ABEL 2

Advancing Basic
Education and Literacy
Phase 2

# ADULT LITERACY PROGRAMS: DESIGN, IMPLEMENTATION AND EVALUATION

**October 1995**


**Conducted by**

The ABEL 2 Consortium
Academy for Educational Development with
Creative Associates International, Inc.,
Educational Development Center,
Florida State University,
Harvard Institute for International Development,
and Research Triangle Institute



**Conducted for**

Office of Field Support and Technical Assistance
Center for Human Capacity Development
Bureau for Global Programs, Field Research, and Support
U.S. Agency for International Development
Contract No. HNE-5832-C-00-4075-00

# Adult Literacy Programs: Design, Implentation and Evaluation

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**"I want to be able to read the names of the gods before I die."**

The statement above was given by a woman in Nepal in response to the question, "Why do you want to learn to read?" Her answer might seem frivolous to a national planner looking to allocate scarce resources in order to have an impact on economic growth, but such a conclusion would be incorrect. By learning to read the names of the gods, the Nepalese woman will become literate. Literate women have healthier children and smaller families, and they contribute more to family income and community development than illiterate women. Almost all of the world's one billion illiterate adults, most of whom live in the poorest countries, want to learn to read, but very few of them are being provided with opportunities to learn. The literacy programs that do exist are often poorly designed, ill managed, and inconvenient. This monograph draws on existing literature as well as specific project experiences in Nepal to provide insights on how to design, implement, and evaluate successful programs. Hopefully, it will promote the development of more opportunities for Third World men and women to learn to read and write, no matter what their motives.

from the experiences of several other countries and have been improved based on evaluations supported by a number of different agencies. Next, the "Research and Development" section outlines strategies for how research can support the improvement and expansion of adult literacy programs. In the "Conclusion," we offer our insights about the realistic promise of adult literacy programs. The last two sections include a bibliography of useful materials and a list of resource centers that can provide technical assistance and training on literacy.

# Introduction

In March of 1990, the world's educational leadership gathered in Jomtien, Thailand, to take part in the World Conference on Education for All. At the end of the conference, the delegates voted in support of the *World Declaration on Education for All* and the *Framework for Action to Meet Basic Learning Needs*. The right of adults to have access to education was affirmed in the *Declaration's* first article, which states that "Every person - child, youth and adult - shall be able to benefit from educational opportunities designed to meet their basic learning needs." The *Framework* sets as a specific goal for adult education the "Reduction of the adult illiteracy rate (the appropriate age group to be determined in each country) to, say, one-half its 1990 level by the year 2000, with sufficient emphasis on female literacy to significantly reduce the current disparity between male and female illiteracy rates." Over the past five years, leaders in governments, donor agencies, and nongovernmental organizations (NGO) have explored ways to meet this important goal and developed several successful approaches; however, at the middle of the decade it appears that the world is not going to achieve the desired reduction in illiteracy by the year 2000. Additional resources are needed to achieve this goal and all resources, both available and hoped for, must be more wisely managed.

While no single document can provide all of the details needed to carry out a successful literacy program in all situations, this monograph describes essential elements and processes that can be adapted to the specific needs of different populations. The monograph first presents the rationale for adult literacy and then a brief history of literacy programs. Together, these two sections provide the background for understanding the role of successful literacy programs in furthering the objectives of international development. The largest section, "Elements of Successful Programs," then provides guidelines for the design of literacy programs; these guidelines can also serve as a framework for evaluating existing efforts. The "Costs and Financing" section provides information that is useful for preparing a budget and financial plan for a literacy program, and the "Evaluation and MIS" section explains how to monitor a program's progress and impact. The next section presents a case study of work done in Nepal. Nepal provides a particularly good example of how a program with sufficient resources to design, field test, and revise its materials and approach can evolve over time. This program continues to involve a large and diverse group of national government agencies, large development projects, local and international NGOs, and local government units. The materials and instructional design have drawn

# Rationale for Adult Literacy Programs

Unesco estimates that more than 950 million people are illiterate.[1] Because many countries depend on self-reporting to set their literacy rates and define as literate anyone who has been to even one year of school, this figure is probably a significant underestimation of the adult illiterate population. For example, in 1985 the World Bank reported the literacy rate in Lesotho as 74 percent,[2] but in that same year an independent assessment found that only 62 percent of a sample population could perform satisfactorily on a test of simple reading and writing skills and only 46 percent could pass a test of basic math.[3] Unesco reports the United States' literacy rate at greater than 95 percent, but the recently completed *National Adult Literacy Survey* finds that at least 45 percent of the U.S. population has low or severely limited basic skills.[4]

The level of literacy skill that would be considered severely limited in rural Lesotho is quite different from that in urban America; in fact, the only useful definition of literacy is one that is set within the context of the life of an individual. In any context, however, the inability to read a simple text, such as those used in the first grade of primary school, should be considered complete illiteracy, and Unesco's estimate of 950 million is made up of people who fit this definition of illiteracy. If literacy is defined more broadly as a proficiency in reading, writing and math sufficient to compete for good jobs and participate fully in social and political life, the number of adults, worldwide, who could benefit from basic skills training might be as high as 2 billion. If the definition includes workers who could earn a higher wage if they improve their basic skills, the total might be 3 billion. Because approximately 100 million of the world's primary school age children are not attending school[5] and many who do attend drop out in the first two years, the world's illiterate population will not decrease dramatically over the next ten years without a much greater adult education effort.

Seventy percent of the world's illiterate population are women, and an equal percentage of the world's out-of-school children are girls. Primary school participation rates are lower for girls, and their school drop-out rates are higher at every grade. In most third world countries, illiteracy rates are much higher for women than for men. In at least 10 countries, the percentage of literate women is less than 20 percent, while the male literacy rate can be as much as twice that of the female rate.[6] A study in Nepal[7] that used 1991 data concluded that although the absolute number of illiterate males would decrease by a greater amount each year for the next 20 years, the number of illiterate women would continue to grow by increasing numbers for the next 7 years and would not even begin to decrease

for another 7 years. The number of illiterate women in the world will probably continue to grow until sometime in the next decade when efforts to expand access to primary school will provide an education to most children. Even when that day comes, the educational level of men will remain significantly higher than that of women, because boys will stay in school longer. At that time, only adult education will be able to address the disparity in educational attainment for women who have left school.

The formal school systems in most of the poorest countries are still at least a decade away from providing all children with a basic education. Even if these systems could be expanded and improved instantaneously, there would still be almost 1 billion illiterate people in the world. For the next several decades only a program of adult education can address the needs of this huge population. Development planners, however, have shown little interest in adult literacy programs because they believe that they are ineffective in two critical ways: First, the benefits to other development sectors (health, family planning, and economic growth, for example) accrue only from formal education; and second, they believe that adult education programs operate with extremely low efficiency because of high drop-out rates and quick erosion of skills. These are misconceptions that will be addressed in the following two sub-sections.

**Benefits:** **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 and positive health indicators, lower fertility rates, higher agricultural productivity, higher family income, and other social and economic indicators. In cases where data can be analyzed by gender, the education of women is usually a much stronger predictor of positive impact. Almost all of this research has looked at people who gained their education in the formal school system, and very few studies employed any measure of skill level, not even a simple reading test. Because of the lack of research that directly explores the impact of adult education, this monograph will discuss both the research on the impact of formal education and the few studies that do exist on the impact of adult education. The largest number of available studies examine the relationship between women's

educational level and positive health and family planning behavior. This data will be used to explore the hypothesis that literacy skills acquired by women as adults would have some of the same effects, along with additional effects, as those enjoyed by girls attending primary school.

Research has identified a strong relationship between mothers' levels of education and lower morbidity, mortality, and fertility rates in families,[8] even after controlling for socioeconomic status (SES) and access to health services.[9] Both economic and social gains resulting from girls' education have clearly been documented in multi-country studies.[10] In his own review of existing literature, Arun Joshi[11] points out that maternal schooling accounts for as much as half of the positive effects on children's health while SES is responsible for the other half. Joshi's research also indicates that a mother's schooling is a predictor for her children's long term nutritional status. Paul Schultz,[12] analyzing aggregate data from 62 low-income countries to determine the factors affecting fertility decline, concludes that "The education of women is the dominant empirical factor associated with the decline in fertility in the cross-section and over time." He later concludes that, "Growth in income alone lowers child mortality but has little total (reduced-form) effect on fertility...."

Beyond documenting the impact of female education on family health and fertility, some research has investigated the mechanisms by which education positively affects both. The most direct effect is delay in marriage. Girls in school delay marriage until after graduation or the time of early drop-out, usually later than girls who are not in school. Educated girls are more likely to seek paid employment, which also delays marriage. Women who delay marriage are older when they have their first child and have fewer children in their lifetime. With fewer children these mothers have more time and resources available for themselves and their children, a situation that promotes better health.

A delay in marriage would not usually result from participation in adult literacy classes, because most of those women would likely be married already. Adolescent girls, however, might delay their marriages for one year or so as they complete their literacy class. In many cases, the real impact might be delayed. Women who complete adult literacy classes, like their schooled neighbors, are more apt to send their children to school.[13] Once there, the children's (particularly daughters') participation and performance in school is connected to their mother's education;[14] in fact, a mother's literacy level and reading practices are predictors of her daughters' level of school attainment.[15] Manuel Izquierdo, in a 1985 study reported by Ballara,[16] concludes that adults who had completed a nonformal literacy course were more likely than adults who had not attended the course to

send their daughters to school. It is highly possible, as Ballara also suggests, that children of women educated nonformally perform better in school than children of women with no education at all. A study of Save the Children's program in Nepal found that literacy class participants were sending more of their school-age children to school and that the number of girls attending school increased in villages where the literacy program took place.[17] In the U.S., a study based on an intergenerational literacy project found that 65 percent of the children whose mothers participated in adult education programs demonstrated educational improvement in school.[18]

Some researchers[19] have found that mothers educated in school as girls have internalized an image of the role of teachers, which they subsequently take on in rearing their children. Through this acquired disposition, educated mothers interact more verbally with their children, who in turn make greater time demands on mothers. These mothers then perceive children as very time-consuming and have fewer as a result. Running counter to these findings, Joshi[20] does not find that maternal schooling is significantly associated with more verbal responsiveness to children in Nepal, but he suggests that this may be due to cultural constraints on the high caste women in his study, or that a society must be in a more advanced stage of demographic transition (as in Mexico, for example) for this effect to materialize.

