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ABSTRACT

This bulletin contains five essays on the theme of expanding the challenge of improving the quality of education to encompass the curricular, administrative, institutional, and teaching levels. The articles include: (1) "Educational Assessment Systems in Latin America: A Review of Issues and Recent Experience" (Robin Horn; Laurence Wolf; Eduardo Velez); (2) "Programme to Improve the Quality of Primary Schools in Poor Areas: A Chilean Experience" (MINEDUC Chile); (3) "Bilingual Education Beyond National Frontiers, Bolivian-Peruvian Cooperation" (Luis Enrique Lopez; Lucia D'Emilio); (4) "New Assignments for Technical and Professional High School Education: Guidelines and Strategies" (Maria de Ibarrola); and (5) "Functional Illiteracy Requirements in Youth and Adults: Education and Work in a Small Developing State" (Olabisi Kuboni). (EH)

BULLETIN

THE MAJOR PROJECT OF EDUCATION

In Latin America and the Caribbean

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REGIONAL OFFICE FOR EDUCATION IN LATIN AMERICA AND THE CARIBBEAN

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THE MAJOR PROJECT OF EDUCATION

in Latin America and the Caribbean

Summary

BULLETIN 27

Santiago, Chile, April 1992

In order that this bulletin
may reflect in as complete and timely manner as possible
the initiatives and activities carried out
by each and all the countries of the region
in relation to the Major Project of
Education in Latin America and the Caribbean,
pertinent official bodies are invited
to send to
the UNESCO Regional Office for Education in
Latin America and the Caribbean
all information they wish
to have published in this bulletin.

The publication of this bulletin has been made possible by the voluntary contribution of the Spanish Government to the activities of the Major Project of Education in Latin America and the Caribbean.

Presentation

Strategies to improve the quality of education are taking on multidimensional qualities. Consensus has broadened appreciably on the need to deal with this challenge at a curricular, institutional, administrative and teaching level. This issue of the Bulletin contains a series of contributions on this theme.

First, we present a study by Robin Horn, Laurence Wolff and Eduardo Velez that summarizes the techniques which have proven most successful in implementing and using educational evaluation systems, and that suggests some future courses of actions in this field. It is based on the premise that information obtained through educational evaluation is so positive for the system that it is possible to reap enormous benefits if it is linked to a broader and more comprehensive programme for enhancing quality.

This provides the framework for the report "Programmes for improving quality in elementary schools in popular sectors", in which the Ministry of Education of Chile gives an account of its recent efforts in this area. The programme is based on the concept of "positive discrimination". It effectively demonstrates the potential of measurement systems to adequately target compensatory actions for which the central administration is responsible.

Indigenous groups are among the most important target populations of the Major Project. Bilingual intercultural education is a strategy that has proven significantly productive in this respect, from a curricular and methodological standpoint. The article entitled Bilingual education beyond national frontiers, by Luis Enrique López and Lucia D'Emilio, presents the case of the positive horizontal cooperation between two countries in the region, working to implement an intercultural bilingual education programme for Aymara- and Quechua-speaking peasant populations.

The article by María de Ibarrola analyzes the new tasks that lie ahead for technical and professional education at high school level in the region. She recalls the extensive and costly experience that exists on the subject, and stresses the urgency of recouping it. This researcher states that high school technical education institutions require a new educational administration which clearly pinpoints the actors responsible for bringing about innovation and change, and which

pursues the building of institutional levels that guarantee the quality of new technological training.

Olabisi Kuboni presents an analysis of the relation between education and work from the standpoint of functional illiteracy among youths and adults in Trinidad and Tobago. His article sets forth the need to increase the target population's capacity to integrate with its socio-economic environment. At the same time he mentions and discusses some specific skills.

As usual, we also include the section on OREALC Activities.

EDUCATIONAL ASSESSMENT SYSTEMS IN LATIN AMERICA. A REVIEW OF ISSUES AND RECENT EXPERIENCE

Robin Horn, Laurence Wolff and Eduardo Vélez*

The main objective of this review is to inform education decision-makers in Latin America of the range and complexity of the issues involved in developing and implementing national educational assessment systems in this region. This review summarizes best practice in implementing and utilizing educational assessments, reviews the experience of several Latin American countries in implementing national assessment systems, and comes up with a set of concrete suggestions for the future of educational assessment systems for Latin American countries. These suggestions are designed to help ensure that educational assessments can in fact influence policy makers and teachers to improve the quality of education. This review is timely because many countries in Latin America and the Caribbean are currently embarking on programs to assess educational achievement in primary education. Given their economic problems and resulting constraints on public finances, these countries need to direct their resources toward cost effective investments, programs, and interventions in education. Specifically, two countries, Chile and Costa Rica, have conducted national assessments for the primary level. Honduras, the Dominican Republic, Brazil, Jamaica, Colombia and Mexico have undertaken or are planning a variety of somewhat more limited assessments of student learning. These countries, as well as Belize, Ecuador, Northeast Brazil and the state of Sao Paulo, are considering establishing larger, more systematic assessment systems.

Definitions

National assessments of student learning measure the educational performance of a nation's or region's students and evaluate the progress of the schools, school districts, municipalities, or states in achieving curricular or other goals of the education system. National assessment systems differ from national certification examination systems. The objective of national certification examinations is to identify students who have successfully completed a certain level of education or, alternatively, to select completers for entry into the next higher educational level (e.g., from primary to secondary). To meet their objective, national examination systems must use the examination instrument to evaluate all students seeking a completion certificate or seeking selection into the next higher level of education, for which there may be a restricted number of openings.

Testing for selection occurs in many Latin American countries at the end of the secondary cycle, as a prerequisite for entrance to universities. These testing and selection examinations

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[1] Case studies on educational assessments in Latin America were prepared by Joaquín Morales Frías (Chile), Blanca Lilia Caro (Colombia), Juan M. Esquivel (Costa Rica), and María del Rayo Jiménez Victoria (Mexico).

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generally are organized in such as way so as to provide as little feedback as possible to students and teachers, beyond giving them a grade. This is in part because the designers of such tests are especially concerned with security and test administration. Generally, Latin America countries do not have national or regional tests at the primary level for purposes of certification or selection to secondary education. The exceptions include Mexico, the Anglophone Caribbean countries, and the Bogotá metropolitan area of Colombia (for entrance into public secondary schools in Bogotá). In most of Latin America individual teachers make judgments regarding whether children will pass or fail at all levels of primary education.

If tests are already being administered for purposes of certification or selection, it may be possible to redesign or restructure the instruments and the overall design in such a way as to serve some of the same objectives of an assessment system. In fact, the first step in considering whether to set up an assessment system in a country is to determine whether existing certification and selection tests can be adapted to serve assessment objectives. Piggy-backing on an existing testing program may be a cost-effective alternative to building a parallel assessment system, and should not be over-looked in any strategy for achieving national educational goals.

It is also important to differentiate between educational assessments, educational statistics, and educational research, all of which provide information of potential use to policy makers and practitioners. Typical educational statistics systems often cover such elements as enrollments by grade and age, numbers of student grade repetitions, estimates of student flow, teacher characteristics, physical facilities, equipment and materials, and educational costs. The advent of the personal computer means that more data can be gathered within a shorter period of time, and fairly sophisticated analyses can be undertaken to guide policy makers. Latin American countries, as is the case with most developing countries, are only now beginning to go beyond the rudimentary phase of educational statistical analysis.

Educational research is defined as the rigorous testing of hypotheses about causal relationships. In particular, much educational research attempts to measure the determinants of student learning and achievement. State of the art educational research requires complex sampling designs, sophisticated analytical expertise, and as well as sophisticated computer modeling tools. Educational research, especially when undertaken on a longitudinal framework, can be quite expensive. In principle the aim of educational assessments is not to support the testing of hypotheses, although such hypothesis testing can well be incorporated into them. In practice, as discussed below, the data developed by an assessment is so rich that significant benefits can be achieved if these data are linked with a comprehensive research program.

How Educational Assessments Can Be Used

Obviously, by itself, measuring student learning does not yield increased achievement any more than weighing grain will yield increased agricultural output. It is, however, a necessary condition to establishing quantitative targets, assessing the tradeoffs of alternative allocation strategies, input combinations, and production technologies, and allocating resources and effort to achieve established targets. The potential uses of educational assessment are described below. Many of the uses of assessments can be found in the United States, which has the longest history and experience with assessments.

Using Assessments to Garner Public Support for Increased Efforts to Improve Educational Quality

An educational assessment system that measures student learning and reports on how well student learning matches clearly stated and understood performance standards helps the public understand what students know, and allows them to track progress. Policy-makers can

set clear targets, and the public can monitor progress toward these targets. In particular, if the system is found to be deficient, then additional funding and changed emphases can be justified.

If assessment learning targets are set too high, then the public may become disillusioned when reports indicate that very few students or schools (or only particular groups of student or schools) are achieving the targets. This dimension suggests careful planning. Involving a broad spectrum of well respected educationalists and leaders in the goal setting exercises, as well as in the assessment policy board, and eliciting the participation of the press throughout the process, will help assure the public that the national assessment system and the national educational goals are developed in a fair and open process. It also suggests that the audience(s) for the assessment reports should be clearly identified from the start, even before the assessment instruments are designed, to assure that the kinds of questions likely to be raised by each audience can be answered by the assessment.

Using the Backwash Effects of an Assessment

An indirect way in which assessments can affect teaching and learning is through their "backwash" effects. Backwash effects is the term used to describe the effects that an examination has on what teachers teach and what students make the effort to learn. "Teaching to the test" exemplifies backwash effects. Backwash effects are always present in a school system that relies on an examination to certify completion of one level of education or to determine selection into a subsequent level of schooling (i.e., secondary to post-secondary), or into a particular training program (nursing or mechanical training). In many instances, the backwash effects of a critically important selection examination reach back through many years of schooling, such as a university entrance examination that effects teaching from upper secondary down through primary school. If the examination is designed to measure the entire curricular domain, with a variety of academic and nonacademic applications, and higher order thinking skills, then it would make sense to capitalize on the backwash effects of the examination.

Assessments, as discussed above, are not usually combined with selection. Therefore, a sample based assessment system whose outcomes do not yield consequences for the students taking the assessment tests, may not produce any backwash effects *per se*. Nonetheless, the assessment system may be designed to encourage changes in the behavior of students or teachers similar to those yielded by backwash effects. First, if students, teachers, and parents take educational examinations seriously, then assessments may well exert powerful influence on what is taught and what is learned. By designing assessment instruments to examine the skills and knowledge areas that all students should acquire, rather than only those skills relevant for students likely to advance into the next level of the system, the schools will increasingly find themselves providing instruction that benefits all children. Second, assessments may be designed to provide rewards, of financial or other resources, or of prestige which may produce backwash-like effects. Finally, countries may administer assessment instruments to all students in all schools and then seek to combine assessment and certification objectives in a single system, measuring the achievement of national educational targets while simultaneously assuring backwash effects.

A variation on the backwash effects of testing would be "minimum competency" testing. For example, standards in the state of Alabama were set indicating the minimal level of performance on the Alabama assessment required of graduating secondary school students in each subject area. The minimal standards targets were not established to punish poorly performing students. Rather, they were designed to help district officers and school principals monitor the progress of Alabama students and to make sure that they achieve a reasonable standard of education. Research in Alabama shows that students at all ability levels, even advanced students, regis-

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tered marked improvements in assessment performance.

Diagnosing and Treating Learning Problems and Improving Instructional Design and Teacher Training

Another way in which assessment systems can be designed to improve educational practice is by providing content diagnosis and specific feedback from the assessment system to teachers, parents, students, and the community. By supplementing the feedback system with an analysis of the types of errors students make and with suggestions on techniques for improved teaching to help students avoid these types of errors, the educational assessment system can have a direct and positive influence on student learning.

