

Formal and Nonformal Education and Empowered Behavior:

A Review of the Research Literature

**Prepared for the Support for Analysis and Research in
Africa (SARA) Project
Funded by USAID/AFR/SD**

April 1997

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Purposes of the Literature Review

Since 1990 international agencies have invested heavily in girls' schooling as a means of checking population growth in developing countries. But they may be overlooking another, equally viable way of affecting women's decisions to bear and raise healthy children. The purpose of this review is to document the argument that women's participation in nonformal (out-of-school) education and other associations has the same effect as formal schooling on demographic change (fertility and child health and survival). We will briefly summarize this argument before surveying the literature.

The proportion of girls in school is clearly linked to the birth rate and the health and survival rates of children. The late 1970s saw a culmination of demographic research indicating an inverse relationship between schooling, especially that of girls, and fertility. Additional research indicated that educated women have healthier children and fewer of their children.

The link between schooling and birth rates is not mysterious. Demographic change results from changes in women's reproductive and child-raising behaviors. During the 1980s and 1990s, researchers have aimed at fine-tuning our understanding of what these behaviors are and the circumstances under which they occur. They find that the behaviors affecting fertility rates, such as marrying later and practicing birth control, vary from one country to another, depending on the country's level of economic development, social mores, and kinship structure.

How does education affect these behaviors? A generally accepted theory is that these two variables are mediated by an "autonomy" or "empowerment" variable rather than by particular skills or factual knowledge. Women can be "empowered" not only by going to school but also by participating in nonformal education programs and local associations.

Framework for Analysis

The assertion that programs other than school can be empowering is not yet widely accepted because the research on the effects of nonformal education uses different methods and is presented less convincingly than the research on the effects of schooling. We attempt to explore the logical link between the evidence that sending more girls to school results in demographic change through their empowerment and the evidence that nonformal education also empowers girls and women and, thus, also leads to fewer births and healthier families.

Educating girls appears to influence fertility rates more than educating boys. As a consequence, recent research has focused on girls and women. While we do not exclude research on the education of boys and men, we are especially interested in research on girls and women.

Framework for Analysis

The theoretical framework for our analysis, then, is the following:

- ◆ Education, both formal and nonformal, leads to the empowerment of girls and women.
- ◆ This empowerment results in new personal, social, and economic behaviors such as child-bearing and child-raising behaviors.
- ◆ These behaviors, in turn, affect demographic change (fertility and child survival rates).

Figure 1

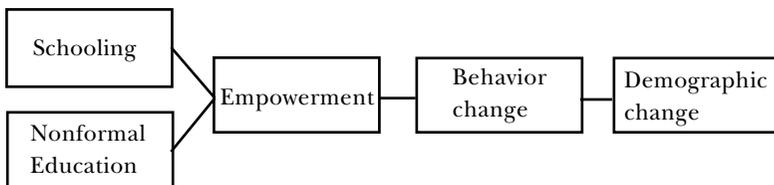


Figure 1 shows the schematic links between these schools of research.

Schooling and Demographic Change

We look first at research on the links between formal schooling and demographic change. This section is brief, because other, more comprehensive literature reviews are readily accessible. Next, we look at the mediating variable called “autonomy” or “empowerment.” Finally, we review the research on links between nonformal education and the behaviors that lead to demographic change, and we identify additional research needed to reinforce the argument for heavier investment in nonformal education and women’s associations.

Schooling and Demographic Change

In this section, we recapitulate the findings of studies on the relationship between schooling and child birth, health, and survival rates. We look at reviews of the research that establish the relationship among these variables and the pathways through which they are related.

Schooling’s Correlation With Demographic Change

In her landmark study on the correlation between schooling and fertility, Cochrane (1979) concluded that “the inverse relation between education and fertility is one of the most consistent and best documented in the literature.” Studies that Cochrane reviewed, as well as many that followed, showed that higher rates of schooling are more likely to relate to lower rates of fertility in the more developed countries and in urban areas, that the relationship weakens when controlling for age structure of the population and level of income, and that girls’ education is more likely to be inversely related to fertility than boys’ education. Education in countries with literacy rates above 40 percent is more likely to be inversely related than in less literate countries.

Cochrane looked at research that used aggregate data from national census or vital registration systems (births, deaths, education, occupation); methods include simple correlations between average education (enrollment rates, literacy rates, years of schooling) and fertility measures (birth rates). Some studies used multiple regression to control

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for level of income or development. Studies at the micro-level looked at literacy status, years of school attended/completed, and possession of certain levels of certification. Though these micro-level studies are generally based on sample surveys too small or too localized to provide cross-regional comparisons, they give credence to the aggregate studies by helping to rule out spurious effects of schooling on other variables.

Following Cochrane's study, other researchers (Cochrane, O'Hara, and Leslie 1980; Subbarao and Raney 1993; Schultz 1991; Schultz 1993) looked at new data on education and fertility, especially from the least-developed countries, where evidence was the most scarce and seemed to show the weakest link between education and fertility. Subsequent studies were able to draw on data from the World Fertility Surveys and the Demographic and Health Surveys to substantiate the general trends of Cochrane's findings (Kasarda, Billy, and West 1986; Lightbourne and Singh 1982, Ainsworth, Beegle, and Nyamete 1995).

Behaviors that Lead to Demographic Change

The relationship between the demographic variables of schooling and fertility implies changes in women's behavior as a result of schooling. What do educated women do differently that leads to lower fertility rates? LeVine noted in 1980 that little was known about the specific attitudes and behaviors of women affected by education. In the subsequent one and a half decades, we have learned much about these behaviors.

Behaviors related to fertility

Jejeebhoy (1996) has synthesized the empirical studies of fertility-related behaviors that change in relation to women's schooling: duration of breastfeeding, age at marriage, contraception practice, and child-raising behaviors. Overall, these studies show that women who stay in school longer are more likely to marry later. Women who have attended school are more likely to practice contraception and to prefer smaller families. Women who have been to school also tend to stop

Behaviors that Lead to Demographic Change

breastfeeding sooner and practice abstinence for shorter periods of time after childbirth, which accounts for the positive relationship between schooling and fertility in some parts of the world. Ultimately, impact of the desire for fewer children and practice of contraception outweighs this last relationship (Jejeebhoy 1996; Schultz 1991).