Although women usually attend literacy classes for a much shorter time period than girls attend primary school and at a time in their lives when they might be less influenced by role models, some changes in parent/child interaction may take place. More importantly, specific child rearing practices can be taught within the context of a literacy class, and these can have a direct and immediate effect on mothers' interaction with their children. Research into the impact of adult literacy classes may find that women do acquire dispositions that have an effect on child rearing practices, which could lead to lower fertility in the same way as has been reported from primary schooling.

Studies of the effects of literacy skill in rural Mexico, rural Nepal, and urban Zambia found that positive health and fertility behaviors were related to the level of literacy skill retained into adulthood.[21] These studies used tests of both literacy skill and of decontextualized language,[22] a skill related to literacy acquisition, to prove that literacy skill level is directly related to better understanding of health messages, printed or broadcast, and, less consistently, to more effective interaction with a nurse or doctor. In addition, these recent studies show that literacy skill acquisition affects both directions of the health and family planning communications channel: Literate women understand more of what they

hear about these subjects and are able to communicate with health professionals better than women who are illiterate. There is every reason to expect the same results from literacy skill acquired as an adult.

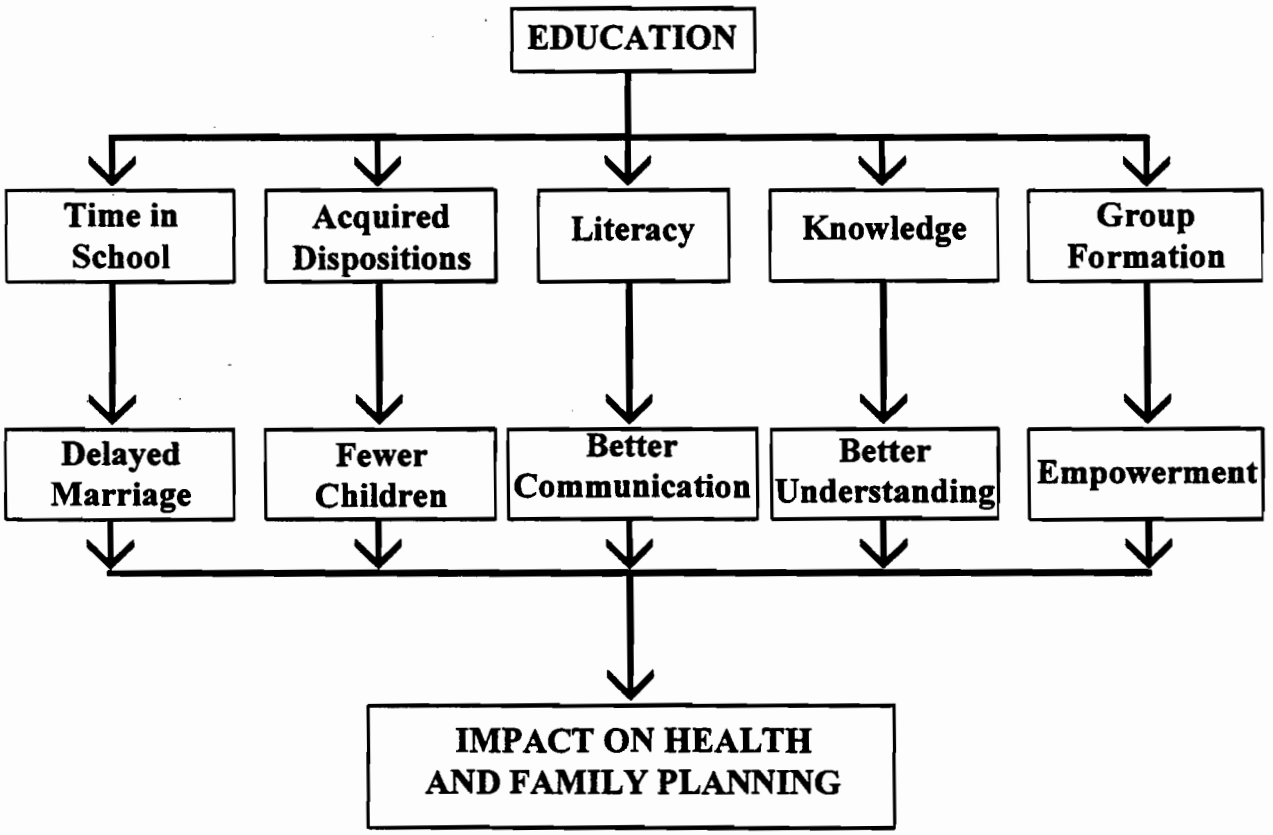
A literacy class can offer a venue for health and family planning education that can have a direct and immediate impact on women who are of child-bearing age. Most literacy programs now have some health and family planning information included in their materials. In Nepal, several evaluations found that women's health knowledge improved dramatically as a result of attendance in literacy classes.[23] In a review of 43 case studies of literacy projects that provided information about the effects of women's nonformal literacy acquisition, Bown[24] concluded that women's participation in literacy classes increases the likelihood that women will use ORT and immunization services, follow better nutritional practices, and exhibit birth spacing behaviors. In relation to family planning, she concluded that a nonformal literacy program for women "can have an immediate and sustained effect on women's opinions and behavior in matters that will determine family size (as well as possible access to schooling for those girls who would otherwise have been married off)." The HEAL project in Nepal, which will be discussed later, showed that positive effects can be even more pronounced when a literacy program is linked directly to a health and family planning service delivery system.[25]

Literacy classes provide an opportunity for women in a community to come together over a long period of time, and this opportunity generates the same positive effects reported from groups that have formed around other issues, such as income generation. The support of the group, along with the increase of self-confidence and self-efficacy that can come from acquiring literacy skills, stimulates empowerment. In themselves, adult literacy classes serve as a venue for women to discuss a wide array of problems and their possible solutions. Girls who go to formal school together do not necessarily live near each other for the rest of their lives. In some cultures, in fact, girls are required to marry away from their home village (exogenous marriage). This makes it difficult for the positive effects of group formation experienced by literacy class participants to occur among women who attended primary school.

Let us review the points made thus far by considering Figure 1, "Model of Possible Mechanisms Mediating Between Women's Education and Improved Health and Family Planning." The five mechanisms that mediate between education and positive health and family planning impact are arranged from left to right in the order of their relevance to education experienced as an adult. "Time in school" is less likely to account for delayed marriage for participants in adult

literacy programs, but it could lead to more time in school for their daughters who would, therefore, marry later. "Acquired dispositions" are more likely to occur in primary school, but they occur in adult literacy classes as well. "Literacy skill" should produce the same impact for both, and here the level of skill attained is more important than the manner in which it is acquired. "Knowledge" is a mechanism that is probably more powerful in adult literacy classes, because the range of knowledge, which builds on the real life skills of adults, is greater and its effect is immediate. Finally, the type of empowerment that results from "group formation" is probably more likely to result from participation in adult literacy classes than from primary schooling. Further research will probably confirm that the quality and duration of instruction, as measured by a test of literacy skill retention, are stronger predictors of positive health and family planning than the mode of skill acquisition.

*Figure 1*
*Model of Possible Mechanisms Mediating Between Women's Education and Improved Health and Family Planning*



The argument over whether adult literacy programs exhibit the same positive impact as primary schooling assumes, in part, that literacy skill is worthwhile only as a catalyst for other development sectors, such as health. In reality, an educated population is a goal of development. Whether literacy is important because it is a development indicator or because it is instrumental in achieving other development goals, a question remains as to whether or not adult literacy programs can contribute to higher national literacy rates.

**Efficiency: The existing research indicates that strong adult literacy programs are as effective and efficient as good primary schooling at the same or lower cost. The impression of inefficiency comes from observing poorly designed and under-funded programs.**

There is very little research or evaluation literature that looks critically at the issue of efficiency in adult education in the Third World, and almost none of the existing research compares adult education to formal schooling. In fact, a 1975 study by Roy and Kapoor[26] appears to be the only published study that compares primary schooling and adult literacy classes. This study is widely misinterpreted to prove that primary school is much more efficient and effective than adult literacy. In fact, the study reveals the opposite. Figure 2 presents the data from the study.