This was done with the Kenya examination reform implemented in the late 1970s, with successful results (Somerset, 1987)-a classic case of utilizing a selection system to meet assessment-type objectives. First the examinations were revised to assess a broader range of skills and higher order thinking skills. Then these new instruments replaced the older examinations which were mainly measures of students' rote recall. Subsequently, individual examination items were carefully analyzed to determine the types of skills in which Kenyan students were weak and appeared to consistently lack comprehension. For instance, by means of an analysis of the examination items, it was discovered that while students were measuring up well in the area of formal mathematics theory, they were not capable of applying their math skills to everyday situations. It was suggested that the curriculum and teachers were being too theoretical and were devoting too little time to practical applications. In one issue of the newsletter regularly distributed to the teachers as part of the examination reform program, teachers were advised of the problem, were given examples of the types of errors students were making, and were told of more effective means of teaching the necessary skills. Annex 1 provides an example of the feedback from Kenya. The Kenya feedback system has been criticized as helping students to answer examination questions better rather than improving learning. However, to the extent that examination questions measure fundamental higher level skills this is not a valid criticism.

Similarly educational assessment systems can be used to provide information to educators that can help them improve instructional design and classroom pedagogy. Recently, a number of states in the USA have developed in their assessment system a number of indicators designed to identify and accurately measure performance in a number of narrowly defined subject area domains. In this way, educators can tell if particular practices, teacher training approaches, or curricular materials are effective. Based on this approach, for example, a school system can redesign its in-service teacher training system in a way that the assessment analysis indicates is most effective.

Rewarding Good Performance

Assessments can also be used to reward good performance or help those with bad performance to improve. Results from assessments have been used to hold regions, municipalities, districts, or even schools and school leaders (given the appropriate sample) accountable for performance in a number of states and districts in the USA. Student assessments cannot be used to hold teachers accountable for good teaching because it is not unlikely that differences in the quality of students taught by teachers being evaluated can be statistically controlled (Glass, 1974). For example, in Boston and South Carolina, districts showing significant improvement in assessment scores (taking initial conditions and school social indicators into account) are rewarded with additional finances; those districts that continue to perform below a certain standard are sanctioned by transferring their authority to run their schools to an outside team of experts. Another example was Michigan's 1973 Chapter III plan (for educationally

disadvantaged students). The plan was designed to initially allocate funds on the basis of schools with high numbers of poorly performing students, and then to allocate funds on the basis of student progress from baseline levels.

One of the problems associated with systems of rewards and punishments is that teachers, principals, and districts may have greater incentives to cheat-to record or report higher scores that those which were or would have been actually earned. They can justify cheating if they believe it will help them obtain resources for their students or if they believe that the system is unfair. Obviously, test security would have to be seriously considered when implementing this type of plan. Another problem associated with using accountability as a mechanism to raise school quality is that it would require all the nation's schools to be included in the sample (unless district-level accountability is sufficient). Moreover, the use of the assessment to assign rewards or to dole out punishments would lend the system a legitimacy for which legislators or other policy-makers may not be initially prepared. These burdens suggest that funding decisions-certainly on a school by school basis-should not be a part of a new assessment system, and should only be carefully introduced under any circumstances.

Using National Assessments in Educational Research and Development

As noted above the primary aim of educational assessments is to measure progress in meeting the curriculum goals of the educational system-not to support the testing of research hypotheses. However, considering the richness of the outcome measures gathered by an assessment, the marginal effort needed to generate and test research hypotheses suggests that all assessments should include a research component.

It is true that assessments do not and cannot effectively build in all of the statistical controls necessary to assure that good research can be conducted (especially as these controls are constantly being discovered or refined). Nonetheless, national assessment efforts produce an immensely powerful set of outcome measures. To the extent that assessments also provide an array of control and background information on students and family characteristics, teacher characteristics, and classroom factors, along with information on costs, it will be possible for researchers to assess the effectiveness of alternative inputs into the schooling process, and identify cost-effective solutions to improving student performance. Moreover, a key component of such a research agenda is analysis that attempts to find links between educational achievement and labor market productivity or other social outcomes. This type of research would allow policymakers to assess the economic rates of return associated with different measures of educational skills acquisition. However, much of this type of analysis requires fairly advanced research capacity. A fundamental strategy in the building of an assessment system should therefore be the funding of a research capability that may include skilled and experienced subject matter specialists, educational analysts, statisticians, psychometricians, econometricians, sampling experts, and computer programmers. However, a country that lacks a state of the art educational research apparatus need not be constrained to start one without a sophisticated team of highly advanced researchers and research tools since adequate and useful research can be done without the use of the most sophisticated techniques. Nonetheless, the more complex the questions being asked of the data, the more advanced the research methodology required to answer them accurately, and the more sophisticated the research system will need to be.

In short, while assessment systems are not specifically designed as pure research instruments, they could be designed in such a way as to collect data that can be used by the research community to conduct basic research on education, to analyze the effectiveness of various educational inputs, and to estimate cost-effective ways of increasing student learning. Adequate funding should be built into the system to ensure that such research is carried out.

Technical and Management Issues in Educational Assessments

The following are the main issues and decisions which will need to be taken in the course of implementing educational assessments.

Defining Objectives

The objectives of educational assessments determine what should be measured and how it should be measured. These objectives will therefore need to be clearly articulated from the start. As noted above assessment objectives could include: monitoring and reporting on the nation's progress towards established performance targets; providing quantitative ammunition to encourage or to direct districts or schools to improve performance; furnishing educators with data and research for the purpose of diagnosing and treating learning problems or of changing instructional design and teacher training; and developing materials that encourage teachers to improve their instructional content and pedagogical practices. A decision will be required on what levels and subjects would be tested. A realistic five-year implementation plan will need to be prepared on the basis of the objectives and modalities selected. A dissemination and follow up plan should be an integral part of the design.

The Nature of the Testing Agency

A decision will need to be taken on the location and nature of the testing agency. One alternative is to locate all the testing expertise in a government agency. This may be necessary if private institutions do not exist. Another alternative is to keep the central assessment agency in Government very lean, with a few high quality staff, and to contract out the major work of undertaking an assessment to a non-profit autonomous institution. This second approach will help to ensure flexibility and high quality of technical personnel. Usually an independent assessment policy board overseeing the entire assessment process is established, as well as subject councils and advisory committees, one for each subject area or academic discipline, to elucidate specific examination objectives within each area.

Determining the Type of Tests to be Given

Achievement tests are examinations keyed to measuring the extent to which children learn the intended curriculum. Aptitude tests measure students' "innate" abilities. Achievement tests therefore would normally be used to serve the objectives of an educational assessment. Achievement tests have greater predictive power for future educational levels than aptitude tests. "Objective" tests, such as multiple-choice or short-answer test formats, are more cost-effective, reliable, amenable to statistical analysis, and easier and quicker to score than performance tests, such as long essay examinations or skill demonstrations. However, performance-type items help to ensure the teaching and learning of writing, original thinking, analysis, and synthesis, and should be included if financially and technologically feasible. Criterion referenced tests measure whether particular or prescribed standards are met. Norm referenced tests compare and rank student learning with average (mean) achievement levels. Criterion referenced tests are normally the preferred choice for assessments since they are designed to examine students' mastery of the system's educational objectives. The performance standards of criterion referenced examinations will need to be made explicit and widely reported and understood.

Preparing and Administering the Test

The preparation of a detailed examination syllabus for each subject area and grade-level to be assessed is the first step in instrument development. Objectives listed in the examination syllabus are normally distributed across all of the content, process, and context areas judged to be of fundamental importance. How much em-

phasis to place on recall of factual information and terminology, and comprehension of basic concepts and ideas, *versus* higher-order thinking skills, problem analysis, and the application of knowledge and skills will need to be decided. Table 1 provides an example of levels of thinking skills. Test items will need to be generated by trained item writers to correspond to the content and process areas identified in the examination syllabus. Assessment instruments will also normally measure a variety of student, classroom, school, and community input and cost items determined on the basis of the assessment objectives and the feasibility of gathering such information. Draft assessment booklets with accompanying answer blanks will need to be prepared in multiple forms containing the background questionnaire, test items, and administration instructions. Strict quality controls and test security controls should oversee the entire preparation process. A rigorous full-field pilot test conducted in a representative subsample of classrooms is needed to iron out difficulties in the examination booklets and administration procedures, and to provide guidance for preparing the final versions of the examination booklets. A decision will need to be taken with regard to whether to test a sample or a universe of students. If the assessment is not also part of an effort at certification or selection, and is not designed to provide feedback to every teacher about his/her class, then a scientific sample of students would achieve the objective of improving learning at a fraction of the cost and effort of a full assessment of the student population. However, if the sampling is not done rigorously, then the assessment may provide inaccurate and confusing results. For an assessment based on a sample, a stratified cluster sample is normally most appropriate. Areas likely to be less responsive than average would need to be over-sampled and private schools could be included for comparison purposes. Multiple choice items will need to be scored mechanically and essay items read and scored by professional readers backed up by supervisors and a reliability system. Items will need to be analyzed for quality and discriminability, initially on the basis of percentages and means, and later, depending on the testing agency's capacity, using more sophisticated techniques.

Disseminating and Following up on Test Results

What information to report, to whom it should be reported, and how to report it is the first step in the design of a national assessment. Reports of results will need to be bold, clear, direct, concise, short, journalistic, balanced, graphically illustrated, non-technical, tailored to specific audiences, disseminated to the smallest level consistent with the sample, and presented by background characteristics. For maximum impact reports and results would need to be incorporated into pre-and in-service teacher training and other programs and into guidelines for teaching and supervision.

Determining Costs

Table 2 provides very rough estimates of the relative costs of sampling compared to universes and "objective" compared to performance tests. Depending on the modality selected and the size of the universe, the costs for, say, a primary level test in Spanish and mathematics could range from as little as US$100 000 to as much as US$40 million. The least expensive system is one with "objective" tests directed at a small scientifically selected sample. The most expensive system is a "performance" based system directed at the universe of students.

With few exceptions, the costs of undertaking even a large scale assessment are always a very small fraction (less than 0.1%) of the total bill for the educational system, of which most of the costs are for salaries. However, these costs are discretionary, with uncertain and sometimes politically sensitive results.

It is quite important to prepare realistic cost estimates from the start for a five to ten year program and to try to get a commitment from central government authorities to adequately finance the assessment system over that period

Table 1

A TAXONOMY OF EXAMINATION QUESTIONS

Question Category	Level of Thinking Required from Student	Examples
1. Recall Who? What!? Where? When?	Recall of facts, observations or definitions.	1. What is the capital of Chile? 2. When did Paraguay become independent?
2. Comprehension Describe, compare contrast, explain, rephrase, translate.	Giving descriptions, stating main ideas, comparing, and contrasting.	1. Describe in your own words the theme of a story. 2. Compare life in urban and rural areas of the country. 3. interpret a graph.
3. Application Apply, solve, classify, select.	Applying appropriate rules and techniques to solve problems; recognize principles in new situation.	1. Juan and Marta can do a piece of work in 15 days. They work together for six days. Then Marta leaves and Juan finishes the work in a further 30 days. In how many days can Juan do the piece of work alone?
4. Analysis Identifying causes or reasons, drawing conclusions, inferences deductions.	Making inferences, finding evidence to support conclusions.	1. What is García Marquez' views of society in his novel *One Hundred Years of Solitude?* 2. Following your experiments, what is your conclusion about the factors affecting the growth of seedlings?
5. Synthesis Predict, propose, plan, write.	Solving problems, making predictions. Producing original communications.	1. What would happen if there was drought? 2. What actions could the government take to control population growth?
6. Evaluation Judge, evaluate, decide, appraise.	Judging the value of ideas, of a solution to a problem, of the merit of art and literature.	1. Do you think that newspapers influence public opinion? 2. Should the government take action to control population growth?