An important contribution of research subsequent to Cochrane's study is the evidence that the behaviors of women related to fertility vary from one society to another. Jejeebhoy's review emphasizes that reproductive behavior is strongly influenced by (1) the stage of economic development and (2) the kinship structure of the society.

The norms of patriarchy play an important role in conditioning the impact of education on changes in women's autonomy. In settings that are highly stratified by gender, women may have little autonomy until they have attained relatively high levels of education, whereas in more egalitarian settings, the thresholds are lower (Jejeebhoy, p. 36).

It takes fewer years of schooling to change the behavior of women who live in relatively developed or industrialized societies, and it takes fewer years to change the behavior of women who live in societies where they are less controlled by their fathers and other male family members. Where religious and cultural mores prohibit women from making decisions within the family, the link between schooling and behavior change is weaker (Caldwell and Caldwell 1993; Jejeebhoy 1996).

Behaviors of women that relate to fertility vary from place to place. For example, LeVine and his colleagues discovered that in one area of rural Mexico the usually hypothesized behaviors did not explain the relationship between a woman's schooling and the number of children she had (LeVine 1987). The pathways between education and fertility in that community "do not run through postponed marriage and improved job opportunities," as hypothesized elsewhere, but through the

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woman's marriage to a man who is "more likely to share her lower fertility goals."

Behaviors related to child sickness and survival

While Cochrane's and related studies were concerned primarily with fertility and with child mortality and illness as a function of fertility (when more of her children survive, a woman may want fewer births), other researchers have studied the effects of a woman's education on her children's health and survival. They also have found a strong inverse relationship between a mother's schooling and the incidence of death among her children (Schultz 1991; Browne and Barrett 1991; Caldwell and Caldwell 1993; Jejeebhoy 1996).

How do educated women behave in relation to the health and survival of their children? They adopt a range of health-improving behaviors: they use preventive health measures, are quicker to respond to health problems, follow instructions, and report back to health workers on developments. Women with more years of schooling are more careful about hygiene, recognize the need for rest, and feed their children better, particularly girls. They also use public health services and other resources more effectively (Schultz 1991; Caldwell and Caldwell 1993).

Mothers who have been to school take better care of not only their children's health but also their children's education. Some research shows that more educated mothers send their children to school (Schultz 1991; Caldwell and Caldwell 1993). LeVine and his colleagues (1980) found evidence from empirical studies that educated mothers interact with their children in ways different from those of uneducated mothers. In a study of girls in a rural area of Mexico, they found that mothers with more schooling were more verbally responsive to infant vocalizations and increasingly attentive to signs that their toddlers were initiating conversation (LeVine 1987). In contrast, Joshi (1994) concluded from his research in Nepal that maternal schooling was not significantly associated with more verbal responsiveness to children.

Autonomy and Empowerment

Demographers' early research had nothing to say about the content or quality of education provided at school. The simplest explanation for why educated women have fewer children and take better care of those they have would be that school teaches them the knowledge and skills they need to practice family planning and child care. But familiarity with primary schools in developing countries immediately throws this simple explanation into question. Most primary schools did not teach reproductive or family health in the 1970s. How then does education influence these behaviors?

Autonomy: The Pathway Between Schooling and Behavior Change

In 1996 Jejeebhoy compiled the empirical evidence to confirm the notion that women's behavior changes are mediated by their acquisition of "autonomy." While women's autonomy is conditioned largely by gender stratification and patriarchal authority in the society in which they live, education can also increase a woman's autonomy.

Jejeebhoy suggested five separate but interdependent aspects of autonomy affected by education:

- ◆ Knowledge autonomy: Educated women have a wider world view, a greater sense of alternative lifestyles, and a greater questioning of authority.
- ◆ Decision-making autonomy: Education strengthens women's say in family decisions and decisions concerning their own lives and well-being. This means that an educated woman is more confident of her ability to make a decision or voice an opinion, and more likely to insist on participating in family discussions.

Schooling's Effect on Autonomy

- ◆ Physical autonomy: Educated women have more contact with the outside world. Women who have been to school have more freedom of movement and more self-confidence in using available services.
- ◆ Emotional autonomy: Educated women shift their loyalties from extended kin to the conjugal family. There is a more egalitarian relationship between spouses, greater bonding or intimacy between spouses and between parents and children, and more self-worth and less self-denial among these women.
- ◆ Economic and social autonomy and self-reliance: Education increases a woman's self-reliance in economic matters and the self-reliance that is basic for social acceptance and status; education enhances women's economic independence, and improves access to and control over economic resources as well as women's ability to rely on themselves, rather than on their children or husbands, to attain social status or acceptance.

What happens in school to make girls more autonomous?

Schooling's Effect on Autonomy

Various explanations have been proffered regarding what happens in school to affect children's behavior. One is that schools intentionally and unintentionally teach so-called Western values and behavior. In his review of the literature on children's experience in school, Caldwell (1980) found that school textbooks transmit Western values, as do teachers, pupils, and "even parents" through the "hidden syllabus." Particularly in boarding schools, children are taught Western manners and roles, differentiated by sex. Schools "destroy the corporate identity of the family" by taking children away from home for many hours a day, encouraging differentiation and solitude, and weakening the authority of

Schooling's Effect on Autonomy

the old over the young. Educated children see themselves differently from uneducated children in relation to other family members. Schooling may have stronger effects when a critical mass of individuals in the community become educated, thus weakening the forces to maintain the values that hold allegiance to the family as the basic unit of the society.

Caldwell's theories are not unlike those of sociological research during the period beginning in 1960 and well into the 1980s on modernity. Drawing on the work of McClelland and others, Inkeles (1974) devised a concept of modernity, which was largely attitudinal and used a constructed "modernity scale." Inkeles's large research project in six countries looked only at men and had a scope far broader than education. Yet, schooling turned out to be strongly associated with modernity.

Inkeles said that changes in the attitudes of men who had attended school lie in the "nature of the school as a social organization." The school teaches values, attitudes, and ways of behaving, in addition to knowledge or skills. It features mechanisms or processes that influence attitudes and behavior, such as reward and punishment, modeling, and the ability to generalize learning skills. These mechanisms lead the student into a "modern" way of thinking, believing, and behaving.