*Figure 2*
*Retention of literacy skills by year of instruction*

| Sample | Year of completion | Percentage in high literacy group | Mean score |
|---|---|---|---|
| Literacy class (I and II) | | | |
| n = 41 | 1958-1960 | 15 | 7.72 |
| n = 44 | 1961-1963 | 14 | 9.05 |
| n = 58 | 1964-1966 | 24 | 10.86 |
| Primary School (I, II and III) | | | |
| n = 27 | 1958-1960 | 18 | 13.20 |
| n = 23 | 1961-1963 | 36 | 13.80 |
| n = 21 | 1964-1966 | 38 | 15.49 |
| Literacy Class (III) | | | |
| n = 49 | 1958-1960 | 45 | 16.87 |
| n = 46 | 1961-1963 | 63 | 17.36 |
| n = 32 | 1964-1966 | 69 | 17.94 |
| Primary School (IV, V and VI) | | | |
| n = 93 | 1958-1960 | 71 | 19.90 |
| n = 97 | 1961-1963 | 78 | 20.46 |
| n = 99 | 1964-1966 | 80 | 20.48 |

This table has commonly been interpreted to show that schooling at each level is much more efficient than literacy classes. However, what the report of the study neglects to mention is that each "Level" of a literacy class represents no more than 100 hours of instruction while one "Year" of primary school represents as much as 500 hours of instruction. The study shows that adults who attend 300 hours of adult literacy class will retain their skill at a much higher level than adults who attained that skill as children with 500 to 1500 hours of instruction. Even the group that had 2000 to 3000 hours of primary school instruction has only a slightly higher mean score. With deeper analysis, what the Roy and Kapoor study shows is that adults can acquire and retain literacy skills with dramatically fewer hours of time on task than can children in primary school.

A review of all of the available evaluation studies of adult literacy programs in Third World settings concludes that poor program design and implementation are the causes of inefficiency.[27] Where programs are well designed and implemented, drop-out rates are between 30 and 50 percent, equivalent to drop-out rates in the first three years of primary school, and the adult participants achieve a skill level equivalent to primary school grade 3 or higher. It should be noted that the per student expenditures are much higher in primary school than the per participant expenditures in adult literacy programs.

Because literacy campaigns have usually been connected to political processes, they have been under pressure to provide service to all those in need. Program implementation has suffered from unrealistic time constraints and inadequate resources, resulting in high drop-out rates and low skill acquisition. The measures of skill retention have been inaccurate because the skill was never acquired in the first place. When sufficient resources and time are allocated to the design and field testing of a comprehensive program, adult education can be successful.

The available research on both impact and efficiency provides sufficient evidence to support the contention that adult literacy is not only a critical but a viable effort in support of a country's development. Further debate should, therefore, focus on which approach to delivery of adult literacy services is most effective. A brief history of these approaches will set the context for this discussion.

# History

Written language was developed 5000 or 6000 years ago as a tool of political and religious elites. The innovation of literacy was transferred between the elites of different cultures more quickly than between the elite and the less powerful within one country, and until the middle of the 18th century, literacy rates in Europe and North America were never more than ten percent. With the beginning of the industrial revolution in Europe and North America, workers with literacy skills became a necessity, and education was finally provided to the masses. By 1900, Sweden, Scotland, Germany, England, Switzerland, France, the United States and Canada had all reached literacy rates of 90 percent. During colonial periods, education and literacy were often used as a means of binding the elites of the colony to the culture of the imperial power.

Only a few national governments mounted literacy campaigns before WWII. In the USSR, a literacy campaign served the socialist ideal of educated workers. In the case of Turkey, the literacy campaign was part of an effort to switch from Arabic to Roman script in support of Ataturk's move to make Turkey a European country. Before World War II, most literacy programs in the Third World were funded by religious organizations. These organizations saw literacy as an aid in the practice of their religions, but they also argued that literacy was important to the development of communities in which they worked.

After WWII, governments in newly independent Third World countries placed an emphasis on literacy for all of their citizens. Over the next three decades a number of countries, most of which had socialist governments, mounted large national adult literacy campaigns. In 1975, Unesco responded to this movement by holding the International Symposium for Literacy at Persepolis in Iran that called for mass national campaigns to eradicate illiteracy. Unfortunately, the concept of mass literacy campaigns was soon caught up in the international political conflicts of the cold war. Campaigns in Tanzania, Cuba, and Nicaragua were criticized by some as political indoctrination that provided no real education while others hailed them as miracles. This polarization made it almost impossible to objectively evaluate the strengths and weaknesses of the campaign approach. At the same time, promising experiments that built on the teachings of the Marxist educator, Paulo Freire, were abandoned by anti-communist donor organizations.

In the 1980's, educational planners concluded that the problem of illiteracy could be solved only by primary schooling for children; subsequently, very little funding was made available to develop effective literacy programs. The end of the

Cold War has made more objective approaches to developing effective adult education programs possible, and the 1990 World Conference on Education for All put a new emphasis on adult literacy. Now, many different approaches to adult literacy are receiving attention. These will be defined here under three broad categories: Literacy campaigns, literacy programs, and integrated literacy programs. The terms "campaign" and "program" are often used to mean the same thing, but the two will be separated here in order to define these categories more accurately.

## LITERACY CAMPAIGNS

Campaigns attempt to serve almost all illiterate adults within a specific time period, usually a few years. The duration of instruction and the target skill level are usually limited. Also, campaigns generally depend on volunteers. A campaign offers the opportunity to directly involve a large number of adults in an educational process that can have several goals. In Burdwan district (population 6 million) in India's state of West Bengal, a valuable impact of its campaign was the enrollment in primary school of almost 100 percent of the children who were old enough to enter first grade. If the Burdwan campaign is viewed as a social marketing effort with a goal of full enrollment of children in primary school, it has been enormously successful at a low cost, partially because of the use of volunteers. This approach to promoting children's education has the unique quality of providing illiterate parents with a taste of the educational experience in which their children will be involved.

Campaigns have been criticized as ineffective because, in many cases, only a small percentage of the participant population acquires and retains a useful level of literacy skill; however, the acquisition and retention of usable literacy skills is sometimes a secondary goal. For example, the government might use a campaign primarily to demonstrate its commitment to educating all of its people. If a literacy campaign is seen as having several objectives, it may attain an acceptable level of success with each.

## LITERACY PROGRAMS

Programs attempt to provide participants with a usable level of reading, writing, and math skills. They usually teach a range of important information and provide for the practice of critical thinking and problem solving as well. The educational goal is to bring adults to a literacy level, usually a 3rd or 4th grade

level, at which they can retain their literacy skills and improve them over time through regular use. A program continues on a regular cycle each year until everyone able to participate has been provided with an opportunity. As opposed to a campaign, this approach might take a decade or more.

In addition, several years of preparation are needed for a successful program. Materials and instructional designs must be field tested and revised several times, and each test normally takes a year. Once the materials and instructional design are working well, the program expands its coverage each year until it reaches a maximum manageable size. A literacy program is probably more successful, in terms of drop-out rates and skill acquisition, in the first few years when classes are made up of those adults who are most eager to learn and, therefore, easiest to recruit and serve.

## INTEGRATED LITERACY PROGRAMS

Integrated literacy programs attempt to provide acomprehensive education over a longer time frame than a program or campaign, usually more than one year for each participant. The curriculum combines the basic skills covered in a program with another specific set of objectives such as health, family planning, cooperative development, or income generation. Rather than serving the entire population, an integrated literacy program provides this comprehensive education to a segment of the population with the goal of making participants into leaders in their communities.

The participants in integrated literacy programs act as early adopters as defined in diffusion of innovation theory.[28] This theory states that in rural Third World communities, there are always some people who will be interested in trying something new. Once they have tried out the innovation and found it useful, they promote it to others in their community. The theory also states that those in the community who adopt the innovation later are more likely to be influenced by someone who is close to their own social and economic status. Literacy participants come from the poorest and most disadvantaged segment of a community and are, therefore, good promoters of innovations to this difficult-to-reach group. The integrated literacy program acts as a selection process for identifying early adopters and a training program to provide them with skills and knowledge about the innovation. At the same time, it increases their self confidence and status, both of which make it easier for them to act as promoters of new behaviors and attitudes.

A country might adopt one of these approaches or might use a combination of two or even all three. For example, an integrated literacy program might be followed by a literacy program or campaign that depends on the efforts of the people who participated in the integrated program. In Nepal, most participants are served by the literacy program approach, but a number of NGOs have successfully adopted the integrated approach. The government has experimented with a campaign approach and is continuing to study this option as well. Regardless of which approach is taken, there are common programmatic elements that must be developed before any approach can be successful.

# Elements of Successful Programs

An integrated literacy program might spend more resources on a per participant basis and, through careful recruitment of participants, teacher training, and the provision of additional support services, achieve a high level of success for a small percentage of potential participants. A literacy campaign might spend less on a per participant basis to include a larger number of adults with lower levels of individual success. Both approaches could be called successful by their organizers. Additionally, participants themselves might have their own definition of success. Some participants want only to learn how to write their names while others are hoping that literacy skills will dramatically improve their lives. The latter goal, however, requires a good deal more funding than the former.

The writers of this monograph define a successful literacy program, in a Third World setting, as one where about 50 percent of the participants acquire a level of literacy skill sufficient to use and retain over time. Based on a review of the literature and project experience in Nepal, the following appear to be the important elements of a literacy program:

1. Timing and duration of instruction.
2. Instructional materials.
3. Teacher recruitment and training.
4. Participant motivation.
5. Supervision and monitoring.
6. Connection to other development activities.
7. Government/NGO collaboration.
8. Post-literacy activities.

Though some are more important than others, all of these elements contribute to program success. Each will now be discussed in detail.

## 1. TIMING AND DURATION OF INSTRUCTION

Some adults can learn to read and write quickly with little trouble while others, because of learning disabilities, find this task very difficult. The same is true for children learning to read in primary school. Unfortunately, the funding for both primary schools and adult literacy programs in the Third World is too limited

to provide sufficient time and resources to help students who require special attention. The little data that is available suggests that, for the average adult, 200 to 300 hours of instruction are needed to acquire a level of skill sufficient to use and retain over time.[29]

Time constraint is the first design element that planners must consider. Adults often have responsibilities that take precedence over study. In rural communities, for example, there are times of the year when agricultural demands prevent participants from attending literacy classes. In fact, in most rural communities there are only about six months during which even a few hours each day can be made available for study. Within such a time period, a program of approximately 250 hours (for example, 2 hours per day, 6 days a week for 5 months) would be both realistic and yet sufficient in duration for the majority of adults to acquire a usable level of skill.