Source: The World Bank, *Examination Systems in Africa*, 1991, adapted from Perrott (1982).

Table 2

COMPARISON OF COSTS OF ADMINISTERING TYPES OF ASSESSMENT SYSTEMS[1]
(In dollars)

Tipe of test	Estimated costs for test administration (Orders of magnitude)				
	Fixed cost for test preparation	Estimated cost per test	Number of students in education system	Cost for sample of 2 000 students	Cost for universe of all students
"Objective" test (student shows knowledge and skills by answering multiple choice and open ended questions)	100 000	1	400 000	102 000	500 000
			2 000 000	102 000	2 100 000
			4 000 000	102 000	4 100 000
Performance test (student shows knowledge and skills through essays, demonstrations, laboratory exercises)	50 000	10	400 000	70 000	4 050 000
			2 000 000	70 000	20 050 000
			4 000 000	70 000	40 050 000

Source: Derived from Lockheed, 1991, Table 2, and from Esquivel.

[1] Costs are based on rough estimates in countries such as Costa Rica and Ecuador for a primary-level test in Spanish and mathematics. Sample size will vary depending on the objective of the assessment, including how many sub-groups (e.g., urban/rural/public/private, by region) are to be studied. A sample size of 2 000 will usually be adequate in terms of giving reliable estimates of scores if only a few sub-groups are to be studied.

of time. This will also influence decisions on the number of subjects and levels to be tested. Inadequate financing may result in a one-shot assessment poorly integrated into the education system and therefore with little impact on learning.

Assessment Systems in Latin America

As noted Chile and Costa Rica have assessed educational attainment at the primary level at a national level. In addition to Chile and Costa Rica, Honduras, Brazil, Jamaica, Colombia, and Mexico have undertaken a variety of limited assessments of student learning. These countries, as well as the Dominican Republic, Belize, Ecuador, Northeast Brazil, and the state of Sao Paulo are considering establishing larger, more systematic assessment systems. The following sections summarize the experience of Chile and Costa Rica, which have implemented the most complete educational assessments in Latin America, in relation to the technical and managerial issues described above. The sections also

summarize the experience of Mexico, since it has a long standing Government agency which has undertaken a variety of assessments based on sample surveys, with mixed results, and which is currently facing major problems of financing and personnel. Finally the experience of Colombia is also reviewed. Colombia has a very strong and well organized university entrance examination system. The institution responsible for this program has expanded its activities to support an entrance examination to secondary schools in the Bogota metropolitan area. The example of Colombia is included, first, because of the high quality of its testing agency, and secondly, because it is a good example of a selection system which in the future could be utilized for assessment purposes.

The Chilean Assessment System

History, background and results

In 1978 the Ministry of Education (MOE) commissioned a team from the Universidad Católica to develop a system to assess the quality of the education focusing on factors that influenced educational achievement. In 1980 MOE conducted pilot studies in two regions, and the Programa de Evaluación del Rendimiento Escolar (PER) started in 1982. In 1984, a series of tests were administered nationwide covering 390 000 fourth and eighth grade students in 3 200 schools. The main objective of the tests was to obtain information on cognitive achievement (reading, mathematics, and social and natural science) and to inform parents and supervisors about achievement levels on a school by school basis. However the work was not successfully completed because of inadequate administration and resistance from teachers and supervisors because of threats that teachers or schools would be punished for poor results on the tests. Shortly after, the Centro de Perfeccionamiento, Experimentación e Investigaciones Pedagógicas (CPEIP), a MOE dependency, developed the Sistema de Evaluación de la Calidad de la Educación (SECE), with the objective of identifying factors that could be used to improve the quality of the education in preschool, primary and secondary education levels. A weak infrastructure and limited resources explained why SECE also had a very short life. Only one test application was administered among 9 300 eighth grade students in 300 schools in 1986.

Based on these experiences MOE decided to start a new assessment system (Sistema de Medición Sobre la Calidad de la Educación, SIMCE) managed by the Universidad Católica. The system was put in place to measure educational outcomes (mathematics, Spanish, social sciences and natural sciences) as well as affective development, and internal efficiency indicators. In 1988, new improved achievement tests were applied to 233 000 fourth graders in 5 600 schools; and a year later, in 1989, the tests were applied to 193 000 eighth graders in 4 600 schools. SIMCE articulated the following specific and very ambitious goals:

- assist the MOE in its normative work and in its supervision of the system;
- assist the regional and provincial authorities in supervision and technical support; and
- estimate quality in each educational institution, compare these results, look for explanatory factors, and evaluate the results of educational programs.

The main conclusions of SIMCE were:

- public municipal schools scored lower than "aided" schools and much lower than private schools;
- rural areas scored much lower than urban and suburban areas;
- there was a high correlation between socio-economic status (s.e.s.) and scores on the assessment; and
- an analysis of the 100 worst school confirmed that the common denominator was poverty and rurality.

The results were interpreted to mean that increased autonomy at the local level, as a means of introducing a private-sector "mentality" to all primary schools, might lead to increased achievement. The Government has been implementing a policy with this in mind.

A dissemination plan was prepared and the results were widely distributed. Each school received detailed results and parents were also informed of the school results. Booklets, audio-visual materials, and opinion surveys were used. The cost of the program per year was estimated at US$5 per student, or about 0.1% of the MOE's budget.

Future plans include improving the cognitive instruments, adding more attitudinal instruments, analyzing the worst schools in greater detail, and undertaking more research.

What was measured

Chile opted for achievement rather than aptitude testing, and for criterion-referenced rather than norm referenced tests. However, in addition to cognitive items, Chile decided to measure individual development, including self-concept and self-esteem in relation to school experience, and also to measure opinions of students, parents and teachers on the educational process. It is not clear what Chile gained in terms of operational guidelines from these additional questions, except possibly greater political acceptance by those taking the examinations.

Chile opted mainly for a multiple choice format, but also included open-ended writing tests. Chile corrected only a random sample of 10% of the students' writing samples–a potentially cost–effective approach to the problem of cost of open-ended questions. Information was not made available on any problems of reliability related to marking the open-ended questions, nor was any information available on how markers were trained and supervised.

Designing the instruments

Chile has a centralized curriculum, applied in all regions of the country. For each grade level (4th and 8th) two criteria were used to identify the curriculum objectives that should be measured by SIMCE: that most schools covered the objectives and that they could be measured in an objective test format. Based on the official program for each subject matter, education specialists selected a list of fundamental objectives that were taught in most schools. Objectives that needed oral answers or demonstrations (i.e. the use of tools or machines) were excluded.

A committee formed by teachers and researchers identified items for each objective. Each item was analyzed in terms of its correspondence with the objective and the adequacy of style and distractors. Through consensus items were rejected when these two aspects were not fulfilled. Finally, all selected items were tested in a pilot study among 3 500 students that had finished 4th and 8th grade the previous year; each item was answered by 350 students. Each item was evaluated by its difficulty level (items were accepted for the final set if they were correctly answered by at least 30% of the students), the internal reliability of the whole test (the item-test correlation had to be greater than 0.30), and the percentage of unanswered items (items that were not answered by at least 10% of the students were dropped of the final selection). The reliability of the final test, measured by the Kuder-Richardson approach, is higher than 0.90.

Background questions measured characteristics of the students and their families, teachers, classroom, directors, schools and the community where they are located. As noted above there may have been an excessive number of background questions.

With regard to booklet preparation and security, two parallel formats were assembled for each test. Packages were organized by destination identifying region, city and school, and a list was provided to control the number of tests sent to each destination and the number of tests returned. Overall security seems not to have been a problem.

Administering the assessment

In Chile all students in fourth and eighth grades took the mathematics and Spanish tests, with the exception of isolated schools which were excluded from the assessment. Total coverage was 90%. The social science and natural science

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tests were applied to a sample of students using a stratified sampling frame that controlled for socioeconomic level; geographical location, including rural urban location; and type of school (public municipal, subsidized private, and non-subsidized private). This scheme will be kept for future applications. It was decided to assess all students in order to provide feedback to all teachers in the key areas of mathematics and Spanish. This approach led to relatively high costs and could have been replaced, at least partially, by sample surveys. For the natural sciences and social sciences, a random sample of 10% of the students was selected. In addition, although the writing test was applied to all students only a random sample was corrected.

The field work lasted a week but all the tests are administered in two days, Wednesday and Thursday. All 40 Direcciones Provinciales participated in the process with the collaboration of the supervisors (748) who selected and train the test monitors and interviewers (9 000, selected among school teachers). Optical scanners at the Universidad Católica were used to score the multiple choice tests. The results of the writing scores were mechanically added to the other test scores.

At the Universidad Católica the information was validated and print outs produced at the student, school, municipal and regional level. Using LOTUS and SPSS, basic frequencies are obtained, as well as cross-tabulation at different levels including students' socioeconomic status, school modality and school administration, and region. Little or no multivariate analysis was carried out.

Disseminating the Results

In Chile reports of the average achievement (on a class by class basis) for each test were sent to central and regional educational authorities, supervisors, school directors, teachers, municipal authorities and parents. The reports summarized achievement by each learning objective, identifying the percent of students that reached each objective. To interpret the results two mechanisms are used: an explanation of how to compare schools was provided in the reports and meetings using audio-visual materials were held with supervisors, directors and teachers.

A manual on pedagogical implications of the tests was provided by SIMCE. Only 35% of teachers reported using the manuals. On a scale from 0 to 10 points from not useful to highly relevant, teachers scored the results at an average of 5.7, supervisors at 7.6 and provincial authorities at 7.7.

Research and cost effectiveness analysis was not undertaken by SIMCE in spite of the potentially rich results. However the fact that private institutions did far better than public institutions led to a major debate on re-organizing the education system.

Managing the Assessment

In Chile SIMCE has been under the direction of the Universidad Católica, and its director and the academic and administrative directors are university faculty members. An interdisciplinary group of educators, psychologists and system engineers from the Universidad Católica, MOE and consultants from UNESCO implemented SIMCE. The university was responsible for test design, data collection and systematization, data analysis, and data reporting. The Government is planning to transfer the system to the MOE (with technical assistance from the Universidad) and a proposed Bank loan would include financing to help institutionalize the system. This approach runs a risk of excessively bureaucratizing the system and will reduce flexibility. In any event there is a need for a training program to improve the skills of the people involved in SIMCE as well as to promote the interdisciplinary work of psychometricians, system engineers and educators.

The Costa Rican Assessment System

History, Background and Results

Two factors gave origin to the assessment of primary education in Costa Rica. First, since the

educational reform in the sixties, teachers and parents thought that the quality of primary education had been deteriorating as a result of the automatic promotion policy and the elimination of the entrance exam to secondary education. Second, results from research conducted between 1981 and 1986 by the Instituto de Investigaciones para el Mejoramiento de la Educación en Costa Rica (IIMEC), of the Universidad de Costa Rica, showed low education achievement among primary students. In 1986 MOE asked IIMEC to test students from 3rd, 6th, 9th grades in basic education and the last year in secondary education in mathematics and Spanish. The test for the last year of secondary education was designed for purposes of certification and was also used for university entrance. In 1986 and 1987 the universe of students were tested. In 1989 a stratified sample was tested.

The objective of these surveys was never clearly articulated. However it was clear that the MOE wished to make the public aware of the low level of education and to have a national debate on the question. A second, but not articulated objective, was to prepare the public for the re-introduction of summative examinations at the end of the sixth and ninth grades.