The student acquires new skills and knowledge during primary-school age, when otherwise he would be in a learning lull between the rapid development of early childhood and that of adolescence. In school, he learns to read, write, and calculate, to plan and follow a schedule. He is listened to by the teacher, thus taken seriously by adults outside his family. Unless the school is hopelessly ineffective, he experiences distributive justice and is rewarded for expressing new ideas (Inkeles, 1974).

Dreeben (1968) argued that when children enter school, they come into a social setting very different from that of the family—a setting that

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prepares them to participate in the life of institutions, such as the workplace and civil society, beyond the family. The “structural arrangements and behavior patterns of teachers provide pupils with certain experiences largely unavailable in other social settings, and these experiences, by virtue of their peculiar characteristics, represent conditions conducive to the acquisition of norms.” Schooling socializes children by teaching them the norms of independence, achievement, universalism, and specificity (they learn to see themselves as members of different groups or categories of people and to recognize their uniqueness).

The essence of the theories of Caldwell, Inkeles, and Dreeben is that schools provide students with a structured, institutional environment in which they learn to understand the world. This learning comes from the organizational characteristics of the school—in contrast to those of the family—as well as from the curriculum and textbooks. To the extent that the school exhibits values and mechanisms different from those of the child’s family, the child is forced to make these values and mechanisms a part of his or her own construct of reality. Because boys have many opportunities for exposure to the world beyond the family that girls do not have, the effect on girls of schooling may be even more profound than it is on boys (Jejeebhoy 1996).

We find the ultimate explanation of how schools affect girls’ behavior is in learning theory. Social learning theories inform our inquiry better than more cognitive theories of the mind. Social learning theories (Bandura 1986) postulate that a person who adopts a new behavior must not only become *aware* of the behavior but also gain a sense of *self-efficacy*—the belief that he or she can perform the behavior effectively and thus achieve the desired result. Individuals acquire this sense by observing others with whom they can identify, perform the behavior and by interacting with others in a way that rewards them for adopting the behavior. Children in school acquire a wide range of new behaviors in this way from teachers and peers, including reading and calculating, planning their time, and following school procedures.

Empowerment: Similar to Autonomy

Though social learning theories help explain the link between schooling and behavior change, schools are not the only setting in which individuals observe new behaviors and acquire the sense of self-efficacy needed to adopt them. Social learning theories hold open the door to other experiences that offer new awareness, new knowledge, and an increased sense of self-efficacy. In the nonformal education literature, this kind of experience is often called empowerment.

Empowerment: Similar to Autonomy

Jejeebhoy said autonomy is a critical link between schooling and demographic change. Her definition of *autonomy* resembles the concept of *empowerment* in the nonformal education literature.

The nonformal education literature on empowerment is often traced to the 1970s and the work of Paolo Freire with peasants in Brazil. Freire was concerned with empowering groups of men to take charge of their political and social environment, not with individual autonomy, in the sense that Jejeebhoy describes it. Yet the essence of his teaching was literacy, which is an individual achievement. Groups are not empowered until their individual members gain the sense of efficacy and understanding to act together.

In the wake of Freire's influence, Kindervatter (1979), in a major study of nonformal education as an empowering process, defined empowerment as "gaining an understanding of and control over social, economic, and/or political forces in order to improve [one's] standing in society." This definition resembles Jejeebhoy's definition of autonomy as "the ability to obtain information and use it as the basis for making decisions about one's private concerns and those of one's intimates." Each definition includes a better understanding of and more control over one's situation.

More recently, researchers have generated empirical definitions of empowerment for the purpose of measuring this phenomenon. In Nepal,

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researchers for the U.S. Agency for International Development (USAID) surveyed rural women to better understand how these women conceived of empowerment and to what extent they felt empowered.

Women responded that empowerment means:

- ◆ being literate, having knowledge, understanding issues, and sharing knowledge with others;
- ◆ being able to stand on your own legs, supporting yourself, having a job, making choices;
- ◆ being able to help others, teach others, motivate others, help the village;
- ◆ not tolerating domination, especially men's domination;
- ◆ being able to move around freely;
- ◆ feeling confident, being articulate, feeling able to speak in public and with government officials; and
- ◆ being a leader, getting along with others, maintaining good relationships within the village (USAID/Nepal 1996).

Researchers on women's participation in credit bank and rural development programs in Bangladesh also developed empirically indicators of empowerment (Hashemi, Schuler, and Riley 1996). Their definition includes:

- ◆ mobility (permission and desire to do business and socialize outside of the home);
- ◆ economic security (home ownership, possession of savings and use of cash);
- ◆ ability to make purchases;

Empowerment: Similar to Autonomy

- ◆ involvement with husband in major decisions;
- ◆ relative freedom from domination by the family;
- ◆ political and legal awareness; and
- ◆ participation in public protests and political campaigning.

Although stated in different terms, for different purposes, and from different perspectives, these two sets of empowerment characteristics show considerable overlap. Moreover—and this point is crucial to our argument—they jibe with Jejeebhoy’s defined characteristics of autonomy. The following table illustrates the consistency among the three definitions of empowerment/autonomy.

Jejeebhoy	USAID/Nepal	Hashemi et al.
Knowledge autonomy	Being literate, having knowledge, understanding issues	Political and legal awareness
Decision-making autonomy	Making choices, feeling confident, Being articulate	Involvement in decisions
Physical autonomy		Mobility
Emotional autonomy	Not tolerating domination	Freedom from family domination
Economic and social autonomy and self-reliance	Supporting yourself Having a job	Economic security Ability to make purchases
	Able to help others Being a leader, getting along with others	Participation in political activities

Nonformal Education and Other Adult Associations

Both USAID/Nepal and Hashemi et al. include characteristics of empowerment related to action outside the family (helping others, being a leader, participating in political activities). Jejeebhoy's framework does not include these because her interest was limited to behaviors related to family planning.

This phenomenon of "empowerment" or "autonomy" is the common mediating variable between (1) education—formal and nonformal—and (2) demographic change. In the next section we look at the research on the relationship between nonformal education and variables linked with demographic change.