How to best configure these 250 hours has never been studied. A program that takes place 8 hours a day over 30 days might achieve the same result as one of 2 hours a day over 120 days, but there is insufficient evidence to make this determination. Logically speaking, consistent effort (at least 8 hours per week) would be most effective. In Nepal, some NGOs have been able to complete the six month course in five months by increasing the class time from 2 hours per meeting to 3 hours, but no group has been successful in four months. Programs in Nepal that last 9 months or longer have provided an opportunity for more hours of instruction. Evaluations have shown that greater skill level is attained when additional hours are spent in class or in organized group or self study.[30] This added impact appears to be especially true for math and writing, which are generally more difficult skills to master.

## 2. INSTRUCTIONAL MATERIALS

Instructional materials provide the focus for classroom learning as well as the knowledge and skill units of the curriculum. The instructional materials must be built around a coherent approach to teaching basic skills, contain sufficient material, cover content of interest to the participants, employ a large type size, and have an appropriate number of words on a page. With a good set of materials, teachers and participants can still work out a way to learn even if teacher training has been insufficient.

To ensure that the materials are well designed, program staff must field test and revise them several times to insure that they are serving the needs of

participants. Each field test requires a full class cycle, usually a year. The complete development of a set of effective literacy materials can take two or three years. During the first year, the number of participants served must be kept low so that the materials development staff can focus on identifying strengths and weaknesses. After the first year, the program can serve a larger number of participants while refining the materials.

*Reading*

Over the last several decades several approaches to teaching reading have been developed. The earliest materials followed a phonetic approach in which participants were first taught the sounds of the alphabet and then learned how to put them together into syllables, words, sentences and paragraphs. Later, a whole word approach, in which participants learned words and built a vocabulary that they could recognize on sight, became popular. More recently, a whole language approach, which emphasizes reading in context, has gained wide support. In fact, good readers use all three skills (phonetics, sight vocabulary, and context), and most adult literacy programs now employ an approach that combines all three.

Two other trends have influenced the development of reading materials. During the 60s and 70s, Unesco popularized the concept of functional literacy, which stipulates that literacy should be learned within a context of practical skills and knowledge.[31] For example, literacy was learned in conjunction with improved farming methods. At the same time, Paulo Freire, a Brazilian educator, was promoting a literacy learning process that also built critical thinking skills.[32] In Freire's approach, participants engaged in open dialogue about themes related to oppression and empowerment as they learned to read and write. Both of these approaches are combined in many of the best materials.

Materials usually consist of one or two books that carefully build from a few letters to full paragraphs in a minimum of 150 pages. In addition, a class should have a set of instructional aids, such as charts, word or syllable cards, and games, which help teachers to present and review content and help participants to practice skills. The materials used in Nepal combine the best elements of the different approaches mentioned here. In Nepal, a class begins with a discussion of a picture such as the one in Figure 3 (all examples are presented in their actual size as a model for type size and layout).

*Figure 3*

In this lesson, participants first describe what they see: a source of water and several activities that take place around it. Gradually, the discussion grows to include issues such as where the participants themselves get their water, who brings it to the house, and what is clean as opposed to dirty water. Eventually, the discussion might end with suggestions on how to make water easier to get and how to ensure that it is clean.

During this session participants get up in front of the group and discuss the drawing while pointing out specific aspects of it on a poster-size version that is visible to all. For some participants, this is the first time that they have ever spoken before a group. Some participants might be shy and embarrassed and sometimes say only a few words, but they are gaining self-confidence by doing something they have never done before. The discussion about water also allows the participants to articulate their own position about an essential aspect of their lives. No matter what the subject, however, participants are learning how to talk about issues within a group, which is a skill they need in negotiations within their family and community, a skill particularly important for women. The participants then move on to learn the word for water as shown in Figure 4.

*Figure 4*

# पानी

| | | |
|---|---|---|
| प | पा | पी |
| न | ना | नी |
| क | का | की |
| म | मा | मी |

| | | |
|---|---|---|
| पानी | पाना | पीना |
| पापी | पाप | पीप |
| कम | काम | कमी |
| मन | माना | मानी |

At this point the participants are learning "water" as a whole word, but they move quickly to learning its syllables and letters along with other words that can be made with the same letters. Participants learn these skills, in part, through playing games with cards that display the letters and syllables. During these games, participants are actively discussing options and helping each other to make words rather than focusing on the competition. In programs that focus on women, this group work, besides being fun, helps build a stronger network among the women who normally have few chances to come together and get to know one another.

Research during the design stage of the Nepal program showed that rural adults could understand pictures in a comic book format but were unfamiliar with stories told in a sequence of drawings. In the first five lessons of the Nepal materials, the conventions of a comic book story are presented and practiced as a way to make the reading of comics easier. Some of these stories deal with general social issues or problems in participants' lives, such as an abusive husband or a dishonest money lender, while others focus on specific development themes such as health. The process starts with the four-frame story without words shown in Figure 5. Participants study the story in small groups, and then one member of each group reports what the members have decided is happening in each frame. The objective of this activity is to show that a story can be told by pictures alone, without words. The participants are then asked to imagine what the characters might be thinking or saying. They can even role play the story.

*Figure 5*

In the next step, the participants read a simple dialogue without pictures. Then, the two forms, pictures and dialogue, are put together as in Figure 6. After that, a dialogue similar to the one just learned is presented in a comic book format with the dialogue in bubbles.

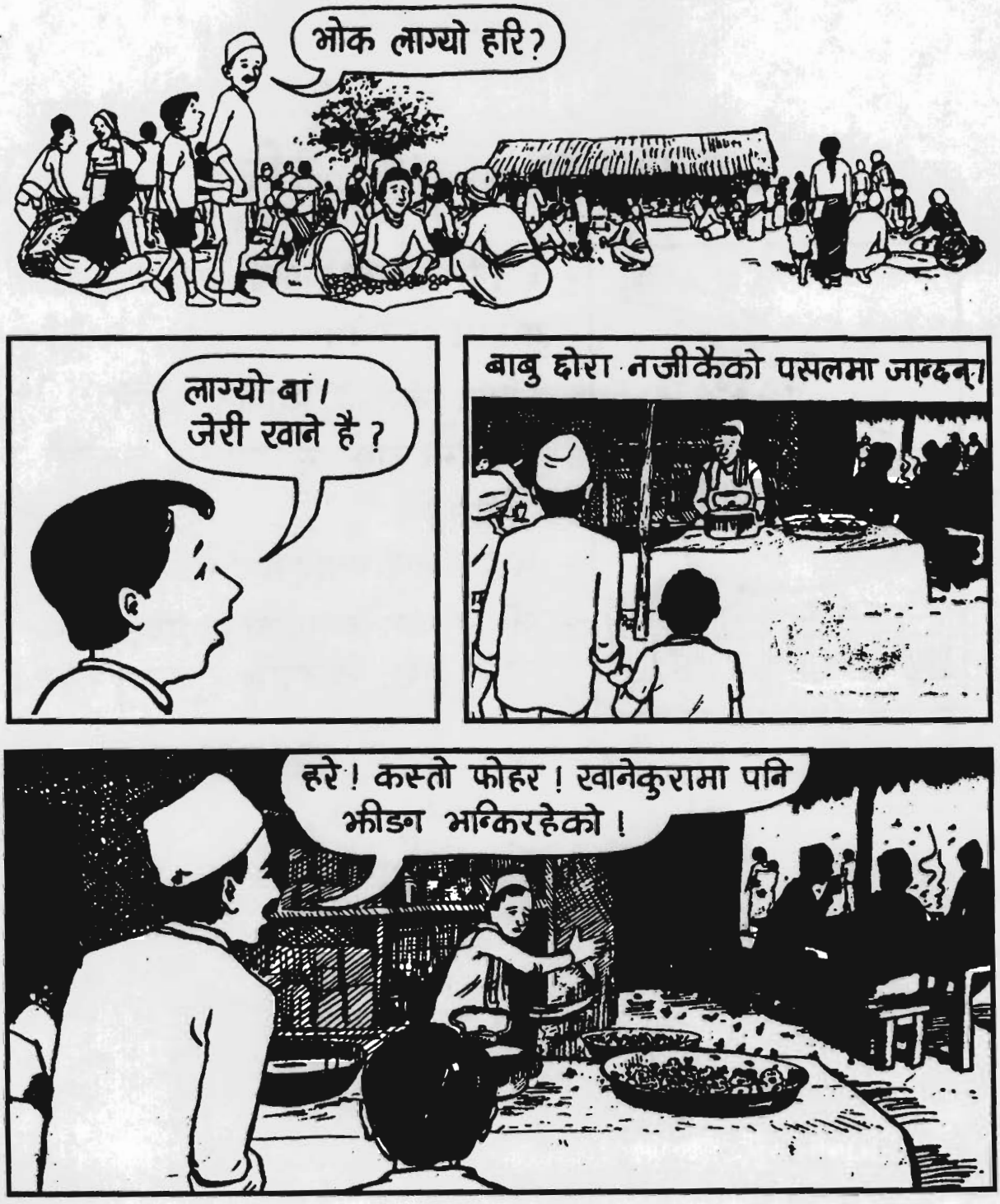
*Figure 6*

Different kinds of dialogue bubbles are introduced later in the materials as shown in Figure 7.

*Figure 7*

Eventually, participants are reading full stories. Figure 8 presents a page from a lesson that focuses on the transmission of disease by flies.