The results of the assessment were as follows

- the achievement scores were low in comparison with the nation-wide curriculum objectives. However, the low scores can be explained in part by the fact that students had little interest in scoring well because tests were known to be diagnostic and not summative and because teachers themselves were not adequately urged to motivate the students;
- there was widespread lack of basic knowledge in the fundamental areas of Spanish, math, science, and social studies;
- private institutions did best, followed by "semi-private" institutions which had some public support. Public institutions did far worse than the private and semi-private schools;
- urban schools did much better than rural schools, and larger schools generally did better than smaller schools;
- day time academic secondary schools did best, followed by technical schools, agricultural schools, and night-time academic schools; and
- achievement in later grades seemed to be lower than achievement in the earlier grades in comparison with the official curriculum.

MOE did not provide feedback to individual teachers and a long term assessment plan was not articulated. IIMEC undertook on its own to provide to individual schools, but MOE staff did not use the information, possibly because the initiative for the assessment was very strongly associated with the Minister himself rather than the system. IIMEC sent information to each school as well as to the press on its scores. In addition IIMEC sent information on the extent to which specific curriculum objectives were being met through the test. The cost per student varied from US$1.34 to US$7.69. The total cost was generally around 0.1% of the MOE's budget.

Subsequently MOE decided to abandon the idea of a centrally prepared and administered test in favor of tests developed by district on the basis of national criteria. The objective of these tests is to establish a minimum level of knowledge necessary for graduation from primary and secondary school, and to improve quality through giving more responsibility to the student, parent, and teacher. These district level tests in the last year of primary education count 50% in the final grade a student receives, and therefore the implicit objective of the initial assessments appears to have been met. They are prepared at the district level by groups of teachers on the basis of national guidelines as well as locally defined "needs." However the district level tests are not scored by machine and therefore systematic feedback is not possible, nor is there an objective way of comparing district by district results. There is also a potentially serious problem of security since many teachers participate in the preparation of the test. For the future MOE has proposed strengthening its own capacity for testing and measurement and using IIMEC for technical assistance rather than as a program implementor. In 1991, MOE began planning a

new sample based assessment system, in connection with a World Bank financed project.

What Was Measured

Costa Rica's assessment was criterion-based, measuring what students learned with respect to the intended curriculum. Initially only achievement in mathematics and Spanish was covered. In the second year, natural sciences and social studies, as well as French and English for 9th grade, were added. Only a small component of the Spanish test included an essay, with all the other tests based on a multiple choice format.

Designing the Instruments

Costa Rica has a centralized curriculum. The objectives of the test were selected on the basis of the official study programs. A group of 500 teachers ordered the curriculum objectives from the most to the least important. Specific cognitive items corresponding with test objectives were selected by teachers and MOE personnel; a final group of 10 judges verified if they had content and instructional validity before a final selection was made. Three measures of reliability, including the Kuder-Richardson score, were used to establish the quality of the items. Standard background questions identifying school and family characteristics were included.

Editing of tests was troublesome because MOE lacked the technology to revise texts. Test printing and test storage was conducted by private companies and security problems were observed, possibly lowering the overall validity of the tests. With regard to pre-testing, parallel tests, each with three items by objective, were applied among a sample of students to identify item discrimination and difficulty.

Administering the Assessment

In 1986, the Costa Rican test covered the entire population of students. In 1987 the test covered all students, with the exception of multi-grade single-teacher schools (around 9%). In 1989 a stratified sample of students was used for the application of the tests.

IIMEC and MOE personnel together with hired teachers gave the tests. Teachers were not permitted to give the tests in their own schools. The primary level assessments were scored by optical scanner. The tests at the end of secondary level were hand scored. IIMEC undertook item analysis and descriptive analysis, including simple cross-tabulations by student and school characteristics.

Disseminating the Results

In Costa Rica all schools got a summary of their students' average achievement and a comparison with other schools. Near 70% of the teachers reported that they had seen the results, but only a small percentage of supervisors and teachers reported that they had used the results to improve the way they teach in the classroom. Reports were produced for the school, regional and central authorities. Based on the test results, MOE argued in a variety of public forums for increased investment in primary education and for increased parental involvement. MOE used the results of the initial tests to develop an in-service teacher training program which has not yet been implemented. No significant follow-up research has been undertaken, with the exception of some small scale analysis by IIMEC. With regard to feedback, IIMEC benefitted from experience of the first three years of the program. MOE will utilize IIMEC in the design of the next stage of assessment to be financed under the World Bank loan.

Managing the Assessment

In Costa Rica MOE contracted IIMEC to develop the achievement tests and the statistical analysis, as well as the procedures for packaging, distributing and test application. MOE personnel conducted the actual field work. The Department of Evaluation at MOE does not have the technical capacity nor the resources to conduct assessments. MOE now proposes to develop the

"Sistema de Información Sobre la Calidad de la Educación Costarricense", SICEC, based on the IIMEC experience. MOE does not have trained technicians to conduct an assessment and to establish a research operations including pedagogical analysis of the tests. MOE is expected to focus on strengthening IIMEC and establishing within MOE only a very small high quality assessment unit (2-5 staff).

The Mexican Assessment System

History, Background and Results

Periodic assessments of the quality of the education in Mexico have been conducted for the last 20 years, including experiences with the "International Association for the Evaluation of Educational Achievement (IEA)", and the ECIEL[2] study of educational achievement. Since 1972 Mexico also has had entrance exams to secondary education. At that time 361 000 students took the secondary entrance exam. The number has since increased to more than 1 200 000 in the 1980s.

The Dirección General de Evaluación y de Incorporación y Revalidación (DGEIR) has undertaken several studies (varying in sample coverage, academic subject evaluated, periodicity, depth of analysis, etc) designed to assess the quality of different education levels. Some of the DGEIR studies assessing the quality of education piggybacked on information from the entrance exams. Although a methodology has been developed as a result of the experience, due to the economic crisis, little was done during the 1980s because DGEIR lost much of its specialized human resources due to salary cuts. Today most of the staff lack training in relevant areas of assessment and evaluation. Currently, with the support of the World Bank to recuperate the capacity that deteriorated during the 1980s, a technical assistance program is being design with the Educational Testing Service (ETS) to strengthen DGEIR capacity to conduct assessment.

As a result of the Education Modernization Program, 1989-1994, DGEIR has been seeking to systematize its assessment in all 31 States, among others through the study "Evaluación del Aprendizaje en Educación Prescolar, Primaria y Secundaria (EAEPPS)", which is part of the Sistema Nacional de Evaluación Educacional (SNEE). SNEE objectives seek to evaluate the learning of subject matters at different grade levels, highlight regional differences across States, and evaluate the effectiveness of pedagogy across schools. The results will identify deficiencies and areas of excellence, which will be used by the Secretaría de Educación Pública (SEP) to reallocate resources and refine its curriculum, teaching and educational infrastructure improvement program. As dissemination of the results of prior experiences was quite limited, SNEE has started an awareness-raising program among parents, students, but mainly teachers and local authorities, so that they understand the assessment process.

Similarly to other Latin American countries, the results of the Mexican experience show that the majority of the students have low achievement (i.e in a national study conducted in 1988 among primary students, 69% scored a grade of 6 or lower on an academic performance scale from 0 to 10), and that achievement is significantly related to student socioeconomic status and school urban-rural location. At DGEIR the basic level of analysis is distribution of frequencies so little information is available on the factors associated with low achievement. It should be mentioned, however, that DGEIR conducts pedagogical analysis of the results and provides feedback to the schools on detected problems.

The cost per student, around US$35, is higher than the ones in other Latin American countries because in the Mexican case the survey is also administered to parents, teachers and headmasters. The current budget of DGEIR is less than 0.1% of the SEP budget.

[2] ECIEL: Joint Studies on Latinamerican Economic Integration.

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What Was Measured

In Mexico a typical assessment study for primary education measures cognitive achievement and ability among a sample of sixth graders (the last grade of primary education). For example the CEIS-80 study, a complement study to entrance exams in 1980, measured cognitive achievement in Spanish, mathematics, social and natural sciences. The EAEPPS measures cognitive and affective aspects of students completing preschool, cognitive achievement in Spanish, mathematics, social and natural sciences for students in each grade of primary school, and those four areas plus English for students in each grade of secondary education. Nearly all tests measure cognitive achievement (a few include aptitude measures), all are criterion-referenced, and all use multiple choice formats.

Designing the Instruments

For the EAEPPS in Mexico, a group of experts reviewed the study programs used during the last 15 years to identify the contents present during this period. According to the criteria of DGEIR experts some relevant contents were included even if they were not present in all study programs during the period. The result was a desired academic profile for each grade from preschool to secondary. Once the test objectives were identified, items were selected by expert consensus. Item analysis, including degree of difficulty, reliability and validity has been undertaken but not as a general rule, with a result that, according to some experts in the DGEIR, the results of some studies are not valid. Recently the situation has deteriorated as DGEIR has lost funding as well as expertise for item design and analysis. Most studies include standard sets of background variables, including characteristics of the school, teacher, student and family background, which have been tested and confirmed over time. DGEIR has standard procedures to administer the test and to implement the field work required to collect and systematize the information. Pilot testing is regularly undertaken.

Administering the Assessment

In Mexico, with the exception of a test of graduates of teacher training schools, all assessment studies are based on samples which vary in terms of size, geographical area, and sampling design. DGEIR officials report that, compared to five years ago, today they have inadequate economic and human resources to select valid samples. Generally DGEIR uses large samples covering at least a couple of states and Mexico city. The typical unit of selection is the school and a random sample is used to select students in the classrooms. The tests are typically given by trained interviewers that are hired for that particular purpose. The computational capacity available to score and systematize the data is limited. There is access to software for statistical analysis but it is inadequately used. Test items are validated. The typical statistical analysis is that of frequency distributions, but correlational analysis has been used at times.

Disseminating and Following-up the Results

In Mexico, reports on studies are distributed among education authorities, supervisors and teachers. During the last two years DGEIR technicians have organized meetings to discuss the results. However there is very little educational analysis and few, if any, pedagogical recommendations, are made. Local researchers have sometimes used the results of studies to undertake research. However the DGEIR does not undertake such research.

Managing the Assessment

In Mexico, despite its far-reaching mandate, DGEIR's capacity to conduct assessments has been decreasing and it is losing qualified technicians. Salaries have deteriorated and the private sector has attracted many staff members. Currently DGEIR has no sampling experts, and

statistical analysts are badly out of date on techniques for item design and statistical analysis. Under a proposed World Bank loan, DGEIR's capacity will be strengthened.

The Colombian Testing System

History, Background and Results

As noted above, Colombia is of interest not so much because it has undertaken assessments but because it has a well structured and organized system of university entrance examinations which could be built upon for purposes of assessment. The system in Colombia began in 1959, through a vocational guidance program under the auspices of the National University Association to help secondary education graduates select university studies. The program included testing in topics such as verbal ability, mathematical reasoning, personality traits, general knowledge and university study preferences. In 1962, the Educational Testing Service (ETS) at Princeton trained faculty members from several Colombian universities on test design and analysis in order to improve the quality of the tests that at the time were being implemented among high school graduates who wanted to follow higher studies. About ten universities participated in the program. In 1968, the Colombian Servicio Nacional de Pruebas (SNP-Colombian National Testing Service) was established to administer a university entrance exam for all high school graduates seeking university entrance. In 1984 SNP initiated a public secondary education entrance exam in Bogotá in order to assign limited places. Up to 1986 these secondary entrance exams measured aptitudes (verbal, mathematical and abstract reasoning). From 1987 cognitive tests were included in math, Spanish and natural and social sciences. All tests are multiple choice with four alternative answers. Annex 4 of this report provides samples of the background questionnaire and instructions to students of one of these highly professionally prepared and administered examinations.

Like the other countries of the Region, in Colombia the research capacity to analyze the results of the tests is very limited. Typically only frequencies and cross-tabulations are presented, and occasionally a more detailed analysis is carried out by contracted research groups outside of the SNP. The main results reported by recent studies could be summarized as follows:

- students from private schools get better scores, mainly in math and social studies;
- male students do better than female students;
- day time schools do better than night schools;
- technical schools get the higher scores followed by academic schools, agricultural and commercial schools get the lowest scores;
- significant differences are observed by geographical regions and by urbanization level; and
- younger students and students whose parents have higher education get better scores.