Nonformal Education and Other Adult Associations

In this section we look at a broad range of programs for adults, some of which are primarily aimed at teaching adults new skills, particularly literacy. Others have social or economic objectives, such as improving the health and nutrition or economic status of disadvantaged people or introducing methods of ecological farming. Literacy and other skills training may be an integral part of the latter but not the primary objective. Even though many of the programs discussed below were not designed primarily to "educate" adults, we will refer to the entire range as nonformal education because of their presumed educational or training effects.

Though the studies of correlations between schooling and demographic change have not been matched by studies linking *nonformal* education and demographic change, demographers have recognized that interventions other than schooling might influence fertility and child mortality (Cochrane 1979; Haddad, Carnoy, Rinaldi, and Regel 1990; Browne and Barrett 1991; Jejeebhoy 1996). Jejeebhoy (1996) notes of her study of women's education and reproductive behavior:

Characteristics of the Research on Nonformal Education

The possible influence of adult education, as compared with formal schooling of children, on women's lives and on their fertility needs to be explored.

Jejeebhoy points out that research on nonformal education cannot be compared to that on schooling, as the data on nonformal education and its links to demographic change are "sparse...and hardly convincing."

What is the evidence, and is it convincing?

Characteristics of the Research on Nonformal Education

The research literature on nonformal education and association membership is dramatically different from that on schooling and demographic change. Researchers in nonformal education use different research frameworks. They make different assumptions, ask different questions, and use different methods.

Cochrane (1979) and subsequent demographic researchers conducted correlation studies using large-scale databases. Most research on nonformal education does not use correlation methods because national and other large databases do not include the relevant variables (see Comings, Smith, and Shrestha 1996). Censuses, vital registration systems, and worldwide surveys do not ask about any education and training other than schooling. While some surveys use an indicator of "literacy," this is generally defined as four years of schooling rather than a demonstration of an ability to read and write.

Nonformal education studies are done at the micro-level, within or across communities. Most are qualitative and descriptive. Not many have used rigorous methods, experimental or qualitative, to document behavior changes other than the acquisition of technical skills. Bown (1990) notes that many studies are "quite vague in their assessment of outcomes, either qualitative or quantitative."

Characteristics of the Research on Nonformal Education

Some good research is not readily accessible (Bown 1990; King and Hill 1991). One cannot easily locate a comprehensive review of the research literature, as the research covers many fields of study. Even the research on literacy, which is the predominant focus in nonformal education research, is spread among publications for practitioners, for pedagogues, and for those with community development, political and/or economic interests. Much of it is not published. Other research literature on nonformal education is found in journals on health, nutrition, population, agriculture, rural studies, urban studies, and environmental studies.

But viewed through this literature, the effects on behavior of nonformal education are evident. Comings et al. (1996), writing about adult literacy programs, argue that

the hypothesis that adult education results in the same positive impact as formal schooling is sometimes supported and never contradicted by the empirical studies that exist. Unfortunately, almost all of the research on benefits from education looks only at formal schooling and, therefore, some people have been led to believe that adult education has no positive impact. There is ample evidence supporting the direct relationship between basic education [i.e., for adults] and positive health indicators, lower fertility rates, higher agricultural productivity, higher family income, and other social and economic indicators.

Through observations of behavioral changes and self-reports by participants, many reports demonstrate that nonformal education and other organized interventions have noteworthy results. This kind of evidence is as valid as evidence of correlation among variables in large databases, and some of it is not unlike small-scale studies used by the demographers to substantiate findings from analyses of aggregate data (see Caldwell 1980 and Jejeebhoy 1996 for examples).

Research on Nonformal Education's Effects on Empowerment and Behavior

Our interest is not in the effects of nonformal education programs on participants' acquisition of literacy or other technical skills. We are interested in their effects on the empowerment of adults as the pathway to behavioral changes.

We will look first at quantitative studies, then at qualitative studies, and, finally, at some raw data from women's own testimonies.

Quantitative studies

We found three quantitative studies that link nonformal education and membership in associations with empowerment and behavior change.

Clark and Gakuru (1982) set up an experiment to test the hypothesis that a program specifically designed to increase women's feelings of competence, develop their skills through collaborative activity, and relate appropriate health, nutrition, and other development concerns would yield positive results. They organized 130 women into six groups, each in a rural village in Kenya, and assisted them in defining and implementing a community-service project. To evaluate the effects of membership in these groups, they conducted interviews with the women before and after the groups formed. They also interviewed women who had not participated. They developed three indices to measure correlations among (1) confidence (willingness to take risks, confront problems, raise questions, and discuss difficult issues), (2) levels of involvement and leadership, and (3) lifestyle.¹

The researchers found significant changes in some (but not all) health- and nutrition-related behaviors and acquisition of independent sources of income; even more significant changes in their participation in community activities; and highly significant changes in their confidence in their own abilities. The comparison of participants and non-

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participants supported the findings from before-and-after comparisons that membership in the groups affected the women's behavior.²

Clark and Gakuru concluded that

On an individual level, such a program can indeed assist in achievement of personal goals: self-confidence, new health behavior, and increased income. On a community level, it yields increased involvement in community life and new sources of goods and services.

Schuler, Hashemi, and Riley (Schuler and Hashemi 1994; Hashemi, Schuler, and Riley 1996; Schuler, Hashemi, and Riley 1996) conducted a correlational study of the effects of rural credit programs on women's empowerment and contraceptive use. They tested the hypothesis that women who participate in one of two such programs in Bangladesh³ became empowered and used contraceptives more than non-members. They used survey data to establish the relationship between participation in the credit program and contraceptive use, and they used survey and ethnographic data to explain the relationship. Based on the eight indicators of empowerment that we cited above, the researchers found evidence to support their research hypotheses. "Participation in credit programs appears to empower women, in part (but not entirely) by strengthening their economic roles...and empowerment is positively associated with contraceptive use."

Women's economic roles in their families and communities were strengthened by receiving credit. The rituals of the credit organization helped create for participants an identity outside of their families. "The program gave them socially legitimate reasons to move about and to associate with one another in public spaces, and the meetings increased their mobility and visibility, exposed them to new ideas, and helped them to become more confident and more skillful at interacting in the public sphere."

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This was not an education program, and the training it provided was secondary to the credit. The women's empowerment, however, seems to have come not only from their increased financial resources but also from their membership in the organization and the opportunity to try new social behaviors.