*Figure 8*



Much later in the curriculum, participants begin reading articles that focus on specific issues, such as the one in Figure 9, which explains how to mix oral rehydration solution. Participants are encouraged to get up in front of the group to read and discuss the information presented in the text. This exercise builds oral presentation skills while reinforcing what has been learned about the content.

*Figure 9*

# जीवन जल बनाउने तरिका

- ६ गिलास सफा पानी एउटा सफा भाँडामा राख्ने ।
- जीवन जलको प्याकेट खोल्ने डेक्चीमा राख्ने र त्यसलाई चम्चाले चलाउने ।
- जीवन जल वनाएपछि नउमाल्ने ।
- जीवन जल वनाएको २४ घण्टासम्म राम्रो हुन्छ, त्यसपछि खुवाउनु हुंदैन ।

New readers must practice recognizing syllables and putting them together to form new words. The AID-funded Ecuador Project[33] developed a number of games that provide this practice, which the Nepal program adapted for use in its literacy classes. The simplest of these games consists of cards with syllables printed on one side. In the beginning of a course, participants play games that require them to match identical syllables. Later, these same cards can be used to play games in which participants build words from the syllables. Cards with words are used to build sight vocabulary or to construct whole sentences.

A good literacy curriculum teaches comprehension as well as oral reading. Participants must be encouraged to discuss the words, sentences, and stories that they encounter in class. The teacher must continually question participants about what they are reading, and later participants should be encouraged to write in response to the readings. Stories that present a common dilemma but do not offer a specific resolution can motivate participants to discuss what they have read. Materials that pose specific questions in the text stimulate participants to answer orally or to discuss answers as a group. For example, one of the stories in the Nepal materials focuses on a woman whose husband steals money for drinking and gambling that she has earned by raising and selling her own vegetables. They have a fight, and the woman leaves her husband and goes home to her parents. Afterwards her husband feels remorse, seeks her out at her parent's house, asks her to return home, and promises that he will stop drinking and gambling. The story ends with her wondering whether she should return to him, as shown in Figure 10. After reading the story, the participants discuss what they have read and talk about what their advice to the woman would be.

*Figure 10*


केही दिन पछि...
मेरो खराब बानी छ। तैंपनि दुःख सहिस् सुन्तली।
बेमानी! म कति सहेर बस्ने तिमी सित?
बीर सुन्तली सित बानी सपार्ने कबुल गर्छ ।
हेर सुन्तली ! म कहिले पनि रक्सी खान्न।
तास नि तास !
तास पनि खेल्दिन। बरु राम्ररी काम गर्छु।
बीरेको कुराले सुन्तली दोमन हुन्दिन् ।
समाप्त

*Writing*

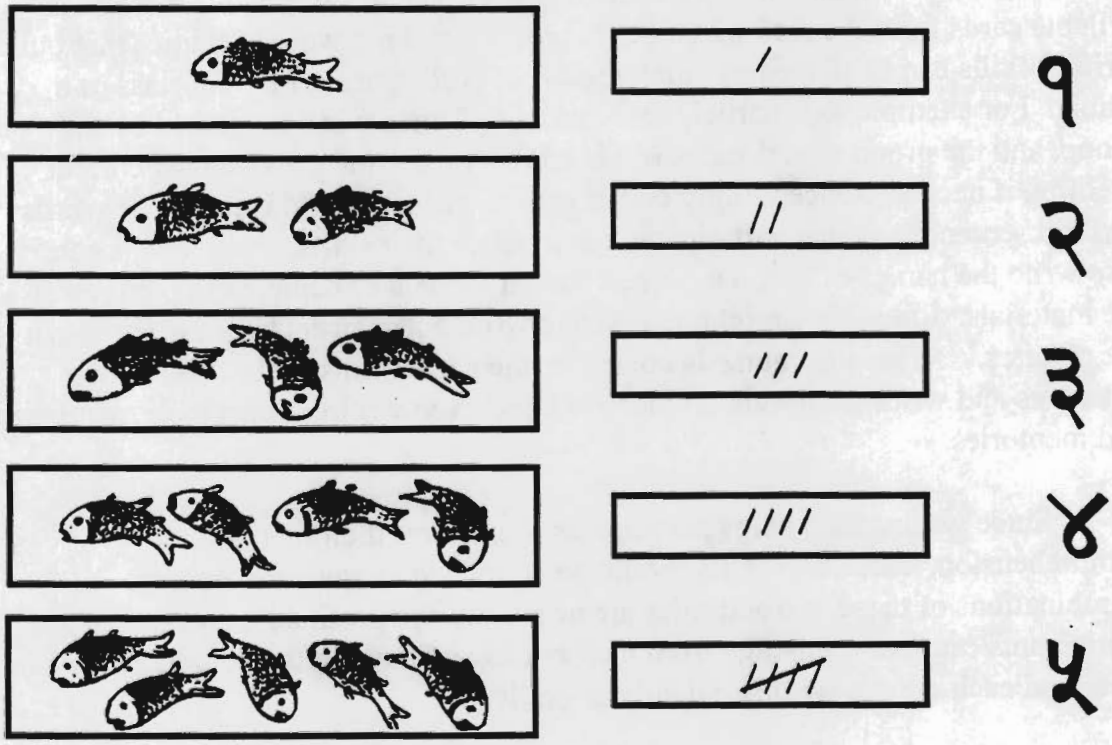
Many adults in Third World countries come to class never having held a pencil. Writing, therefore, should begin with the writing of simple shapes such as X, O and +. After some practice with these shapes, participants can move on to individual letters. While they are mastering these skills, participants can use the syllable cards from the reading games to practice making words. Games that build writing skills can be played by small groups of participants or by the class as a whole. For example, one participant is asked to form a word suggested by the group, and the group then decides if it is correct or not and provides the correct spelling, if needed. Once writing comes easier, teachers can dictate single words and full sentences so that participants can practice their skills. Participants can also write the names of familiar objects shown to them or depicted in pictures in the materials. Later, they might be asked to write out answers to questions about the pictures. Before the course is complete, the participants should be reading questions and writing answers on their own and even writing down their own ideas and memories.

Since writing also helps participants to improve their reading comprehension, these two skills should be combined as students progress. Combinations of these two activities are nearly always profitable. For example, participants can read a passage from their books and then write about it. They can then read each other's writing, silently or orally.

*Mathematics*

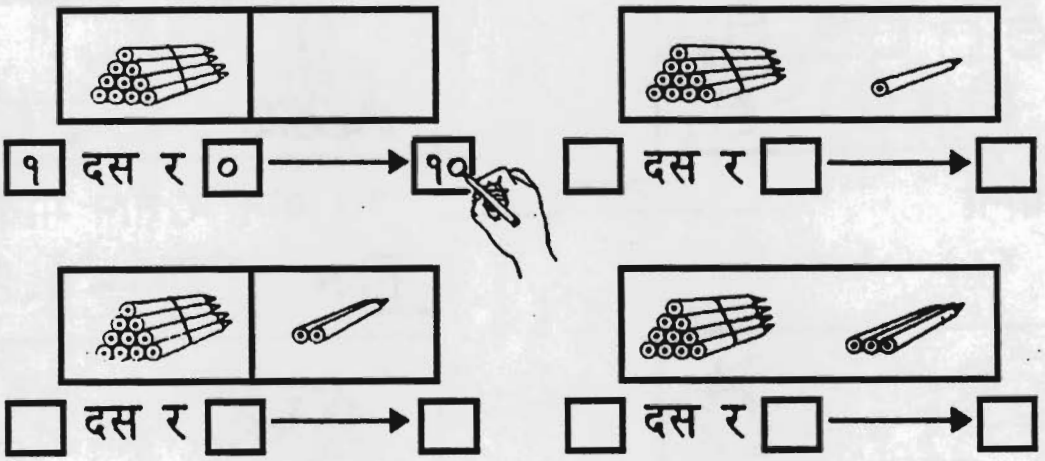
Math requires some of the same skills as reading and writing but requires its own separate skills as well. Early in the Nepal program, participants are taught the number symbols and helped to understand them by counting with real objects or marks on a piece of paper. This practice is similar to learning to arrange letters into words. Figure 11 shows how this appears in the Nepal materials.

*Figure 11*



Operations are usually taught after participants have studied reading and writing for a month so that they are not asked to learn the basics of too many skills at the same time. Addition is introduced first, followed by subtraction, multiplication and division, In the beginning, the math operations are taught within the limits of numbers 1 to 10, but later go to two and three digit numbers. In the Nepal curriculum, addition is taught with exercises that use drawings of objects to help participants understand the concept. This is shown in Figure 12. After an explanation by the teacher and practice in a whole class setting, participants work in small groups. Later, they perform these activities in workbooks. Subtraction is taught using similar activities.

