests that cultural dimensions of the majority culture must be mastered if minority children are to catch up in school. Because this is a matter of politics and social dynamics, it is clear that even the best reading program will have difficulty in helping minority ethnic-linguistic group children reach parity in reading achievement in a second language.

Future Directions in Research and Policy in Literacy

The year 2015 is the target by which the United Nations' Millennium Development Goals should be reached, including that of universal basic education and literacy.[3] What are the prospects for attaining this goal, or even coming close? To have a realistic policy goal of increasing literacy, we need to have a clearer understanding of it as a sociocultural phenomenon. Those who would promote short-term media-oriented campaigns with only modest adaptations to the local contexts for literacy have two major problems to contend with: first, campaigns are typically top-down government-sponsored approaches where citizens may have at least an ambivalent relation with central authorities; second, the notion of short-term programming, although convenient for ideologues, runs counter to the notion that adaptation and flexibility in programming will be critical for success and fails to recognize that literacy is a cultural phenomenon that cannot be imposed or maintained through short-term interventions.

As noted earlier, much of the research on literacy in Western-type school settings has been largely irrelevant to those interested in the promotion of literacy around the world. One prime reason for this paradox (as in other areas of Third World research inquiry) is that researchers have been motivated more by theoretically derived questions than by questions based on policy needs (Wagner, 1986). The picture began to change at the turn of the twenty-first century, as publications on literacy have proliferated. Policy makers should not simply decide that everyone must be literate by such and such date, but rather (it is hoped), they should be informed by the best research not only on normative learning in Western schools, but also on issues such as first and second language/literacy learning, the role of literacy in traditional societies, and other areas such as those discussed earlier.

European and American studies have made the case for teaching early reading using the phonics (decoding) approach to acquisition, along with an important dose of reading support by parents and teachers in and out of school. There is little in this Western approach to reading achievement to suggest that non-Western countries should treat this developmental approach as fundamentally lacking in substance. However, languages and scripts vary around the world. We can be less sure of our experimental interventions or hierarchical regressions when the context changes dramatically. For example, in nonalphabetic scripts, such as Chinese, a strictly constrained decoding approach will be of little value (Taylor, 1999). When letters have multiple forms (such as in Telugu and Kanada in South India), then emphases on earlier letter discrimination become important (Daswani, 2001). Finally, although the use of new technologies in education is expanding rapidly, we have only a few examples of its use for literacy programs in the developing world (e.g., in India; see Wagner and Daswani, 2006).

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[3] The actual target is to reduce by 50% the rates of illiteracy in each nation worldwide. Effectively, this means that each country will need to invest sufficiently to bring illiteracy to near-zero (United Nations, 2002).

In the policy arena, it is crucial to understand the pros and cons of language of instruction (in schools) as a determinant of literacy achievement. Often the decision on national or official language(s) is based on such factors as major or dominant linguistic groups, colonial or postcolonial history, and the importance of a given language to the interests of economic development. Official languages are typically those most commonly used in primary and secondary school, although there may be differences between languages used in beginning schooling and those used later on. Furthermore, there may be important differences between language policy in primary schooling and that of nonformal education and adult education. For example, in Senegal, French is used exclusively in primary school, but local Senegalese languages are used in adult literacy programs nationwide. The use of mother tongue instruction in primary and adult education remains a topic of continuing debate (Alidou et al., 2006; Engle, 1975; Wagner, 1992).

There is usually general agreement that all official language(s) ought to be assessed in a national literacy survey (e.g., English in the United States; English and French in Canada; and German, French, Italian, and Romanch in Switzerland), but there may be disagreement over the assessment of literacy in nonofficial or semiofficial languages, where these have a recognized and functional orthography (e.g., Athabaskan in Canada, or Hungarian in Romania). In many countries, there exists a multitude of local languages that have varying relations and status with respect to the official language(s). How these languages and literacies may be included in a national literacy survey can be a matter of serious debate. For example, in predominantly Muslim countries in sub-Saharan Africa (e.g., Senegal or Ghana), the official language of literacy might be French or English, but Arabic, which is taught in Islamic schools and used by a sizable population for certain everyday and religious tasks, is usually excluded from official literacy censuses. Similarly, literacy in Chinese, Spanish, Cherokee, and other written languages has generally been ignored in literacy assessments in the United States.[4]

Conclusion

Cross-cultural developmental science constitutes a general lifespan approach to the development of human behavior. Literacy development has begun down the same road and certainly has a stronger empirical base now compared with a decade or two ago. National and international agencies have evidenced greater interest in literacy as well. Yet, with population growth taken into account, little real progress can be claimed in reducing the illiteracy rates of most countries, especially in the developing world, and despite the 2015 United Nations' Millennium Development Goals. This observation should come as no surprise because the problems of illiteracy, low literacy, literacy, and multiple literacies are embedded in the sociocultural fabric of each society. With population migration continuing along with globalization of other parts of our societies, a multiply variegated world of ethnolinguistic complexity seems to be our societal destiny. As a consequence, policy decisions about language and literacy will become ever more relevant and more complicated, even as our knowledge base about literacy continues to increase. To keep pace with changes in societies today, as well as with a global economy that requires ever more skills in a competitive market place, we will no doubt have to keep the study and promotion of literacy on the research front burner for years to come.