Burchfield (1996) surveyed 400 women in Nepal who had completed literacy training programs at least a year earlier and a comparison group of 100 who had not participated in such programs. She wanted to determine, among other things, whether participation in the literacy training affected their level of empowerment. She used about 40 indicators of empowerment. These she categorized as sense of economic security, ability to earn a living, control over income, household decision-making, self-confidence and self-respect, ability to act effectively in the public sphere, participation in public protest or political campaigns, political awareness and participation, participation in non-family groups and organizational meetings, actions to improve children's future, and vision of a future.

Although her research report is still in draft form, Burchfield's initial conclusions are that participation in literacy training programs (some six months and others nine months in duration) had a positive effect on empowerment in some ways but not others. Participation increased

- ◆ respect for women's opinions by family and community members;
- ◆ women's confidence in stating opinions;
- ◆ participation in discussions about politics and about men's drinking and beating their wives;
- ◆ participation in credit or loan programs; and
- ◆ checking on their children's attendance and progress in school.

Research on Nonformal Education's Effects on Empowerment and Behavior

For these items, she found a statistically significant difference between the before-and-after responses of women who took literacy courses and those who did not. For other indicators, she found a positive, though not statistically significant, change in empowerment among women who had taken literacy training: a tendency not to feel cheated in the market (confidence in math skills), participation in discussions of what they had read, and the belief that women in general could be members of the village council and that they themselves could become council members. Altogether, about three-fourths of the indicators revealed significant differences between women who had participated in literacy programs and those who had not.⁴

The study also looked at differences in empowerment between women who had taken a six-month literacy course and those who had taken a nine-month one. The additional three months are associated with additional significant differences, including the use of birth control and involvement with husbands in childbirth decisions.

Qualitative studies

Qualitative research studies of nonformal education are far more numerous than experimental studies. While these studies may not meet the test of the scientific method favored by some, they provide clear evidence that literacy and other nonformal education programs empower participants and affect behavior.

Literacy. Archer and Cottingham (1996) report on an extensive evaluation of a literacy training method called REFLECT, introduced by the British ActionAid, initially in Bangladesh, El Salvador, and Uganda. In all three countries, the authors found positive effects of the program on the self-realization of individuals, their participation in their communities, and in “collective action,” resource management activities, gender roles, health, and children’s education. Though the impact varied among countries, the authors document impressive results across all three. In terms of children’s education in Uganda, for example, the

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research team found that in program areas children's enrollment increased in government schools by 22 percent and in other schools by 4 percent. They attribute these increases, as well as increased participation by parents in parent-teacher associations, to the parents' empowerment through the literacy training (Archer and Cottingham, 1996).

In the mid-1970s, the Directorate of Community Education in Indonesia developed a village-level approach to family-life-planning education, which had as a central aim to change family planning behaviors (Kindervatter 1979). It used radio broadcasts and listening groups as a teaching medium. At one project site, learners went beyond expectations in assuming responsibility for the program. Kindervatter found that when these groups engaged all participants actively in program planning and script writing, they learned not just the content of the program material but also skills of self-reliance as well, "such as identifying one's needs, analyzing, problem-solving, seeking resources, working together, and interacting with authorities." Following this experience, Kindervatter observed that participants became more active in community leadership roles and village development activities.⁵

Bown (1990) reviewed 44 "fugitive" studies on the behavioral changes affected by literacy training, and reported a wide range of results. "It proved to be relatively easy to find many examples of a connection between literacy and women's self-realization, and the quantity of testimony was from male and female witnesses and from women participants in literacy programs."⁶

Health. Research on a women's literacy and health education project in Nepal (among those studied by Burchfield) documented changes in health-related behaviors and other indicators of empowerment (Smith, Shrestha, and Comings 1995; Comings, Smith, and Shrestha 1994). The Health Education and Adult Literacy (HEAL) program taught literacy and health care skills to village volunteers and mothers in project villages. Researchers interviewed staff at all levels of the rural health care system, from village volunteers to district public health officials. Village

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volunteers reported that mothers from project villages came more often for oral rehydration solution, and the volunteers no longer had to seek out women for immunization clinics. After participating in the project, women were more direct in expressing their opinions, more proactive in asking for advice and materials, and less shy about conferring with outside health staff. Behind these actions appeared to be an increased confidence and willingness to seek help. The project staff conclude:

The acquisition of literacy skill increases self-esteem and offers an important peer-support mechanism for village women. Together, as they increase their capacity to learn and to care for themselves and their families, they begin to take on a crucial leadership role in their villages (Smith, Shretha, and Comings 1995).

Other research on nonformal education programs found that a mother's self-image is positively related to the health and nutrition of her children (Griffiths 1992, as reported in MkNelly and Dunford 1996). Programs in Cameroon, Turkey, and India demonstrated that mothers who lacked self-confidence failed to apply what they were taught about caring for children, while those with self-confidence did apply what they had learned.

Purdey, Adhikari, Robinson, and Cox (1994) concluded from their work with rural villagers in Nepal that women were more likely to change their reproductive health practices once they felt empowered.

One activity during the perinatal nutrition research had the community women first drawing a picture of a pregnant woman on the ground and then discussing reproductive issues. Project staff believe that without the women's previous empowering experiences in which they learned to overcome shyness and articulate their thoughts, they would not have been able to readily and enthusiastically discourse on this sensitive topic.

Research on Nonformal Education's Effects on Empowerment and Behavior

An evaluation report on a nonformal health education project conducted in Cambodia (Holcombe, Murakami, and Samnang 1996) linked changes in health practices of village men and women to the training methods of the project, which were intended to empower participants. Following health education workshops that focused on personal hygiene, sanitation, and malaria, the evaluators asked members of the target audience about their health practices. The survey results showed substantial changes in participants practices, whereas members of the control group reported fewer changes. Health officials in the target areas reported improvements in health knowledge and practices among the villagers and reduced cases of malaria, dengue fever, and diarrhea. Use of oral rehydration salts and immunization increased, according to statistical evidence and reports of public health officials (Murakami 1994; Murakami, Kahler, and Levitt 1995).