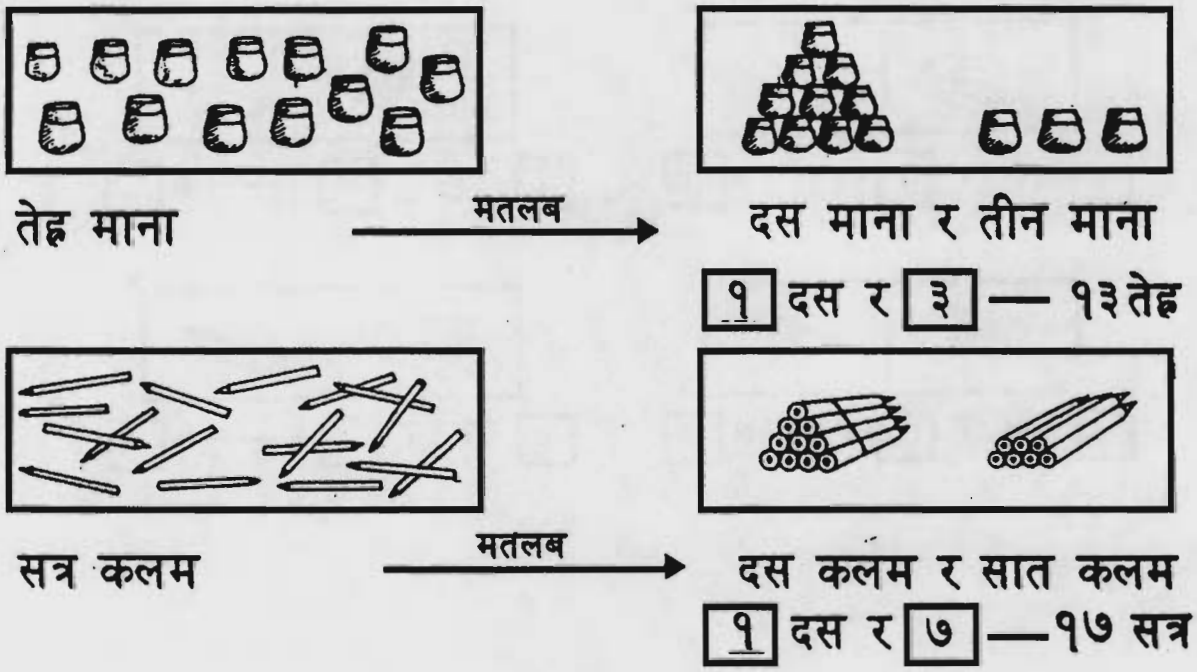
*Figure 12*



Once simple addition and subtraction with numbers up to 10 has been introduced, the relationship between the two operations are practiced. Participants can use grain or pebbles to help solve problems until they have learned to work only with numbers. Math card games, similar to the reading and writing games, help to reinforce these concepts and to support progress to number symbols.

The next step in math learning is to progress to addition and subtraction with two and three digit numbers. Drawings are used to explain the concept of the decimal system, as shown in Figure 13. Participants are encouraged to use fingers and slashes on paper as they learn to work with larger numbers.

*Figure 13*



Multiplication and division, which are more difficult operations to learn, are covered later in the Nepal program. They are taught in the same way with drawings of objects in sets, which are added together. Participants are more comfortable with numbers by this time and can, therefore, move more easily from real objects to paper and pencil.

In a 250 hour course, participants cannot be expected to learn to read, write and perform math at a high level, but exposure to the four basic functions and written numbers is important. Evaluations in Bangladesh and Nepal show that addition is learned easiest, followed by subtraction, multiplication and division.[34]

*Language of Instruction*

Many Third World countries have a national language and a number of local languages. Learning literacy in a local language is easier because the difficulty is not compounded by having to grapple with a less familiar national language at the same time. Furthermore, for minority groups, learning to read and write their mother tongue usually reinforces their culture, history, identity and feeling of self-worth. On the other hand, a single national language can be a binding force that contributes to building national unity within a rich cultural diversity. In addition, many countries cannot afford the costs of literacy programs and reading materials in all their local languages. As is the case with most government issues, language policies are usually decided on political and economic grounds rather than on cultural, psychological, or pedagogical ones.

In Nepal, both the formal school system and the literacy program are conducted in the national language. Studies appear to show that Nepalese people whose mother tongue is different than the national language do about as well as those for whom Nepali is their first language. This may be a result of wide exposure to the national language via radio and in the marketplace. Anecdotal evidence points to increased oral fluency in the national language among people who complete the literacy program. An additional outcome of a literacy program, therefore, can be increased oral fluency in the national language among participants.

## 3. TEACHER RECRUITMENT AND TRAINING

Though a well designed and tested set of materials is essential for a good program, that program's success cannot be assured without a teacher. According

to one study of literacy programs,[35] the most important teacher behavior is simply showing up for class. If the materials are adequate and the teacher shows up for class on a regular basis and makes some attempt to teach, a completion rate of around 50 percent can be expected. In primary schools in poor rural communities, teachers often do not show up to teach, but those schools generally have more than one teacher. The extra students are simply brought into the class of another teacher. Most literacy programs, however, have only one teacher for a class, and so if the teacher does not appear, there is no program for that day. Children are more likely to continue going to school when teacher attendance is sporadic, but adults are likely to quit under such circumstances. Teacher selection, incentives for teacher attendance, and monitoring that focuses on teacher attendance can ensure an acceptable level of success. Administrators of the literacy campaign in Burdwan district in India addressed this problem by assigning two volunteer teachers to each class.

The Nepal study[36] also found that the behavior of a teacher towards his or her participants can affect success. In classes with teachers who treated their participants with respect, the drop-out rates were low. In classes with teachers who treated their participants with condescension, the drop-out rates were high. Children are more likely to endure disrespectful behavior, but adults will cease to attend in such cases. The Nepal study found that positive teacher behavior can reduce drop-out rates to 30 percent or less. Respectful behavior can be assured by carefully selecting teachers, training them in appropriate behavior, and monitoring their activities by observing them in class and interviewing participants.

Teacher training should include both an introduction to concepts of adult learning and an orientation to the specific materials and instructional approach they will be using. Unfortunately, most programs in poor countries do not have the resources to train for more than two weeks. In this amount of time, teachers cannot be exposed to the entire curriculum or taught to be effective in classroom practice. To address this problem, the program in Nepal provides each teacher with a format for classes that is reflected in a set of lesson plans and trains them in their use. The lesson plans comprise the following four activities for each class:

1. **An introduction** during which the teacher presents information.

2. **Group work** during which students discuss issues or do reading and writing activities.

3. **Games** during which students practice skills and help one another.

4. **Testing** during which both teacher and students check their understanding and progress.

New teachers are introduced to these four ways of teaching by participating in two mock lessons using Arabic script. In this way, new teachers experience a lesson as an adult participant might. The mock lessons also allow the future teachers to observe how the trainer handles the four activities of teaching. After the mock lessons, the new teachers watch a trainer teach the actual program materials to a real class. Literacy teachers in Nepal must teach differently from the rote memorization methods they experienced in school. Ample practice time for new teachers is crucial; when the duration of training is limited, trainers should concentrate on practice teaching.

## 4. PARTICIPANT MOTIVATION

Arguments against investment in adult literacy programs quite often focus on participant motivation and the general relevance of literacy to poor rural people. The target group for adult literacy programs is poor people living in communities where literacy may appear to be a low priority to outsiders. Within these communities, however, are people who truly want to learn to read, have the time to study, and are motivated to complete a literacy course. Experience in Nepal has shown that as literacy class participants begin to acquire reading and writing skills, their confidence and motivation increases. What's more, the example of the first classes provides a model of success that can help motivate the next group of participants.

Literacy program organizers can assume that every adult wants to learn to read and write, but even when education is a personal priority, some adults are reticent to participate for any number of reasons. Program planners must invest some of their resources in formative evaluation focused on the reasons why participants are unwilling to join a literacy class or drop-out early and devise activities that lower such barriers to participation. Other development programs, such as childhood immunization and family planning, usually spend a significant percentage of their resources to reach and motivate participants, but too often adult literacy administrators assume that participation is either guaranteed or impossible. In the Burdwan literacy campaign, as with other campaigns in India, the first activities were realistically focused on motivation. The Literacy Campaign used parades and other types of entertainment to attract attention, and then local leaders and politicians gave speeches to urge people to teach and enroll.

## 5. SUPERVISION AND MONITORING

The purpose of supervision is to ensure that classes are being conducted according to plan and that teachers receive the support they need to be effective. Teachers benefit from support and advice during the course of a literacy program. This counsel should be provided by a designated supervisor whose role is to visit the classes several times a month to check on the progress of the classes. When supervisors visit, they should observe the entire class, answer the teacher's questions, solve logistical problems, and record class data on a form or in a notebook. The supervisor can usually determine if the class is going well by talking with participants and their family and friends. The supervisor must be assigned authority to make changes in case the class is not going well. Teacher and participant attendance, teaching style, and participant progress are the primary issues on which supervision and monitoring should be focused. If these elements are strong, then additional time can be spent on helping the teacher and participants to discuss and solve any remaining class problems.

Supervisors need training to be effective mentors to teachers. In Nepal, supervisors attend a five-day training session during which they are introduced to the objectives of the literacy program, approaches to adult literacy education, the roles of the supervisor, and indicators and expectations of effective supervision. After a hands-on orientation to the curriculum, the teacher's guide book, and the instructional methodology, the supervisors receive practical training in such skills as open-ended questioning and giving feedback.

Supervisors need to be supervised as well. The implementing agency has the responsibility to ensure that supervisors, themselves, are doing their jobs. This can be accomplished through spot checks on supervisors' activities.

In Nepal, supervision is carried out in many different ways. In some programs, local school teachers or headmasters do the supervision. In others, NGO staff perform this task. All have been successful. Close connection of the supervisor to the community and oversight by the implementing agency have been identified as key to success.

## 6. CONNECTION TO OTHER DEVELOPMENT ACTIVITIES

If learning to read were easy, requiring only 20 or 30 hours of time, almost every illiterate adult would be willing to put in the time and effort needed to accomplish this task. For most adults (and children as well), learning to read and

write takes a lot of time and effort, and after a few weeks of study, motivation can wane. Linking education to real problems and solutions helps provide the additional motivation needed to persevere to the end of the course; it can also improve the quality of participants' lives.

Adults who persevere and complete a literacy program are people who would be likely to succeed in other activities. As mentioned earlier, literacy classes serve as a selection process for identifying the best people to recruit for development projects in the community. Connecting adult literacy programs to development activities motivates adult participants, and the literacy skills acquired in the class have a positive impact on the development activity.