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[4] In addition to English, the recent National Assessment of Adult Literacy survey (United States Department of Education, 2007) systematically included Spanish language literacy assessment for the first time; other languages, however, were excluded.

Acknowledgments

References

Abu-Rabia, S., and Siegel, L. S. (2002). Reading, syntactic, orthographic, and working memory skills of bilingual Arabic-English speaking Canadian children. *Journal of Psycholinguistic Research, 31*, 661–678.

Alidou, H., Boly, A., Brock-Utne, B., Diallo, Y. S., Heugh, K., and Wolff, H. E. (2006). *Optimising learning and education in Africa: The language factor*. Paris: ADEA, GTZ, Commonwealth Secretariat.

Anderson, C. A., and Bowman, M. J. (1965). *Education and economic development.* London: Frank Cass.

Bennett, J. A. H., and Berry, J. (1999). The future of Cree syllabic literacy in Northern Canada. In Wagner, D. A. (Ed.), *The future of literacy in a changing world* (revised ed., pp. 271–290). Cresskill, NJ: Hampton.

Blaug, M. (1985). Where are we now in the economics of education? *Economics of Education Review, 4*, 17–28.

Chall, J. S. (1967). *Learning to read: The great debate*. New York: McGraw-Hill.

Chall, J. S. (1983). *Stages of reading development*. New York: McGraw-Hill.

Crystal, D. (2000). *Language death*. London: Cambridge University Press.

Daswani, C. J. (2001). *Language education in multilingual India*. Delhi: United Nations Educational, Scientific and Cultural Organization.

Dickenson, D. K., McCabe, A., Clark-Chiarelli, N., and Wolf, A. (2004). Cross-language transfer of phonological awareness in low-income Spanish and English bilingual preschool children. *Applied Psycholinguistics, 25*, 323–347.

Downing, J. (1973). *Comparative reading*. New York: Macmillan.

Durgunoglu, A. Y., and Oney, B. (2002). Phonological awareness in literacy acquisition: it's not only for children. *Scientific Studies of Reading, 6*, 245–266.

Engle, P. L. (1975). Language medium in early school years for minority language groups. *Review of Educational Research, 45*, 283–325.

Gillette, A., and Ryan, J. (1985). Eleven issues in literacy for the 1990's. *Assignment Children, 63/64*, 19–44.

Goodman, K. S. (1985). Growing into literacy. *Prospects, 15*, 57–65.

Goody, J., and Watt, I. (1963). The consequences of literacy. *Comparative Studies in Society and History, 5*, 304–345.

Gray, W. S. (1956). *The teaching of reading and writing*. Paris: United Nations Educational, Scientific and Cultural Organization.

Greenberg, D., Ehri, L. C., and Perin, D. (2002). Do adult literacy students make the same word-reading and spelling errors as children matched for word-reading age? *Scientific Studies of Reading, 6*, 221–243.

Johansson, E. (1987). Literacy campaigns in Sweden. In R. F. Arnove and H. J. Graff (Eds.), *National literacy campaigns*. New York: Plenum.

Kamil, M. L., Mosenthal, P. B., Pearson, P. D., and Barr, R. (Eds.). (2000). *Handbook of reading research: Volume III*. Mahwah, NJ: Erlbaum.

Kirsch, I., and Jungeblut, A. (1986). *Literacy: Profiles of America's young adults. Final report of the National Assessment of Educational Progress*. Princeton, NJ: ETS.

Kirsch, I. S., Jungeblut, A., Jenkins, L., and Kolstad, A. (1993). *Adult literacy in America: A first look at the results of the National Adult Literacy Survey*. Washington, DC: National Center for Educational Statistics, United States Department of Education.

Levine, K. (1982). Functional literacy: Fond illusions and false economies. *Harvard Educational Review, 52*, 249–266.

Martin-Jones, M., and Jones, K. (2000). *Multilingual literacies: Reading and writing in different worlds*. Philadelphia: John Benjamins.

National Reading Panel. (2000). *Teaching children to read: An evidence based assessment of the scientific research literature on reading and its implications for reading instruction*. Publication No. 00-4769. Washington, DC: National Institutes of Health.

Ogbu, J. U. (1980). Literacy in subordinate cultures: The case of black Americans. Paper presented at the Literacy Conference of the Library of Congress, Washington, DC.