Agriculture. Farmer Field Schools train farmers and agriculture extension agents throughout Asia and in some countries in other regions of the world in Integrated Pest Management (IPM). The purposes and methods used in these nonformal education training centers is to reduce the use of harmful pesticides by encouraging the management of insects and other animals that are the natural enemies of pests. Tropical ecology varies considerably, even within small areas, so agriculture extension agents cannot use training methods that simply broadcast universal instructions or solutions. To manage natural pest controllers, farmers must make decisions based on the confluence of a variety of conditions. Thus, the farmer not only has to acquire technical knowledge about biological properties of rice varieties, their pests, and the natural enemies of those pests, but also has to apply that knowledge locally and intermittently, depending on the interaction of these factors (Useem, Setti, and Pincus 1992; Dilts and Hate n.d.).

The curriculum of the Farmer Field Schools includes technical knowledge and training in decision-making, problem-solving, communication, leadership, and team-building. Thus, the school empowers farmers to manage their rice crops without dependence on the knowl-

Research on Nonformal Education's Effects on Empowerment and Behavior

edge of “experts.” The research on Farmer Field Schools uses as its measure of success the number of farmers who adopt reduced-pesticide methods. Studies, particularly in Indonesia, demonstrate convincingly that the training methods are effective, with the average reduction in pesticide use averaging 62 percent in all regions of the country (Useem, Setti, and Pincus; 1992).

Those who have developed and researched the Farmer Field Schools attribute the schools’ effectiveness to their ability to empower farmers to work together to collect and analyze information about what is happening in their rice fields and to make decisions on how to manage pests. As their decision-making and management skills improve, farmers use them to conduct village-wide rat control campaigns, extend IPM management skills to other farmers, establish demonstration fields, and create theaters to entertain and inform others in their villages about IPM (*IPM Farmer Field Schools: An Indonesian contribution to Sustainable Agriculture*, n.d.).

Business. Kamel (1994) tells in vivid detail the story of young girls in poor neighborhoods of Cairo who were brought together to pull rags out of garbage and weave them into carpets. Over the years, under the guidance of women who were entrepreneurs and teachers, the girls learned to weave carpets, to market them, and develop and manage a thriving business. As girls recognized the need for literacy and numeracy skills in their work, they learned to read and write, and, as needed, they acquired critical thinking, analytic, and problem-solving skills. Their empowerment helped them manage their family lives as well. Because the author followed the activities of the village of Mokattam over ten years, she was able to document evidence of many girls (about 150 trainees each year) acquiring knowledge, skills, and an increasingly stronger sense of self-efficacy.

Research on Nonformal Education's Effects on Empowerment and Behavior

Women's own accounts

Women's own testimonies offer convincing evidence of how they have been empowered by participating in literacy training programs.

USAID/Nepal (1996) collected hundreds of statements by women on their experience as participants in literacy classes. One literacy group facilitator reported this story:

Muna loved to go to adult education classes. One day her husband, who did nothing but drink, was red from anger because Muna had gone to the literacy class. When she came back he kicked her out of the house. The next day Muna brought this news to her class. A meeting was held. Her husband came and was forced to relent. Muna returned home and has continued going regularly to the class.

A researcher in South Africa captured a similar anecdote. At first, the woman's husband had allowed her to attend a literacy class.

But now my husband starts complain...that the days I go to my class I come late, the food is not ready in time... He fight me for the food. I say why not cook yourself, you have hands. He kick me. Next time I come late again I was afraid. I was shaking. He said to me I am going to stop this business of learning. He take my books and throw them away out of the door. I go out and pick them and say you do this again I'll pack my clothes and go away. You cook and wash for the children. He look at me. He keep silent and go to the bedroom. And I know I have win (Lind 1995).

These two incidents vividly portray empowerment. Not all stories are so dramatic, and not all involve family incidents. This woman described a different dimension of empowerment:

Research on Nonformal Education's Effects on Empowerment and Behavior

At the beginning women were illiterate but after the adult literacy class, we became able to manage our daily lives more easily. We started to clean the village, plant vegetables, construct latrines and smoke-outlet stoves, plant trees, work in groups and invest the money that we all put together. (USAID/Nepal 1996).

Another woman told how participating in literacy classes gave women self-confidence:

We, the women at our village, spent our time collecting grasses for the cattle and fuel wood for cooking...and being afraid of people. We did not know any ways of talking. We faced a reverse situation in the meeting. We had to speak in the gathering. At that time we were all sitting aside covering our faces with cloths. Then, we came to know about groups and gradually we started participating in the discussion, so we awakened (Purdey, Adhikari, Robinson, and Cox 1994).

A participant in the Nepal HEAL project testified:

If a man showed up in the village wearing a shirt and pants (official dress), we would just run away and hide. Now we don't. Now whoever comes we can talk with them. Even if the Prime Minister comes we would talk to him. That's how much our confidence has grown, that much. (Smith, Shrestha, and Comings 1995).

Another participant explained how learning to read helped to empower her:

In the village, I used to hear about the kinds of things we learned in class. People used to talk about things that can happen. Then, when I read it in the book, I felt it was really true, and that it can happen to anyone. It's not just stories or rumors. The book confirmed it for me. So if we are able to read, then we

Women's Associations are Growing in Number

will understand more of what we are hearing and what we didn't know before (Smith, Shrestha, and Comings 1995).

Women's Associations are Growing in Number

A rapidly growing number of organizations started by women and for women's causes are demonstrating success. Tripp (1994) documents the swift rise in the number of women's organizations in Uganda and Tanzania, beginning in the late 1980s. Stromquist (1988) summarizes the effectiveness of these organizations in addressing women's problems:

Female-run voluntary development organizations have, in general, proven to be more competent in addressing women's problems than the state and even other voluntary organizations. They combine the provision of skills with information to promote gender awareness. They also tend to provide organizational and mobilization skills simultaneously by making women active participants in various project activities. The success of these organizations (*success that is not measured by carefully controlled evaluations but by the satisfaction of the participants themselves and the continued existence of the organizations*) indicates that the positive results attained by these groups derive perhaps less from resources and formal management features than from patience, commitment to serve women, and a complete diagnosis of the conditions of women in society (Stromquist 1988).