In 1990 the cost of the university entrance exams was near US$4 per student and each of them was charged with US$2.6 recovering a significant proportion of the total cost. The exam for secondary entrance exam was US$2 per student, 10% of which was charged to the student. In any event, the total cost of both tests (US$1.4 million) in 1990 was less than 0.1% of the Ministry of Education budget.

What Was Measured

In Colombia the CNTS secondary school leavers examinations, designed to select students for higher education, measure verbal and mathematical aptitude as well as achievement in biology, chemistry, physics, Spanish, mathematics and social studies (including philosophy, geography and history). All students take these eight tests plus an elective from the following list: abstract reasoning, spacial relationships, mechanic aptitude, English, pedagogical knowledge, agriculture, accounting, French, metalwork, and electricity. The CNTS tests are similar for primary school leavers in the Bogotá area (selecting for entrance to public secondary schools). Because their purpose is to select

students, CNTS tests are norm-referenced; the emphasis is on the relative position of the students rather than on ability or on mastery of the curriculum content. However the content of the achievement tests is based on the primary or secondary curriculum. All tests are multiple choice with five alternative answers in the case of the university entrance exam and four alternative answers for the public secondary school entrance exam.

Designing the Instruments

Because Colombia has a centralized curriculum, applied in all regions of the country, the university entrance exam is national and is based on secondary school curriculum objectives. The methodology to identify the test objectives has been the same since 1968: SNP coordinates a group of experts, including teachers and curriculum programmers, to identify curriculum objectives according to Bloom's taxonomy. For each subject, once a list of fundamental objectives is established, a group of teachers and measurement experts identify items to measure memory, understanding, application, analysis and evaluation for each objective. Each year some of the proposed new items are included in the exams to test their reliability and validity. Measurements of degree of difficulty and degree of item-test co-variance are used to determine whether to include a new item in the item bank. The tests ask for identification of the school, including geographical location, type of administration, nature, and modality, and socioeconomic characteristics of the student, including gender, sex, age, marital status, family income, father and mother education and occupation. The SNP has developed a series of manuals on procedures to organize and implement the exams. There are manuals for the field coordinator or delegate, classroom coordinators, and instructions for room supervisors.

Administering the Assessment

In Colombia the university exam is mandatory for all secondary graduates seeking university studies. The secondary level tests are required for students wishing to attend a public secondary school in Bogotá. For these reasons the tests cover a universe rather than a sample. The number of students taking the university entrance exam has increased from 28 000 in 1968 to 150 000 in 1980 and 301 000 in 1990. The number of students taking the public secondary entrance exam in 1984 was 60 000 and in 1990 74 000.

The SNP has developed a comprehensive security system, starting with the management of the item bank, and including printing, packaging, transportation to school, distribution in the classroom, gathering of answered tests, and transportation back to the SNP headquarters. A private security firm, Thomas de la Roux, is responsible for most of these tasks.

Optical scanners are used to process the tests. Once the tests are validated, the results by student and schools are obtained by software developed by the SNP. SNP undertakes simple statistical analysis, including frequency distribution and bi-variate analysis to contrast tests results by some school and student socioeconomic characteristics. More efficient software like SPSS or SAS is not yet used and could help to improve the extent and quality of the current statistical analysis

Disseminating and Following-up the Results

In Colombia the SNP is highly efficient in producing and disseminating test results. Within six weeks of the test, SNP reports results to the student and her/his respective school. The SNP informs the general public about the results at the school level and annually the national press publishes a list of the best 100 schools. Because of inadequate statistical analysis the reports produced by the SNP are very descriptive and of little use for educational policy. The original objectives of vocational guidance has been forgotten and the system is only used for selection purposes. There is no feedback to schools on pedagogical aspects, since the system is highly focussed on the selection objective. SNP evalu-

ates each test application. A special format called "Closing of Program" has been developed for this purpose. It includes statistics on numbers of schools, students, etc., costs, dates, description of problems during the application, and proposed solutions.

Managing the Assessment

In Colombia, the support that MOE gave to the CNTS when it started in terms of resources and organization, and the effort in shaping a team of skillful technicians has been the key to the successful experience of the CNTS. Out of the 63 professional staff working in CNTS, 28 are responsible for item design and analysis and research. While item design and analysis is well done, almost no research is conducted. There is no education analysis of the results, no feedback to the educational authorities, and therefore no explicit effect on educational policy. It would seem that CNTS would be an excellent candidate for the feedback experiment undertaken in Kenya.

The Latin American experience: conclusions and recommendations

Chile has had the most successful experience with assessments. Chile initiated its program in 1978. After initial problems, including resistance from teachers and students, the program, in place since 1988, has successfully measured learning for universes among fourth and eighth graders. The aim of the program has been to affect educational policy and to strengthen teaching practice. The program included a strong dissemination effort involving civil servants, teachers, and parents. The program has influenced government policy and there is some evidence that it has affected classroom practice. The relative success of the Chile program appears to be a result of the high quality of its staff, and a strong focus on providing feedback directly to teachers, schools and districts and on informing the general public of the nature and role of assessment program. However, the program has not included research on causes of school failure and has relied almost exclusively on high cost censuses rather than on samples. Furthermore, the relationship between the Ministry of Education (MOE) and the Catholic University implementing the program up to now requires clarification.

Costa Rica initiated its program in 1986 and 1987 and assessed the universe of third, sixth and ninth graders. The program did not have a clear articulated goal, but its implicit goals included using the assessments as a tool to argue in the public arena for additional funding for primary education, and convincing the public of the need to re-introduce the use of partly standardized tests for certification of secondary school graduates. The assessment did not include the objective of using the assessment as a direct tool to improve classroom practice. Feedback to schools and teachers has been *ad hoc*. Costa Rica has a limited human resource base, especially in Government, for this kind of activity.

The Government of Mexico has undertaken numerous assessments and evaluations over a twenty year period. It has also analyzed the national secondary school entrance examination for assessment purposes. The agency responsible for most of this work recently lost many of its good staff and has had an inadequate budget. It has been disseminating results, but on an excessively theoretical and general basis. It is now hoping to strengthen its staffing and is planning a stronger awareness raising program for parents, teachers and school authorities.

Colombia has an excellent autonomous agency undertaking university entrance examinations and examinations for entrance to public secondary schools in the Bogotá metropolitan area. Colombia's exams are a model of modern computerized test preparation and scoring. The challenge for Colombia is to build on this capacity through utilizing selection examinations for purposes of assessment, similar to that of Kenya, as well as to develop a primary school level assessment system.

None of the four countries has adequately incorporated research into assessment and test-

ing. This means that much of the value of their effort is being lost because of a lack of additional complementary inputs. Furthermore there is an often unnecessary tendency to test the universe of students rather than to use less expensive samples. Using sample survey methodology will depend on good statistical expertise which is a scarce commodity. Furthermore these four countries have not put enough effort into dissemination and follow-up of test results. Chile has the best record but could still do much more to have an impact on classroom behavior. Mexico's dissemination efforts, while widespread, have been excessively general and theoretical and data on a per school or per district basis have not been systematically provided. Costa Rica's dissemination efforts were undertaken on an *ad hoc* basis by a testing agency outside Government.

Recommendations

Coupling the four cases with the issues described earlier, the following are the main recommendations for Latin American countries seeking to establish assessment systems.

- From the start educational authorities will need to define clearly the objectives of the assessment, including specifically how the assessment is expected to lead to improved classroom practice. They will also need to prepare a five-year implementation and cost plan, and act to ensure continuous and full support from the highest government authorities. The cost plan should specifically include funds for dissemination and follow-up.
- From the start the managers of the assessment will need to design a full dissemination and follow-up plan. The managers will need to identify the various clienteles who will use the assessment, hire expert writers and reporters for dissemination, and plan for in-service training programs of teachers based on the assessments. A strong effort will need to be made to educate all concerned parties as to the fact that an assessment is not designed to award or punish, only to assist, and that low scores in a region, city, or school, may not reflect on the teachers since there are many operating external factors.
- In principle most of the assessment design and implementation work should be contracted out to an independent, stable non-profit agency and the testing department inside government should be very small. If such an agency does not exist, then efforts should be made to build one up over time.
- Education authorities should seriously consider using sample surveys rather than censuses, especially when the objective is to measure performance of groups of students, schools, and the system as whole. But samples had best not be undertaken if the sampling methodology is inadequate.
- Assessment programs should include funds for research, as well as agreed upon cooperative programs with local and/or foreign independent non-profit research institutions.
- Latin American governments should consider financing the training of psychometricians and statisticians. Contracting with non-profit agencies will help to ensure that this expertise remains available to government, since it is difficult for government to retain qualified staff with these scarce skills.
- Countries such as Colombia with well managed selection examinations should consider utilizing these examinations for assessment purposes

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Annex 1

SAMPLE FEEDBACK FROM KENYA

In analysing the science questions in the 1979 General paper, an interesting fact was discovered about differences in performance between boys and girls. As you may remember from p 26 of this Newsletter, the performance gap between boys and girls was higher in science than in any other subject. In English, the average gap was only 3.6%; in mathematics, it was 7.1%; but in science it was as high as 7.7%.

When the science questions were analysed separately, however, it was found that girls performed quite well in most of the reasoning questions. For example, the question about bases and acids was answered correctly by 46.2% of boys and 43.6% of girls, so the performance gap was only 2.6%.

By contrast, girls tended to do badly in most of the questions which gave an advantage to pupils who had carried out practical observations and experiments. For example, the question about how a card would hang from a nail was answered correctly by 58.6% of boys, but only 40.5% of girls. thus the performance gap as a high as 18.1%.

When the scores of boys and girls in all reasoning and all observation questions were compared, the results shown in the Table were got.

As you can see, the average performance gap in questions which tested mainly reasoning was only 4.4% which is only a little higher than the gap for English. By contrast, in the questions which tested mainly the results of observations or experiments the gap was as high as 14.1%.

These results suggest strongly that the main reason why boys perform better than girls in science is not that they have superior reasoning ability, but rather that they have had more experience in carrying out observations and experiments.

Questions testing	Average mark		Performance Gaps
	Boys	Girls	
Mainly reasoning	46.4%	42.0%	4.4%
Mainly observation or experiment	56.5%	42.4%	14.1%

PROGRAMME TO IMPROVE THE QUALITY OF PRIMARY SCHOOLS IN POOR AREAS. A CHILEAN EXPERIENCE

MINEDUC Chile*

"At this time in Chile, those who can pay get a better education. A democratic system cannot solidify if access to education depends on the capacity to pay. "Therefore, the question is how to set up an educational system that provides everybody with an equal opportunity, where quality is the main concern and education is distributed equitably. The challenge of providing equal opportunity for all has to be faced already at the primary level, with a quality and equitable education that gives everyone access to the benefits of culture". (From a speech of Ricardo Lagos, Chile's Minister of Education, given 20 September 1990 in Mexico to a meeting of Ministers of Education and Culture from throughout the continent).

From the mid-1800s up to the end of the 1960s, Chile worked to build a national system capable of educating every school-age child. Achieving that kind of coverage was seen as a requisite of democracy and the basis for economic development.

The Primary Education Law of 70 years ago spoke of the need for a policy that would make it possible for every child in the country to go to school. This goal was more and more realized as the years went by. The number of years of obligatory schooling also increased with time, reaching eight grades at present.

Today, this goal, for all intents and purposes, is realized: 96.4% of all children between the ages of 6 and 14 attend primary school. For those who do not, the reasons are extreme poverty or broken families, not a lack of schools to attend.