Oney, B., and Durgunoglu, A. Y. (1997). Beginning to read in Turkish: A phonologically transparent orthography. *Applied Psycholinguistics, 18*, 1–15.

Organisation for Economic Co-operation and Development and Statistics Canada. (1995). *Literacy, economy and society*. Paris: Organisation for Economic Co-operation and Development.

Organisation for Economic Co-operation and Development and Statistics Canada. (2000). *Literacy in the information age*. Paris: Organisation for Economic Co-operation and Development.

Resnick, D. P., and Resnick, L. B. (1990). Varieties of literacy. In A. E. Barnes and P. N. Stearns

(Eds.), *Social history and issues in human consciousness: Some interdisciplinary connections* (pp. 171–196). New York: New York University Press.

Scribner, S. (1984). Literacy in three metaphors. *American Journal of Education, 93*, 6–21.

Scribner, S., and Cole, M. (1981). *The psychology of literacy*. Cambridge, MA: Harvard University Press.

Snow, C. E., Burns, S., and Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.

Snow, C. E., and Kang, J. Y. (2006). Becoming bilingual, biliterate, and bicultural. In K. A. Renninger, I. E. Sigel, W. Damon, and R. M. Lerner (Eds.), *Handbook of child psychology: Volume 4. Child psychology in practice* (6th ed., pp. 75–102). New York: Wiley.

Street, B. V. (1984). *Literacy in theory and practice*. London: Cambridge University Press.

Street, B. V. (1999). The meanings of literacy. In D. A. Wagner, R. L. Venezky, and B. V. Street (Eds.), *Literacy: An international handbook*. Boulder, CO: Westview Press.

Street, B. V. (2001). *Literacy and development: Ethnographic perspectives*. London: Routledge.

Taylor, I. (1999). Literacy in China, Korea and Japan. In D. A. Wagner, R. L. Venezky, and B. V. Street (Eds.), *Literacy: An international handbook* (pp. 423–429). Boulder, CO: Westview Press.

Tuijnman, A., Kirsch, I., and Wagner, D. A. (Eds.). (1997). *Adult basic skills: Innovations in measurement and policy analysis*. Cresskill, NJ: Hampton Press.

United Nations. (2002). United Nations Literacy Decade: Education for All. International Plan of Action: Implementation of General Assembly Resolution 56/116. New York: United Nations.

United Nations Educational, Scientific and Cultural Organization. (1957). *World illiteracy at mid-century*. Paris: United Nations Educational, Scientific and Cultural Organization.   AQ8

United Nations Educational, Scientific and Cultural Organization. (1976). *The experimental world literacy program: A critical assessment*. Paris: United Nations Educational, Scientific and Cultural Organization/ United Nations Development Programme.

United Nations Educational, Scientific and Cultural Organization. (2006). *Global monitoring report on literacy*. Paris: United Nations Educational, Scientific and Cultural Organization.

United States Department of Education. (2007). *National assessment of adult literacy: Literacy in everyday life*. NCES480. Washington, DC: Institute of Educational Sciences.

Wagner, D. A. (1986). Child development research and the Third World: A future of mutual interest? *American Psychologist, 41*, 298–301.

Wagner, D. A. (1992). *Literacy: Developing the future. UNESCO Yearbook of Education, 1992, Volume 43*. Paris: United Nations Educational, Scientific and Cultural Organization.

Wagner, D. A. (1993). *Literacy, culture and development: Becoming literate in Morocco*. New York: Cambridge University Press.

Wagner, D. A. (2000). Literacy and adult education. Global thematic review prepared for the United Nations World Education Forum, Dakar, Senegal. Paris: United Nations Educational, Scientific and Cultural Organization.

Wagner, D. A. (2003). Smaller, quicker, cheaper: Alternative strategies for literacy assessment in the UN Literacy Decade. *International Journal of Educational Research, 39*, 293–309.

Wagner, D. A., and Daswani, C. J. (2006). Bridges to the Future Initiative in India: Research update. Technical Report, International Literacy Institute, University of Pennsylvania, Philadelphia, PA.

Wagner, D. A., and Kozma, R. (2005). *New technologies for literacy and adult education: A global perspective*. Paris: United Nations Educational, Scientific and Cultural Organization.

Wagner, D. A., and Venezky, R. L. (1999). Adult literacy: The next generation. *Educational Researcher, 28*, 21–29.

Wagner, D. A., Venezky, R. L., and Street, B. V. (Eds.). (1999). *Literacy: An international handbook*. Boulder, CO: Westview Press.

Ziegler, J., and Goswami, U. (2005). Reading acquisition, developmental dyslexia, and skilled reading across languages: A psycholinguistic grain size theory. *Psychological Bulletin, 131*, 3–29.