Another source of information about women's organizations in the developing world comes from the Global Fund for Women, a U.S.-based organization that has made grants to more than a thousand women's associations. On the basis of requests for grants that come to them and the size of the mailing lists of the International Women's Tribune Center and the International Women's Rights Action Watch, the Global Fund estimated in 1993 that at least 10,000 women's associations, excluding those in the United States, are communicating beyond their

Women's Associations are Growing in Number

own villages and towns, and that these groups are taking on increasingly complicated issues. In 1988, the Global Fund for Women's first year of operation,

typical proposals from women's groups focussed on income-generating activities or on gender studies research and documentation by middle- and upper-class women. Over the years, we have witnessed the emergence of women's groups at all socio-economic levels of society and of women organizing in minority ethnic groups and minority female populations.

Grassroots women's organizations have blossomed, and they are taking on difficult issues, such as reproductive rights, dowry death, and women's rights in the workplace. More women's groups are challenging orthodox patriarchy in their religious communities. More women are reaching out to instruct other women of their legal rights and of the official channels to justice they can follow when those rights have been violated. More women are bringing the hitherto hidden issue of domestic abuse to the attention of their communities (Global Fund for Women 1993).⁷

The semi-annual evaluation reports on the Global Fund's program (Global Fund for Women 1990–1996) record many accounts of women who have been empowered through working with the association, either as paid or volunteer staff or as a recipient of services. Recipients are often members of village-level or peri-urban groups formed to help women exercise their rights or learn better health care practices. These and other statements by individual women and women's organizations indicate the extensive amount of information that remains to be pulled together in systematic studies of the effectiveness of nonformal education for women.

Women's Associations are Growing in Number

What takes place in these associations? In what ways do women change their behavior as a result of their participation? What effect do these collective behavior changes have on demographic change?

How Nonformal Education Affects Behavior Change

Earlier, we looked at the theoretical basis for linking schooling and demographic change through the mediating variable of empowerment. We noted the theory that the structural character of schooling rather than its curriculum is empowering (Caldwell 1980; Inkeles 1983; Dreeben, 1968).

The school is not the only organization that has a modernizing influence. Inkeles (1983) emphasized that factories seem to have as much effectiveness in modernizing men as do schools.

The effects of the school, we believe, do not reside mainly in its formal, explicit, self-conscious pedagogic activity; rather, they are inherent in the school as an *organization*. Its modernizing effects follow not from the school's curriculum, but rather from its informal, implicit, and often unconscious program for dealing with its young charges... The organization of the factory and its mode of functioning embodied a series of fundamental principles to which men from a traditional background would respond favorably...learning would come about through the same processes of socialization...[as what happens in schools].

Comings and his colleagues also concluded that it is "group formation and leadership development" that mediates among education and health and family planning practices (Comings, Smith, and Shrestha 1994).

Which features of a nonformal education program—and we emphasize that our definition includes programs not necessarily aimed at teaching or training—empower participants? Like schooling, nonformal education appears to empower women through a social learning process: they

Women's Associations are Growing in Number

acquire new knowledge and skills *and* the sense of self-efficacy needed to adopt new behaviors. Comings and his colleagues concluded that the group formation and leadership development processes helped participants in the HEAL program acquire a sense of self-efficacy. Even though test results confirm that participants acquired literacy skills and knowledge about good health practices, the use of these skills and knowledge is conditioned by the woman's belief in their efficacy *and* in her own self-efficacy in employing them.⁸

Not all nonformal education programs teach self-efficacy; many teach only literacy or other technical skills. As in schooling, the technical skills taught in nonformal education may be less important than the structure of the training environment and the norms it conveys. After years of disappointing literacy campaigns, where participants dropped out or quickly forgot what they had learned, practitioners learned that adults are more likely to acquire literacy skills when those skills help them achieve broader economic and social goals (Easton and Moussa 1996; Bown 1990). This observation is supported by the experience of managers and participants in programs that are not primarily intended to educate people but, rather, to engage them in social or economic activity. The rural credit program documented by Schuler and Hashemi and the rug weaving program described by Kamel are illustrative cases. Empowerment of women in these programs was a result of the structures, regulations, rituals, group support they encountered, and financial resources they received—as well as some training.

Archer and Cottingham (1996) compared the effects of the REFLECT literacy training method (based on Freire's approach to empowerment through literacy training) with the effects of other literacy courses taking place among the same populations. The researchers found little evidence of empowerment among the non-REFLECT groups. They concluded that "literacy [alone] does not empower people. The control groups showed very few signs of having changed peoples' lives." The literacy process and the empowerment process must be interwoven.

Nonformal education programs are effective when they require learners to participate actively rather than to sit passively. Programs that encourage learners to interact with each other and try new behaviors, and that reward independence, planning, and achievement, help learners take responsibility for their performance. These programs, like schools and factories, present learners with a norm-conditioning structure that offers new knowledge and a stronger sense of self-efficacy. Like schools and factories, they can empower participants. (See Kindervatter [1979] and the Bernard van Leer Foundation [1995] for discussion of participatory methods in nonformal education.)

Skepticism and Issues

The failure to pay enough attention to nonformal education and participation in associations seems to come largely from the inadequate nature of the research on these endeavors. Yet there are also substantive criticisms of nonformal education's effectiveness in changing behavior. In reviewing the literature, we found several issues raised by skeptics about the effectiveness of nonformal training in empowering participants.

Duration. Some have argued that nonformal education does not provide enough exposure to new knowledge, skills, and/or organizational norms to have an effect (Browne and Barrett 1991; Jejeebhoy 1996).

Because nonformal programs offer only brief exposure covering a specific issue (e.g., agriculture, literacy, and immunization), the prospect of deriving large indirect benefits from adult nonformal programs seems unpromising. (Jeebhoy, pp. 3–4)

This argument raises two questions: How much exposure to a learning environment is needed? And at what age?

Researchers have tried to determine how many years of schooling are required to bring about demographic change, but the answer seems to

Skepticism and Issues

vary from one society to another (LeVine 1987; Jejeebhoy 1996). LeVine (1987) questioned the notion that we can specify the number of years of schooling required to affect reproductive and health-related behavior, as the effects of school on reproductive behavior are evident even when girls have had only a few years of schooling. But it is not yet clear that the duration of schooling or nonformal education is a meaningful variable.