The challenge today is more one of quality and how to deal with the internal and external inequalities that characterize both the students and the schools that receive them.

Traditionally, it has been part of the national culture to see education as the road to upward social mobility and a better future. Parents are willing to make great sacrifices to send their children to school, and hopefully, on to college. They believe that if their children are going to school, they are building their future.

It is also socially accepted that justice demands that a capable, intelligent child –apart from his or her socio-economic status– be able to become a university-educated professional or at least acquire the skills and competencies necessary for a productive job and a decent wage.

The reality of today, however, is that being a high-school graduate is no guarantee of upward social mobility, entrance into the university, or even a job. There is no basis in reality for believing that access to education in itself will realize those goals. Attending school does not mechanically provide knowledge useful for participating in society and continuing to learn.

For example, it has been shown that many children finishing the first four grades of primary education have not reached the expected levels in reading, writing and arithmetic. Without these skills, their possibilities of successfully continuing their education are certainly limited.

Statements like this are based on the results of

* Ministry of Education, Chile.

different student tests. The results of the Performance Evaluation Test of 1982 and 1984 and of the System to Measure the Quality of Education (SIMCE) of 1988 and 1990 were discouraging. The average fourth grade student at the national level answered correctly only 54.2% of the questions on Spanish and 51.8% on mathematics.

Those were national averages. Although the information available does not allow for an analysis by socio-economic strata, it can be stated that there is a difference of more than 25 percentage points between the averages for schools that charge tuition and those that are free.

Behind those statistics are the inequalities both external and internal to the system that put low-income students at a disadvantage. Children arrive at school with social and cultural differences which are not taken into consideration. They are all submitted to the same acculturation process, which only accentuates the inequalities within the system.

Internal differences depend on whether schools are urban or rural or belong to a rich or poor municipality. The wealth of the municipality determines what educational materials and teaching methods will used to transmit the curriculum, thus producing disadvantages for the poor.

Added to this the proven fact that school performance is related to real factors such as nutrition and the cultural level of the student's environment, it becomes clear that the only way to overcome these differences in the short term is to apply a criterion of positive discrimination or affirmative action to those who are at a disadvantage. That is the only possible way to produce closer final results, in spite of inequalities at the outset of the educational process.

Equalitarian treatment is not enough if schooling is to produce a just result. Those who have greater learning problems need more support than others, which means the schools with poorer students need more resources than schools with better-off students.

The situation in Chile is just the opposite: poor students go to the schools with the least resources and lowest-paid teachers.

Objectives of educational policy

The challenge today is to ensure that students really learn in school and develop the basic skills and competencies needed to live in a society moving into the next century.

This challenge is the basis of the three main objectives of the Chilean Government's educational policy:

- Improve the quality of education, to ensure that children really learn the basic skills and competencies needed to live in a democratic and developing society.
- Distribute education equitably, which implies dealing with the differences that exist between children entering the system, giving more support to those who most need it in order to ensure acceptable learning levels.
- Make education everybody's task. In other words, the State is seen as leading a process in which the whole community is invited to participate.

Programme of the 900 schools

The above describes what is behind the Programme to Improve the Quality of Primary Schools in Poor Sectors, inaugurated on 12 March 1990. Its main purpose is to support the poorest free schools in Chile. The programme was made possible by grants from the Governments of Sweden and Denmark.

The Programme is also known as the Programme of the 900 Schools, or P-900 for short, because of the number of participating schools at the outside. It supports a variety of actions designed to raise the quality of education. It targets the schools with the least quality and the most poverty, thus putting into practice the principle of positive discrimination. Even though it is known that such actions are insufficient in themselves and need to be complemented by others, there is no doubt that they tend to improve critical situations.

This programme is the first response to the needs uncovered by analysing the situation of education in Chile. It attempts to raise quality, distribute education equitably and involve the community in the task.

The programme concentrates on the first basic cycle –first through fourth grades– and seeks to improve learning in reading, writing and arithmetic, considered basic for all further learning.

The option to centre attention on these first years is based on the conviction that a school with good teachers and educational material can offset the disadvantages that children may bring with them from their earlier training. More attention, greater availability of textbooks and teaching materials and teachers who are constantly updating themselves make up for poorer pre-school preparation.

From the viewpoint of the cultural future of the pupils, what is important is not so much the level at which they start but rather that they learn to dominate basic skills. Once they can handle these, they can move on to learn other things. In this sense, access to reading, writing and arithmetic are the basic keys. It is difficult to learn these skills outside of school. They presuppose a systematic process, the formation of habits and other aspects hard to achieve in any other way.

Educational principles

The educational strategy of the Programme of the 900 Schools can be summed up in three points:

- Although it is known that new languages are learned on the basis of those already known, this principle is not always followed. Children from poor neighbourhoods have a problem: there is a gap between the culture (language) of the school and that of their environment. Therefore the programme wants the teacher to be not only concerned about what he or she says, but also about what the child actually hears. The language of the children is the starting point: they should be heard and encouraged to express themselves.
  Teaching the spoken and written mother tongue should begin by respecting and recovering the language of the child. The knowledge of arithmetic already acquired by the pupil in everyday life should be taken into account.
- Learning should start with concrete experience, generalize and then return to the particular to enrich it with new meanings and possibilities. This is seen, for example, in the use of educational games and materials, in solving math problems on the basis of the students' own experience, or in applying what is learned to everyday life.
- Learning should enhance the children's self-esteem and positive self-image.

The ideas in the Programme of the 900 Schools are based on these principles. Value is given to the way work was done in the past, how history and tradition are remembered and how they serve as the basis for building the future. What breaks this continuity, this meaning, tends to be rejected. Any innovation that makes possible a practice considered to be progress tends to be accepted.

Thus the programme builds on prior situations and respects and values the knowledge and experience of the different actors involved, such as supervisors, teachers or school principals. This does not, however, mean that new methodologies and contributions from theoretical reflection and research are not introduced. It is rather a question of, along with including new elements, giving value to what teachers and supervisors already know, and of allowing them to contribute and work together on what is new based on what already exists.

It has also been taken into account that the quality of education cannot be upgraded without the good will, commitment and enthusiasm for the task on the part of all involved. Therefore, activities are presented as shared tasks. Teachers have been encouraged to value the cultural environment of their pupils and to overcome the negative characteristics connected with poverty. Emphasis is given to the fact that the programme supports and strengthens two key agents: the

supervisor, as the person who provides technical and educational support, and the teacher, as the person responsible for the education of each child.

In 1991, the programme is reaching 1 278 schools in all 13 administrative regions of the country, and 107 establishments with only one or two teachers involved in a pilot project.

Some 219 594 pupils in the first four years of primary school –20.2% of the total number– are being reached; as well as 2 897 pupils in the first six years, in the case of the one- and two- teacher schools.

Throughout the country, 7 267 teachers participate in the programme.

The following tables present the schools, pupils and teachers involved in the programme, along with percentages of coverage for the years 1990 and 1991.

According to 1989 figures, there were 1 987 758 primary school pupils in 8 469 educational units throughout the country. Of these schools, 94.2% received funds from the Government, either as administered by municipalities or as subsidized private schools.

These pupils were served by 76 209 teachers: 67 664 in the classroom and 8 545 as inspectors, heads of technical-pedagogical units and student counsellors.

Lines of action

The programme has seven basic lines of action:
Improvement of infrastructure and equipment: school buildings are repaired, with emphasis on those aspects that most influence the quality of education.
Workshops for teachers: in-service training is given to first through fourth grade teachers for teaching reading, writing and arithmetic; other topics include understanding the cultural environment, enhancing school-community relations, promoting creativity and developing the children's self-respect.

These workshops provide professors with the opportunity to work together autonomously, in such a way that they can appropriate their own practice, innovate and create, assuming a professional responsibility for the results. They also encourage the teachers to come to know well the social and cultural reality of their students, by conducting research on the community, reflecting about the culture of their sector and the possibility of incorporating others in the educational task.
Textbooks: schools are provided with a minimum of educational materials indispensable for increasing the productivity of the learning process.
Classroom libraries and educational materials: first and second grade classrooms are provided with children's books and materials to aid in teaching reading, writing and arithmetic. Tape recorders to be used in teaching and spirit duplicators or mimeograph machines for making educational materials are also provided.
Learning workshops: third and fourth grade pupils who are behind in their work are helped in workshops held after regular class hours. These workshops are conducted by young people from the community, chosen by the schools themselves and previously trained for the task.

The workshops are held in small groups of pupils, led by two youngsters. The goal is to reinforce what is learned in school and, at the same time, enhance the children's creativity and self- esteem.

The young people are supported by supervisors from the Ministry of Education and are provided with special educational materials. The workshops function twice a week from August to December. The participants are pupils who fell behind in their school work during the first semester.
Support for teachers and administrators: a variety of educational materials are elaborated which allow the administrators of each school to carry out an autonomous project for educational improvement, integrating the programme's lines of action and enriching them with the participation of the teachers, parents and students of each school.

The proposed methodology tends to generate in each school a highly participative and creative

Table 1

SCHOOLS, PUPILS AND TEACHERS

School	Schools	Pupils 1st-4th Grades	Teachers
Schools 1990	969	160 182	5 237
Schools 1991	309	59 412	1 892
1 or 2 teacher schools	107	2 897 [a]	138
Total	1 385	222 491	7 267

[a] 1st to 6th grade

Table 2

PARTICIPATING SCHOOLS AND PUPILS

(Percentages of totals)

Region	1990		1991	
	Schools	Pupils	Schools	Pupils
I	9.3	16.9	13.2	25.7
II	10.3	11.0	14.2	14.6
III	9.4	8.0	12.3	12.0
IV	13.3	30.2	17.2	37.8
V	10.5	11.9	14.5	17.2
VI	13.8	17.7	15.6	17.9
VII	11.7	13.4	15.2	21.8
VIII	13.6	16.5	18.2	20.6
IX	12.0	24.6	15.1	33.2
X	11.9	27.3	15.0	34.4
XI	12.7	18.9	18.2	32.0
XII	7.0	12.8	12.3	25.6
MR [a]	10.2	10.0	12.5	12.6
TOTAL	11.8	15.2	15.1	20.2

[a] Metropolitan Region

reflection on how to improve the quality of education.

Support processes: as a way to support the programme's actions, an evaluation and communication process has been developed. There are three lines of evaluation: a continuous evaluation carried out by the participants themselves; and two external evaluations, one for the programme in general and the other specifically for the learning workshops. Participants as well as public opinion are kept informed of the programme's progress.

Activities

The programme was planned in detail in March 1990 and different teams were set up. A central office was established at the Ministry of Education building.

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Technical teams

The teams formed to design the programme were drawn from among groups of university professors with broad experience in language and mathematics teaching, as well as from among independent academics with educational experience from non-governmental organizations. For example, one team had 12 years of experience developing learning workshops, the Interdisciplinary Programme for Educational Research (PIIE). Another had a good deal of experience in evaluating projects connected with the learning process, the Centre for Educational Research and Development (CIDE).

The programme, then, brings together people from government, the universities and the private sector.

Administration

The administration of the programme was given to the existing structure and personnel of the Ministry of Education, so that the experience and learnings acquired in the programme would remain among the permanent staff.

Even though the programme is conducted from a central office –where high-level specialized teams function– proposals are always formulated in such a way that they can be easily applied on the regional and provincial levels of the Ministry of Education.In each region, the regional ministerial secretary designated a regional coordinator and a provincial coordinator. Supervisors were then named to carry out the programme. Each supervisor was responsible for an average of three schools.

Training the supervisors

Although the main lines of the programme were drawn up by a central team, those who are in permanent contact with the schools are these employees of the Ministry of Education. The central team and the technical teams provide them with on-the-job training. They are taught how to organize and carry out updating workshops for language and mathematics teachers, and train young people to work with children, hold learning workshops and use educational materials.