Despite the obvious mutual benefits, deliberate efforts must be made to link development activities with literacy programs. Integrated programs have the best chance of success in connecting participants to other activities that may improve their lives when there is a direct partnership with development agencies. For example, local personnel from development agencies could visit the class or become involved in the program as a supervisor or teacher.

In Nepal, staff from other agencies such as health or agriculture provided input into the design of the materials. In some of the integrated programs, staff from health, family planning, or credit agencies make presentations in class and participate in follow-up activities. Some NGOs make completion of the literacy class a prerequisite for participation in other development activities.

## 7. NGO/GOVERNMENT COLLABORATION

Adult literacy programs offer an opportunity for collaboration among national government, local government and NGOs. Some aspects of a literacy program are best directed at a national level; for example, developing and printing materials and training teacher-trainers logically benefit from the economies of scale that a national effort can provide. Most individual NGOs do not have the resources needed to develop and field test a really comprehensive set of literacy materials or to maintain a quality teacher-training department. A national training staff, however, can train local staff to take on this specific role.

One of the primary strengths of NGOs is their direct connection to the communities they serve. They can also make decisions more quickly than national governments and mobilize all of their resources for a single effort, while national governments must slowly address several goals at the same time. NGOs,

therefore, are usually more efficient and effective at recruiting teachers and supervising classes. Some local government structures can approximate the advantages of NGOs. In such cases, passing implementation responsibility to their level can produce the same results as NGOs.

In Nepal, the initial collaborations between government and NGOs were hobbled by suspicions on both sides; however, the high quality and low cost of the materials and the free training of teacher-trainers convinced some NGOs to try the government literacy program. The positive results obtained by these NGOs encouraged other NGOs to begin including literacy training to their missions. The government saw that the number of people being served was increasing with little additional cost and, therefore, began to encourage other NGOs to participate. NGOs found that they could add materials and lessons that focused on their particular interests while depending on the government program to cover both literacy and the basic issues of community development. Eventually, many NGOs decided to begin their work in a community with a literacy program because it was effective in providing basic skills education to adults, served an expressed need, and acted as a good mechanism for selecting and training the community members with whom they would work.

## 8. POST-LITERACY ACTIVITIES

One concern about adult literacy classes is that acquired literacy skills will quickly erode. Critics point to the lack of reading material in rural villages as one cause. Very little research exists that addresses this issue, but a review of the existing studies reveals that while some adults do experience a partial loss of skills, most adults retain their skill, and some even improve it.[37] This same review concludes that an organized program that provides new readers with simple and interesting reading materials can help adults to improve their reading, writing, and even their math skills after the end of their programs. Though very little data is available, the review found that a regular periodical, such as a newspaper, appears to be most successful for maintaining skills and that a connection to a radio program that exposes adults to the concepts and vocabulary covered in the reading material can increase the impact.

Common sense supports the notion that if interesting reading materials are available, adults will use their reading skills and improve them through practice. In addition, national governments are investing an enormous amount of money to teach children how to read in primary school, and providing reading materials is a way to build on that investment. Both adult literacy class participants and adults

who have learned to read in primary school can improve those skills at very little unit cost through an organized post-literacy program.

A recent review by the British ODA [38] concludes that post-literacy programs should be designed both to provide reading materials and to assist people with limited literacy skills to cope with real situations in which their skills can benefit them. The ODA study suggests that these activities should begin during the literacy program. Teachers should use existing reading materials, such as a family planning poster, instructions on a packet of oral rehydration salts, a government form, or a newspaper to supplement the specially prepared materials. As the literacy course progresses, existing materials should gradually supplant all other texts.

Effective post-literacy materials rightly focus on content. Unfortunately, the focus on content sometimes produces materials that are dry and uninteresting unless the content is of immediate and urgent need. Most children practice their skills by reading stories, and stories are also appropriate for adults. Good stories can provide motivation to read, and content can be integrated into the narrative. Stories that have no development content, though, should also be part of a post-literacy program, since any reading practice improves skills. Libraries and simple newspapers are the usual approach to providing opportunities to use literacy skills, but several other creative options have been successful including comic book rental kiosks and local blackboard newspapers. All of these approaches lead to improved skills that can be used later when they are needed for more functional content.

# Costs and Financing

Adult literacy efforts are usually under-funded in relation to the size of the population in need. Unfortunately, the usual response to this situation is an attempt to serve the entire population with the inadequate funds rather than a portion of the population well. Literacy programs should be based on a commitment to serve only the number of people for whom sufficient funding is available.

The major development costs are those associated with the design and field testing of the materials, curriculum, and teacher training, which can take several years to accomplish, if done well. This development should be assigned to a team of materials developers and consultants who address specific technical needs. The scope of the field test must be limited in the first year so that the development team can observe classes every day and teach some of them as well. In the second and third years, a much larger group of classes can use the materials. Some of these field test costs can, therefore, be attributed to the per participant recurrent costs of literacy classes because participants in these early classes do learn how to read and write. Financing the costs associated with the development of a literacy program can be attractive to donor agencies if they understand that the return on their investment increases as the literacy program uses the materials over many years.

Recurrent costs are most easily calculated on a per class basis. Since class size can vary, per person costs are usually an approximation. The major expense is the teacher's salary, which needs to be sufficient to motivate the teacher to do his or her job. Other costs include classroom equipment, lighting, literacy texts and writing materials. A portion of monitoring, supervision, evaluation, and general administration costs should also be attributed to each class.

Some donor agencies are interested in supporting these recurrent costs but want national governments to take on part of this responsibility as a show of commitment. NGOs and local government agencies can sometimes provide cash to pay for some of these costs or provide in-kind support, such as volunteer teachers or administrative support, which lowers the unit cost for national governments.

In Nepal, the development costs of the program were supported by both the Ministry of Education and USAID. Several donor agencies, including UNFPA and Unicef, also contributed to specific aspects of the development costs that were

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of interest to them. The Ministry of Education is supporting approximately 30 percent of the recurrent costs while donor agencies such as USAID and Unicef are supporting 60 percent. The remaining 10 percent are supported by NGO and local government contributions.

# Evaluation and MIS

While researchers have not yet developed and tested a strong evaluation and MIS system for adult literacy, H.S. Bhola has proposed an excellent model that limits the quantitative data to the basic information needed to serve the policy and management system while providing rich qualitative data to help improve a program during implementation.[39] Recently, the need to show impact to donor agencies has demanded that evaluation measure literacy as an outcome and also gauge gains in other areas of knowledge and behavior, such as health and family planning. The following sections describe the sorts of data that should be collected.

## MONITORING DATA

Program plannners should know the number of participants that begin and complete their program each year and the skill levels they have achieved. Given the nature of life in rural Third World villages, some participants drop out before completing the course. If some of these drop-outs have acquired a useable skill, they can be counted as having completed the course even if they are not there on the last day, but locating and testing dropouts can be difficult. Because teacher attendance and participant time on task appear to be key indicators of successful programs, data on teacher and participant attendance should be collected. This limited data is usually enough to provide policy makers with a measure of the success and coverage of a program.

Measurements of skill are usually based on a written test, but adult participants have usually never taken one, and test taking is a skill that must be learned through practice. To familiarize participants with testing, teachers should administer practice tests while participants are learning and again just before they are tested at the end of class. Other approaches to measuring skill, such as portfolio assessment, where each participant builds a body of work that is judged by a tester, are usually too cumbersome to use in most Third World adult literacy settings.

Historically, the gathering of monitoring data in literacy programs is notoriously inefficient. Tests are improperly administered and recorded, attendance logs are not always kept up, and there is always pressure on teachers and supervisors to show a successful outcome. Any national system, therefore, should maintain a subsample population that is surveyed in a controlled and

managed way so that the subsample data can validate the larger data set.

## QUALITATIVE DATA

Monitoring data can give program managers a measure of success rate and coverage, but they provide no directions for improving the program. Only qualitative research can identify specific factors that are leading to success and failure in a program. Direct observations, interviews, and focus groups with teachers, participants and nonparticipants can provide this important information.

## IMPACT DATA

Monitoring data is also limited to literacy skill levels measured at the end of a class cycle. But what of the impact of learned skills over time? Administrators should collect more elaborate impact data based on a research model that compares a random sample of participants several years after they have completed a class to a control group that did not attend class. Of course, a longitudinal study that tracks participants from the beginning of class until several years later would provide much richer and informative data, but this approach is extremely difficult in rural Third World settings. A cross-sectional study is much easier, but can be hampered by problems such as locating past participants.

# Case Study of Nepal

The development of the Nepal Literacy Program[40] began in 1978 with basic research into how to provide nonformal education in rural villages. This research helped ensure a strong foundation for the literacy program. Because there were few people in the country with real skills and experience in NFE, the actual project began by training new staff; however, the experience of making the program work provided most valuable training for staff.

During the initial two years, project staff focused on identifying what rural people wanted to learn, from their perspective, and needed to learn, from the perspective of development experts, while experimenting with ways to present this material. During this pilot phase, project staff were not convinced that literacy needed to be part of the program. Rather, they developed an innovative and interesting set of lessons that engaged participants in discussion and action around a wide range of development topics. Feedback from participants, though, clearly showed that they wanted to learn how to read and write as well.

During the third year, the project staff developed a set of literacy materials and field tested them in several sites. Once the materials were ready, limited implementation began. Each year the materials, teacher training approach, and implementation plans were reviewed and revised. As the materials improved, they attracted attention from international NGOs and the limited number of local NGOs that existed at that time. Several large, integrated rural development projects also began using the materials. By the mid 1980s, these NGOs and projects were supporting more than half of the literacy classes. Among other benefits, these agencies discovered that the literacy programs were excellent starting points for their work at the village level. The literacy programs were easy to start, as the materials and training were already well developed, and literacy was a commonly expressed need in every community. The participants who successfully completed the literacy classes also proved to be the best people with whom to work in the community. In part, the literacy class acted as a selection mechanism to identify the best people with whom to work. Besides training those people in literacy skills, the course helped them to be more successful in other activities. The literacy materials also prepared people to consider and understand the development issues that these agencies wanted to address.