We have seen no research on the age at which girls are most amenable to learning behavior changes related to child-bearing and health care. It could be that measures of years of schooling are confounded with the variable of age. Schooling and nonformal education may be most efficient when girls and boys reach puberty. The age factor, like the exposure-time factor, probably varies from one social context to another.

Not all nonformal education programs lead to empowerment (just as not all schooling leads to empowerment), so the length of exposure, age of exposure, and conditions under which programs affect behavior deserve to be better researched.

Self-selection. Schuler, Hashemi, and Riley (1996) took pains to address the criticism that their research might be invalidated by the self-selection into credit programs of women who are already more empowered. Burchfield's (1996) research showed significant differences in background and dependent variables between women who participated in literacy programs and those who did not. Is it possible to prove that self-selection is not an issue? Is it necessary?

In the studies on girls' schooling and demographic change, other than controlling for variables such as social and economic status, researchers did not question whether girls who attend school are self-selected. It really does not matter whether girls who go to school or girls and women who participate in other programs have more propensity toward empowerment than those who do not. We know that some individuals are more likely than others to adopt innovative behaviors. The issue is

Extending the Framework to Other Development-related Behaviors

whether nonformal education programs build on and reinforce that propensity, as schooling does.

Economics. Economists have argued that the economic return is greatest on investments in the education of primary-school-age girls because these girls have the most years available in which to earn income. But we are not measuring the value of education in terms of earned income; instead, we are looking at it in terms of reduced birth rates and child mortality and morbidity. The span of years during which a woman makes decisions about family planning and child-raising is about the same for all women. For women already of child-bearing age, programs can have an intergenerational effect: mothers may decide to send their own daughters to school.

Extending the Framework to Other Development-related Behaviors

We have focused in this review on links between education and demographic change. But education also influences economic change and change in civil society. Research has demonstrated that men and women who have gone to school are more likely to contribute to economic growth (Schultz 1991; Browne and Barrett 1991). We also know that non-school programs for women can affect their economic behavior (Hashemi, Schuler, and Riley 1996; Clark and Gakuru 1982; Bown 1990; MkNelly and Dunford 1996). An age-old premise of schooling is that it creates good citizens; studies have shown that nonformal education does this too (Hoxeng 1973; Bock and Papagiannis 1983; Tripp 1994; Mitlin and Thompson 1995; Thompson 1995). Thus, it seems reasonable to extend our theoretical framework to include links between nonformal education and economic growth, and nonformal education and participation in civil society.

Conclusions

To conclude, we will reiterate our theoretical framework for linking nonformal education to demographic change and suggest areas for further research.

Linking Nonformal Education to Demographic Change: A Recapitulation

Education, formal and nonformal, is linked to demographic change through two mediating sets of variables: (1) Participants are “empowered” through their learning experience, and (2) their empowerment leads to changed behaviors related to child-bearing and child-raising. These behavior changes eventually result in lower rates of fertility and child sickness and death.

The studies of links between schooling and demographic change are abundant and persuasive. Rigorous studies of links between nonformal education are few. Nevertheless, the evidence that nonformal education empowers women is strong. Thus, **we can rely on the links documented in the schooling research between empowerment and demographic change to conclude that both formal and nonformal education affect demographic change.**

Further Needs for Research

The next step is to conduct more research on how nonformal education and membership in associations empowers women. We suggest the following areas of research:

- ◆ Rigorous quantitative and qualitative studies should document the effects of nonformal education groups and associations on women. What behavioral changes are observed in participants? What structures, events, or activities produce these changes? What are the characteristics of effective pro-

Further Needs for Research

grams and organizations? What indicators, generic and specific to context, can we use to monitor empowerment?

- ◆ Our review suggests that schooling and other experiences that empower women provide them a sense of self-efficacy in addition to knowledge and skills. We should test this hypothesis through further research. What other conditions and/or resources are required to empower women?
- ◆ Programs that affect women's behavior in civil society and democratic governance need to be better documented. What evidence is there that empowering adults affects their leadership roles, participation in local decision-making processes, voting in national elections, and readiness to keep informed of government activities?
- ◆ The evidence of nonformal education groups' effects should be pulled together in systematic presentations. Much of it is not readily accessible through journals or libraries. Information in donor agency reports and fugitive academic papers needs to be reviewed and relevant data culled.

To summarize, research that uses large-scale databases to link schooling to demographic change need *not* be imitated to link nonformal education and local associations to such change. We know that demographic change is mediated by women's empowerment. Future research should explore programs and associations for girls and women who have *not* become empowered through schooling.



Endnotes

1. The lifestyle index included measures of schooling, years living in the community, income-generating activities, participation in community organizations, independent income, and literacy.
2. This research project was also carried out in the Philippines, where the results were similar to those in Kenya. Due to problems in the collection of data in the survey (the university students hired to collect data may have frightened villagers who associated them with insurrection activities), the researchers chose not to use these quantitative data. Qualitative data led to their conclusion that the intervention had raised individuals' confidence in their own abilities.
3. The Grameen Bank and the Bangladesh Rural Advancement Committee (BRAC) programs.
4. The findings present some ambiguity about the effects of these literacy programs. Except for those noted in the text above, the differences between women who were in groups and those who were not existed both before and after the program. Literacy class participants did not score significantly higher than non-participants on all variables, and both participants and non-participants scored quite low on many.
5. Kindervatter did not write about changes in family planning behaviors.
6. The brevity of Bown's account of each study does not permit an assessment of the quality of the research.
7. Women's organizations supported by the Global Fund for Women vary in scope and purpose, from national membership organizations, such as La Coordinadora Nacional de Viudas de Guatemala (13,000 women) to small associations like the Mirimu Tukolerewamu Women Cooperative in Uganda and the Indigenous Women's Development Center in Thailand that are working on community-level issues.

Endnotes

8. Comings and his colleagues working in Nepal are also close to defining what it is about literacy training that helps to empower girls and women (see Comings, Smith, and Shrestha, 1996).

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The SARA Project is operated by the Academy for Educational Development with subcontractors Tulane University, JHPIEGO, Macro International, Morehouse School of Medicine, Population Reference Bureau, and Porter/Novelli. SARA is funded by the U.S. Agency for International Development (AFR/SD/HRD) under Contract AOT-0483-C-2178-00 (Project number 698-1483).

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