Three workshops a year are held to provide these supervisors with technical orientation and general proposals, which they then adapt to the reality of their different regions and schools. All the supervisors in the programme participate in these workshops, which last five days and are held in a conference centre that provides room and board, to allow for maximum interchange.

Training for these supervisors is not limited to theory. Each workshop gives them the chance to practise what they will later do in their schools. To put what they learn into practice, they are provided with educational materials which give them a feeling of security in their work, and which also help them maintain the programme's basic technical orientation.

Selecting the schools

Schools were chosen to participate in the programme on the basis of the following criteria: scholastic performance as indicated by the System to Measure the Quality of Education in 1988; the disadvantaged socio-economic background of the students (only schools in categories C and D of SIMCE's socioeconomic index were considered); size and accessibility of the school.

Using these criteria, a number of schools were preselected to form a group from which the final participants would be chosen by the central and regional teams. Some 10% of the schools of each region fit the criteria. No distinction was made between private schools subsidized by the State and municipal schools.

Additional schools were incorporated into the programme in 1991. Each region was assigned a quota according to the criteria of poor performance and the level of poverty, as well as according to the number of supervisors already working in the programme, since no new supervisors were to be added.

Other criteria were added to the selection

process during this second year: the number of students failing to pass the year and the number of drop-outs, which are also indicators of poor quality.

First steps

The programme began with a technical meeting to choose the participating schools and name the regional and provincial coordinating teams. Efforts were made to make the programme known. The coordinating teams visited the schools chosen to present the programme to them and ask them to participate.

Each regional ministerial secretary and the provincial departments of the Ministry of Education organized inaugural ceremonies with the participation of those who were going to work in the programme, political authorities and regional educational officials. Working meetings were then held with the technical teams of supervisors from the Ministry of Education in each provincial department.

The dissemination process also included making known the new educational policy of the recently installed democratic Government.

Work in the schools began immediately after the selection process was completed. The first activity was a visit from the supervisor, who met with administrators, teachers and members of the school community to explain the programme, establish a first contact and request them to participate.

Once that phase was completed, the first workshop for supervisors was held, lasting two days, to:

- Provide them with a better knowledge of the learning workshops, clarify the criteria for choosing the young people to work in them and for choosing the pupils to participate.
- Make known the general lines of the workshops for updating teachers.
- Prepare a study to aid parent-teacher associations to reflect on the question of school performance and carry out concrete steps to improve it.

Developing the lines of action

Physical plant

The first step was to establish criteria and a methodology for determining what kind of repairs would be made and how to go about them. A questionnaire was drawn up to send to the schools so they could make known their needs in this regard. The questionnaire included a priority listing of repairs needed, to be drawn up by the teachers council in each school.

The responses were processed both on the regional and central level, to arrive at a definitive estimate of needs. Once that was done, US$ 3 686 000 overall was granted to improve infrastructure in participating municipal schools. The private schools in the programme were excluded from this benefit, since their property belongs to private individuals or organizations. Municipalities that already had approved funds for this purpose were also excluded.

On the other hand, private as well as municipal schools were among the recipients of the 4 058 bookcases bought to facilitate the use of the educational materials given out.

New furniture and brightly coloured school rooms, or any of the other improvements made to the infrastructure, produced positive effects. Such changes provoke positive attitudes about the school among students as well as their parents. The children improve their personal hygiene, take better care of the materials and generally seem more content. Parents, seeing the physical changes, are more likely to offer their collaboration to the school.

Teacher updating

Once the updating teams were established, general guidelines for the teachers workshops were drawn up. These were then submitted to specialists in reading, writing and arithmetic for their comments.

Three manuals with contents and guidelines on methodologies for language teaching[1] have been already produced, and another three for

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teaching mathematics.[2] The texts were gradually put together as needs arose during the course of the programme. New manuals were written based on the experience of using those already in existence and to answer new needs as they arose.

A set of cards with technical data was also drawn up, with a guidebook for the supervisors who put on the workshops in the schools.

The workshops are basically for the first through fourth grade teachers, but in many schools those from other grades also attend. Twelve sessions of two hours and fifteen minutes each are planned for each year. Each session also involves practising what is learned in a classroom situation.

Some 5 237 first through fourth grade teachers attended these workshops the first year of the programme. This number will rise to 7 209 in 1991.

"The programme has given new life to aspects of our teaching that we normally weren't doing very well. We were simply explaining things. We teach differently now". These words from a teacher in Puerto Varas express the feeling of most of the teachers who have participated in the workshops. They feel that what the programme is proposing has reconnected them with past practices and they do not see it as something completely new. This helps teachers accept the programme and value the updating as a chance to participate and recover their role as educators.

They feel that this kind of updating allows them to exchange their ideas; it gives them a sense of contributing their experience to the rest of their colleagues. The teachers generally state that they have been given useful elements for their classroom work. They claim they prefer this kind of updating to the traditional kind where they sit and listen.

Another product of this kind of updating has been that teachers and supervisors are coming to understand one another better. The supervisors are perceived as trying to help the teaching process. Before they tended to be seen as inspectors controlling what went on at school.

The supervisors also have a more positive attitude. The programme has allowed them to carry out actions in the educational sphere, giving them more prestige.

Other aspects are less positive. For example, sometimes too much importance is given to the activities and not enough to analysing the meaning of the updating and its purpose. Other times the workshops are poorly conducted by the supervisors, and learnings are not properly summarized and integrated.

Educational materials

Educational materials are given to the schools in close connection with and in function of the teachers' updating. The programme so far has provided the following materials:

- Textbooks: 125 000 textbooks were given to first through fourth grade pupils in 1990. Another 185 000 were handed out to the same grades in 1991.
- Classroom libraries: following educational, technical and aesthetic criteria, 80 titles were chosen to provide 2 697 libraries to first and second grade classrooms. Each first grade library contained 35 books and each second grade library 45. Another 1 110 libraries were added in 1991. A pamphlet was given to the teachers explaining the proper use of these libraries.
- Educational materials: the updating team chose and elaborated materials for arithmetic, reading and writing. A total of 172 400 units, each with 11 different kinds of materials, were handed out in 1990, with another 70 000 being added in 1991.
- Tape recorders and mimeograph machines: 1 700 tape recorders, 40 mimeograph machines and 739 spirit duplicators were distributed to the participating schools in 1990, and another 850 tape recorders and 480 spirit duplicators in 1991.

[1] "Tugar-tugar", "Models and projects", and "Reading the world".

[2] "Problems", "Renovating Math Class","Operational Arithmetic".

– Technical books: a list was drawn up of basic books which every support library for supervisors should have. Each provincial department was given 20 books donated by UNESCO, and 17 others donated by Spain.

These materials are greatly appreciated. One teacher from the city of Vicuña put it this way: "Thank you for the materials. My classes are livelier because I can do different kinds of work with my students. The children changed this year; I've given them more autonomy".

Teachers, supervisors, workshop monitors and school principals share this positive judgement about the books as well as the other teaching materials.

However, evaluations have shown that in some schools these materials have not been used much in practice. Some children say they have never worked with them. In other schools they are used systematically.

The classroom libraries also are used in different ways. Some teachers use them systematically; others once a week or sometimes to relax the children after a lesson that requires a lot of concentration on their part.

The same is true for the tape recorders and mimeograph machines.

In general, it can be said that teachers are slowly putting to use the new materials, hanging up written material in the classroom, having the students read in silence and do arithmetic in the head– all educational practices proposed by the programme.

Learning workshops

Even though PIIE had more than a decade of experience in learning workshops, incorporating them into the educational system was the most novel part of the programme. It was also the aspect that provoked the most resistance.

In the beginning, many school principals identified the programme with these workshops. They were rather suspicious of the workshops and in some cases simply rejected them. The principals felt that the young people from the community simply lacked the training needed to run these workshops.

The situation changed little by little. Today, most administrators have a good opinion of the workshops. Factors that helped them to change were their participation –together with the teachers– in choosing the young people and the good results of the workshops themselves.

Once the initial suspicion was overcome, these workshops became one of the strongest aspects of the programme.

Before the workshops began to function, the team met with the supervisors and elaborated a manual for working with the children using previously tested materials.[3] This manual was revised by different specialists. Also revised were the pamphlets for the young workshop monitors and three workbooks for the pupils.[4] A video was also made to help the workshop monitors.

As happened in the case of the updating materials for the teachers, the ongoing evaluation of results and needs of these workshops led to the elaboration of three texts to aid the young people: *"Educational skills and communication"*, *"Some basic conditions for the education of children"* and *"Creative instruments for working with children"*.

Three criteria were followed in selecting the young people who would run these workshops:
– that they be young –less than 30 years old– in order to facilitate contact with the children;
– that they have the confidence of the school principal and teachers;
– that they live near the school, in order to ensure a real link between the school and the community.

Among those applying for the position, priority was given to certified teachers who were not already working or university students majoring in education. A high school diploma was the minimum educational level required.

Once selected, the workshop monitors went

[3] "Discovering what we are and how we live".
[4] "My family and I", "My country and I" "The place where I live and I".

through a training session before the workshops began. Another training session was held after the workshops were under way. Some 2 086 young people were trained in 1990.

The workshops continued to develop in 1991, with the number of monitors rising to 2 766. These young people were paid US$ 50 a month for the five months they worked, August through December.

Besides participating in the training workshops, the monitors receive ongoing training from the supervisors, with whom they plan and evaluate their work.

The first year 34 000 children attended these workshops which averaged 28 sessions, each lasting two and a half hours. Close to 50 000 children are attending in 1991.

Over and above what they do for the children, these workshops provide another benefit: they provide training for the young people who prepare and carry them out. One of the monitors put it this way at the end of a training session:

"It's hard to put into perspective what we've lived through these days. I would like to thank everyone for allowing me to be here to learn and share. I hope we can carry with us to our communities the fraternal and friendly atmosphere we created here. Coming to know the kids, become one with them, living together with them makes us kids again and recovers some of that innocence. Ours is a difficult task, but we have to have confidence that we can do it, especially if we have the support of what we've learned here and contact with the supervisors".

Support for administrators

Not enough attention was given at the beginning to working with administrators. Attempts were made to correct that during 1991 by giving the participating schools a set of educational materials elaborated with the help of the Centre for Educational Updating, Experimentation and Research.

This material consists of five folders to guide the efforts of teachers and administrators, along with parents and students, to elaborate a programme for improving their school.

The themes of the folders are: the mission and identity of the school; quality of education I; quality of education II; communication and leadership in the school, and participatory evaluation.

Communications

A logo was designed for the programme and posters printed to hang in public places and in the schools. One such poster read "In this school all the children learn"; and another "Quality education for all".

A bulletin was launched during the second semester of 1990, called "Learning together". It is sent to the different schools, regional ministerial secretariats and provincial offices of the Ministry of Education. Circulation is 6 000.

Towards the end of July 1991, the schools were asked their opinion about the value of this bulletin, how they used it and what kind of information or contents would they like to see in it. The response was positive, both because of the number of schools that answered the survey and because the bulletin was valued as a medium of information, motivation and orientation.

An 18-minute video was also made to help disseminate the programme. A copy was sent to each provincial department of the Ministry of Education.

Five educational videos are currently being made to support the learning process: one dealing with the methodology of the teachers workshops, two for arithmetic and two for language.

Measuring learning

The pupils' progress can be measured by comparing the results of the SIMCE given to fourth grade students in 1988 with the results of the same test given in 1990. However, it would be incorrect to give too much weight to this comparison, since the 1990 test was given only a few months after the programme was put into practice.

A comparison of these test results points to the conclusion that 38.3% of those schools that participated in the programme from the beginning showed significant improvement; 16.2% showed some progress but continued to be deficient; and 45.5% showed no progress whatsoever at the end of the first year.