By the late 1980s, the national program was serving more than 50,000 people a year. The Ministry of Education undertook an effort to increase that to

500,000. To that end, the Ministry experimented with intensive large scale campaigns while encouraging NGOs and other development agencies to take on a much bigger responsibility. A few years later, Nepal changed its form of government to one that was democratic, but this process delayed the expansion of the literacy program. By the early 1990s, the government was ready to begin expansion again, by then with the help of hundreds of new NGOs that emerged from the democratization process.

Expansion of both the government and NGO programs has brought the number of participants served to over 500,000 a year in 1995. With a total illiterate population of approximately 10 million, the present program will take 20 years to complete. Though a larger effort might accomplish this task more quickly, the present program, or one that is slightly larger, appears to be ideal for Nepal. An attempt to serve the whole illiterate population in a much shorter time period could lead to an under-funded and poorly administered program that would eventually fail.

A good deal of innovation has taken place during the last five years. Though most programs still focus on adults in the standard six month course, NGOs and government agencies have adapted the materials and program design to serve children who have not gone to school. Several agencies have extended the basic six-month course to provide additional literacy instruction and practice focused on health or credit and savings. In addition, the government has experimented with a campaign approach.

## CHILD LITERACY

Many Nepalese children do not attend school or drop out in the first few years. Recognizing this problem, ActionAid, a British NGO, began to experiment with adapting the adult materials for children. This experiment was taken up by the Ministry of Education and Unicef, and programs are now serving almost 100,000 children each year. The Out-of-School Children (OSP) program serves children who are not attending formal school with the goal of bringing them into the school system at grade 3. With assistance from Unicef, this program is now being extended to a two-year program that will approximate the five years of primary school.

## INTEGRATED PROGRAMS

Several NGOs have initiated programs that supplement the basic six-month course. One of the most successful is the Health Education and Adult Literacy program (HEAL).[41] The HEAL program is built around the participation of a community health volunteer (CHV), a local woman recruited by the Ministry of Health to play a role in health promotion in her community. This integrated literacy program has three phases. In the first, the basic six-month literacy course is supplemented with specific health lessons. In the second, the class continues to meet with a teacher to read and discuss a special health text prepared for the program. The third phase is a 12-month continuing education program where participants come together without a teacher to read and discuss specially prepared materials.

The HEAL model is now being adapted for a program run by an American NGO, CEDPA. In this program, the six month course is augmented with special lessons that focus on family planning. During the next three months, the participants follow the curriculum developed for the second phase of the HEAL project. Save the Children/USA has developed a family literacy program that provides newly literate mothers with a "Baby Book," which they use to keep track of their children's immunizations, illnesses, stages of development, and other important events.

With funding from the Ford Foundation, World Education is developing the Women's Literacy, Savings and Credit program that adapts the HEAL model to address financial services for poor rural women. This new program provides supplementary lessons for the six-month basic literacy course that focus on the establishment of savings groups and the development of women's empowerment. At the end of the course the women in the class continue on with a three month course where they use their new literacy skills to learn more about group development, financial services, savings and credit. The participants then move on to read and discuss materials that focus on business skills. The successful participants form savings groups or go on to use credit to finance micro enterprises.

## CAMPAIGN APPROACH

From 1988 to 1990, the Ministry of Education experimented with a literacy campaign approach in two geographic areas of Nepal. These experiments demonstrated the benefits of an intensive effort focused on specific geographic

areas. The revolution and subsequent elections have delayed development of the campaign approach, but a recent study tour of India allowed Ministry of Education officials to learn from the experience of Burdwan district. Consequently, the campaign approach may be tried again soon.

# Research and Development

Research in the field of adult literacy is needed in four critical areas: (1) to determine the true size and nature of the population that needs these services, (2) to determine what constitutes a successful program and how to measure it, (3) to articulate the factors that lead to success, and (4) to measure the impact on the lives of participants. Unfortunately, research on adult literacy has not received much funding, and literacy organizations do not have additional resources to support research.

Most literacy statistics on the size and nature of the target population come from government estimates that depend on national censuses and assumptions about the efficiency of the formal primary school system. In some countries, a person who has been to one year of school is considered literate, while in others self-reporting of literacy status is allowed. The Lesotho Distance Teaching Center prepared a simple test of reading, writing, and math and tested a small but randomly selected sample. This small survey indicated that government statistics were underestimating the size of the illiterate population. Rigorous studies that sampled a country's population would provide much better literacy statistics than the ones that now exist.

One reason funding has not expanded for adult literacy programs in most countries is that previous programs have been judged as failures. Program evaluators should take a close look at existing literacy programs in order to identify an acceptable drop-out rate and level of skill acquisition for different types of programs. Once clear definitions of success are articulated, evaluators can design methods for identifying which programs meet those standards. Clear measures of success will make it possible to identify factors that lead to success.

Most of the existing information about the effectiveness and quality of adult literacy programs comes from evaluations, either internal or external, conducted at the conclusion of projects. These evaluations generally provide information about that particular project and include information on how many people were served, or how efficiently the training, supervision and administration were managed. A standard framework that focused these evaluations on important elements of a program would provide more useful information. Studies that compare the knowledge, attitudes and practices of learners who participated in literacy programs conducted under different conditions or by different organizations would also be useful to understanding effectiveness. For example, if teacher behavior is a

critical element, data on which kind of training best prepares and supports a teacher to behave respectfully and supportively to students would be very useful. Donor agencies, however, must be willing to support these research costs with the understanding that a small amount of additional resources can provide valuable information that will improve the effectiveness of future programs.

Increasingly, adult literacy providers will be asked to substantiate the impact of literacy on other areas of adults' lives, such as health, family planning, or income generation. Literacy providers should be prepared to report not only knowledge and attitude changes but also actual behavioral changes. This task can be challenging for two reasons: first, literacy providers have long concerned themselves largely with educational outcomes, such as knowledge and skills gained, or even with intent to change practice, but not with actual changes in learners' behavior in either literacy (such as reading habits or use of writing) or in other areas of their lives (such as voting or health care); second, behavioral changes may not appear immediately after the adult has completed the literacy course. In addition, to determine that a behavioral change is the result of the literacy intervention and not some other factor requires data about a participant's behavior before the literacy course. Collecting such data is ordinarily beyond the scope of literacy project work; however, public health professionals and other types of development workers traditionally focus on behavioral change. Literacy practitioners should consult and collaborate with them in order to make use of reliable but feasible methods, such as Rapid Rural Appraisal, which might be adapted for use by adult literacy providers.

Researchers should collect both qualitative information (case studies, interviews, focus groups) and quantitative information (literacy achievement scores, knowledge and attitude surveys) to substantiate the extent to which literacy skills and knowledge are acquired and used. Through either case studies and surveys with learners, and/or interviews with others in the community who are in contact with adult learners, researchers can gather information about some of the more intangible results of literacy, such as increases in empowerment and self-esteem.

Nowadays, educators interested in promoting women's education are experimenting with more concrete measures of gauging changes in women's lives as a result of literacy, including using participatory research instruments, which involve women directly in defining the research focus and collecting the data. These methods hold promise for more accurately determining the impact of adult literacy programs for both sexes. However, it is still generally true that funders typically favor more quantitative, statistically-based research to research that

provides qualitative conclusions. The strongest research design is one that incorporates both quantitative and qualitative methodologies.

In research on adult literacy, reliability of data should be the primary concern rather than the general applicability of the sample. Because of the difficult nature of conducting research in most Third World countries, it is best that research studies are focused on one or two questions and that a limited number of researchers are involved in collecting the data. Longitudinal studies, which look more closely over a longer period of time at a smaller number of subjects, are preferable when looking at impact of literacy.

Researchers need simple but reliable literacy test instruments that gauge not only reading, writing, and math skills but also knowledge gain, along with some measure of functional literacy skill and usage. A great boon to research would be the use of such an instrument by all literacy organizations within a country so that the results could be compared across organizations. The data from a commonly-used instrument would serve, for example, as a touchstone against which innovative programs (for example, those which integrate or link literacy with health, family planning or income generation) could gauge the additional benefit of such interventions.

# Conclusion

There are hundreds of millions of adults who have never gone to school and tens of millions of children who do not attend school or who will drop out before they acquire literacy skills. For these reasons, the size of the illiterate population will probably stay near one billion over the next two decades. The majority of these people can learn to read and write if given an opportunity. The experience in Nepal shows that such an opportunity can be provided.

The expense involved in providing quality literacy programs in Third World settings is small compared to that of formal education; furthermore, arguments that these resources should be used for the formal school system make little sense because educated parents are the foundation of an effective formal school system. If resources are sufficient to ensure the success of adult literacy programs, those same resources will contribute to the efficiency of the formal school system, the public health system, family planning programs, and other development efforts. A balanced program that funds research, evaluation, program design, and implementation is needed in every country with high rates of illiteracy if social progress is to move ahead quickly. Donor agencies, even those that do not have education as their focus, should support the development of successful adult literacy programs.

Sometime in the next century, there will be a time when the human race passes a historic milestone: a world in which everyone can read. At the present rate, that time will come well after 2050, but a few billion dollars over the next 20 years could bring that moment into the lifetime of the present generation. The benefits of this acceleration of human progress would be immense. At that time, everyone will be able to read the names of the gods before they die.

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