Another test is presently being revised to measure learning in language, writing and arithmetic, designed especially for the third, fourth and fifth grade students in the schools of the programme.

Achievements

From the evaluations made by the specialized teams and each provincial department, it can be stated that the overall balance of the programme is positive.

This can be summarized in the following points:

- The Ministry of Education has established an effective presence to the most needy schools, putting into action an educational policy that gives top priority to quality and equity in education.
- The teachers workshops are appreciated as an opportunity for responsible participation by the teachers and an efficient method for updating.
- The learning workshops, despite the initial skepticism, were well accepted in the schools. They were successful and the children who participated in them clearly changed for the better. They displayed an increase in creativity and initiative, as well as enthusiasm for going to school. The young monitors also valued their own participation highly.
- The educational materials, textbooks, classroom libraries, together with the updating, motivated the teachers to make a special effort to ensure that their pupils learned.

Publications

Note: The programme uses the following publications. The titles referred to in the text and footnotes were translated into English for the convenience of the reader. All of these publications, however, are only available in Spanish.

Tugar-Tugar: Manual for speaking and writing better. M. Condemarín, V. Galdames and A. Medina. Ministry of Education, Santiago, Chile, July 1990.

Modelos y proyectos: Manual for speaking and wriiting better. M. Condemarín, V. Galdames and A. Medina. Ministry of Education, Santiago, Chile, May 1991.

Leer el mundo: Manual for speaking and writing better M. Condemarin, V. Galdames y A. Medina. Ministry of Education, Santiago, Chile, July 1991.

Problemas: Manual for improving arithmetic G. Galvez, P. Zanocco, S. Navarro. Ministry of Education, Santiago, Chile, August 1990.

Problemas: Problems selected by supervisors Ministry of Education, Santiago, Chile, March 1991.

Renovar la clase de matemática: Manual for improving arithmetic G. Galvez, P. Zanocco, S. Navarro and M. Riveros. Ministry of Education, Santiago, Chile, May 1991.

Operatoria aritmética: Manual for improving arithmetic G. Galvez, P. Zanocco, S. Navarro and M. Riveros. Ministry of Educación, Santiago, Chile, August 1991.

Cinco materiales para aprender matemática: Description and ideas for its use. G.Galvez, S.Navarro, P. Zanocco and M. Riveros. Ministry of Education, Santiago, Chile, January 1991.

Descubramos nuestra forma de ser y nuestra manera de vivir: Manual for learning workshop monitors. L. Vaccaro *et. al.* Ministry of Education, Santiago, Chile, July 1990. 2nd revised edition, June 1991.

Descubramos nuestra forma de ser y nuestra manera de vivir. "Yo y mi familia", "Yo y mi país", "Yo y el lugar dónde vivo": Child's workbook for learning workshops. L. Vaccaro *et al.* Ministry of Education, Santiago, Chile, August 1990. 2nd revised edition, August 1991.

Descubramos nuestra forma de ser y nuestra manera de vivir: Manual for learning workshop

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monitors. L. Vaccaro *et al.* Ministry of Education, Santiago, Chile, July 1990.

Habilidades educativas y de comunicación: Action training for learning workshop monitors. Technical team for learning workshops. PIIE Ministry of Education, Santiago, Chile, June 1991.

Algunas condiciones básicas para el aprendizaje de los niños: Action training for learning workshop monitors. Technical team for learning workshops. PIIE Ministry of Education, Santiago, Chile, July 1991.

Instrumentos creativos para el trabajo con los niños: Action training for learning workshop monitors. Technical team for learning workshops. PIIE Ministry of Education, Santiago, Chile, June 1991.

Biblioteca de aula: Explanatory pamphlet. Felipe Alliende. Ministry of Education, Santiago, Chile, July 1990. 2nd edition, May 1991.

BILINGUAL EDUCATION BEYOND NATIONAL FRONTIERS. BOLIVIAN-PERUVIAN COOPERATION

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In this article, the authors describe the beginning of a case of horizontal cooperation between two countries of the region intent on establishing an intercultural bilingual education programme for Aymara- and Quechua-speaking peasant populations. The article begins by describing the Bolivian situation and the achievements in the field of bilingual education in the Peruvian Department of Puno - which borders on Bolivia and whose population is mostly made up of Quechua and Aymara speakers. It also describes the scope and implications of the agreement on mutual cooperation signed in Lima between the Bolivian and Peruvian Ministers of Education in March 1990. It then raises a series of considerations regarding the educational attention of indigenous populations divided by national boundaries. The Bolivian-Peruvian example is seen as providing an important background for guiding this type of bilateral action. The authors also maintain that international agencies concerned with education and culture, and in particular those belonging to the United Nations system, should promote this type of cooperation both at the level of the State and private institutions and specialized professionals, recognizing their concern for populations such as indigenous peoples which have been neglected for nearly five hundred years. Within this framework, the reinforcement of the ethnic and cultural identity of these peoples through educational programmes that contribute to overcoming the fragmentation presently affecting them, could also contribute to bringing about the longed-for Latin American integration.

Within the Latin American context, Bolivia is comparable only to Guatemala in terms of the high percentage of indigenous population out of the total national population. The national majorities in these two countries are indigenous. A large number of them still maintain their language and other manifestations of their ancestral culture. Many even conserve their condition as monolingual vernacular-speakers. Thus, for example, in Bolivia, according to sources from the last Census (Albó 1980), 63% of the population speaks one of the 32 languages existing in the country. The majority speak Quechua or Aymara.

In terms of education, Bolivia has high rates of illiteracy, dropping out and school marginalization, compared to the other countries of the region. These rates are even higher in rural and suburban areas, where the population is predominantly indigenous.

Despite the sociolinguistic characteristics mentioned and the obvious need to improve the quality of education, to date, vernacular speakers have not been offered a wide and differentiated attention at the formal educational level.

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This article expresses the opinions of their authors and not necessarily those of the institutions in which they work.

Recent initiatives are still at an experimental stage.

Fortunately, vernacular languages have played an important role in popular education and particularly in radio-broadcasted educational systems. In 1983, during the Popular Democratic Unity Government, the State itself began a literacy programme in Quechua and Aymara which standardized the respective alphabets and made them official. It was thanks to this programme, undertaken by the National Service of Popular Education and Literacy (SENALEP) that discussion began and the purely hispanicizing conception of primary schools was challenged at both the level of official agencies and teaching unions.

As some authors maintain, two stages can be identified in bilingual intercultural education in the country: "The first, involves the period up to 1983, in which some specific experiences occurred, in spite of the lack of consistent positions or proposals by interested institutions and social sectors and, thus, in a climate that was not so favourable for its development and extension. The second stage covers the period from that year onward. It is characterized by an almost inverse dynamic: a great openness in terms of the development of new approaches and strategies, accompanied by the absence of concrete and sustained initiatives" (Amadio and Zúñiga 1989, pag 49).

Among the most important previous experiences, at the level of formal education, mention should be made of the Rural Educational Project (PER I) for the Quechua population, undertaken between 1978 and 1980 by the Ministry of Education, with support from USAID, and the Highlands Integrated Educational Project with the Aymara population and with World Bank support. The latter was interrupted prior to the end of the third year. The Church also undertook a bilingual education Project (Bilingual Rural Textbook Project) in seven Aymara schools between 1981 and 1986, through the Episcopal Education Commission.

At the conclusion of their experimental phase, none of these projects succeeded in establishing themselves as alternative modes to the traditional educational system. Instead, the schools involved returned to the previous hispanicizing model.

New Stage

From 1988 onward, there began in the country, perhaps a new stage in bilingual intercultural education. With the technical and financial support of UNICEF, the Ministry of Education and Culture began planning a new project, which in 1990 was implemented in over one hundred rural schools located in areas where the three main national vernacular languages are spoken: quechua, aymara and guaraní. In 1990 around 3 000 first grade students were attended to, and this coverage will double over the next school year since work will also include second grade students.

Unlike previous experiences, this initiative is occurring under more favourable political conditions, owing to the sustained support from both teacher and peasant union organizations, and in the Guaraní case, also by the active participation of an ethnic organization: the Guaraní People Assembly.

The participation of the few non-government organizations directly involved in bilingual education has been sought and only partly obtained. Such is the case with CIPCA (Centre for Research and Advancement of the Peasantry), CEE (Episcopal Education Commission), this time involved in an experimental Bilingual Intercultural Education project (EIB) with the Quechua population, the "Masis" Cultural Centre, CENDA (Andean Development Communication Centre). The collaboration of the Teko-Guaraní NGO (Guaraní Communication and Education Workshop), for example, has proven decisive for the functioning of the project in the Guaraní area. With the exception of the Guaraní case, the relations of the organized teaching body with NGOs are still not very productive and it is hoped that this will improve over time.

From the start, the implementation of the Bilingual Intercultural Education Project is linked

to collateral efforts underway in other countries. One of its principal strategies has been capitalizing on national and international experiences. Highly useful, for example, was the series of *Support Materials for Teacher Training in Intercultural Bilingual Education*, prepared by various specialists of the region, in conjunction with UNESCO/OREALC, since there were no texts available in the country for the training and further training of teachers along these lines. These materials were particularly devised to support the training and further training at regional level of personnel interested in these subjects areas.[1]

The horizontal cooperation came about, first, in response to the lack –in terms of number and quality required– of human resources in the country, specializing in bilingual education. While it is true that it is not enough to speak a language to be able to teach it and use it as an instrumental language in the educational process, it is also true that it is not enough to have studied an indigenous language to prepare material for school-age children. Amadio and Zúñiga(1989, pag 57) comment on this aspect, almost calling upon Bolivian universities, when they state that: "A distinction should be made between specializing in linguistics, where the emphasis is on the study and theoretical analysis of human language in general (...) and specializing in applied linguistics, where the objective is to study a variety of aspects relating to teaching and learning a language (...). The implementation of EIB will require more professionals in the field of applied linguistics than in theoretical linguistics". This albeit relevant observation, warrants a special explanation: strictly speaking, in Bolivia, professional training does not exist as such in the theoretical, descriptive or applied branches of linguistics. The only university of the country that offers several linguistics courses as part of its programme for training specialists in native and some foreign languages, in the manner of North American or European training programmes of Bachelors in modern languages, is the Universidad Mayor de San Andrés in La Paz (López, 1989).

It was evident, in principle, that one could not undertake a bilingual educational project without having a national technical team. It was for this reason that, thanks to the support of UNICEF and the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), six one-year scholarships were awarded to six Bolivian teachers from the Andean area and a two-year scholarship was granted to a Linguistics graduate from UMSA, to study in the postgraduate programme of Andean Applied Linguistics in Education, of the Universidad Nacional del Altiplano in Puno, Peru. Upon completing their studies, these teachers returned to Bolivia and formed the National Bilingual Intercultural Education team of the Ministry of Education.

It was thanks to this team that the necessary activities could be undertaken and the bilingual intercultural education project could be implemented, which, from this standpoint, began beyond national frontiers.

Peruvian developments

At the time when in Bolivia the issue of taking up bilingual education at the formal education level with renewed vigour was proposed, in Peru this modality was going through one of its most interesting stages of development at a technical level and in terms of proposals and development of educational materials and human resources. The existence of the postgraduate course in Andean Linguistics and Education in Puno made the trip of the Bolivian teachers possible in mid 1988.

The collaboration with the Ministry of Education and Culture of Bolivia was made possible due to the fact that GTZ had been technically and financially supporting the implementation of a

[1] The series is made up of five texts: *Culture, Language, Bilingual Education, Community, School and Curriculum and Literacy*. These were tested on vernacular-speaking native youths who were working as teachers or who were attending teacher-training centres in Bolivia, Costa Rica, Guatemala, Nicaragua or Peru. For more information on this series refer to Amadio 1988.

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Quechua-Spanish and Aymara-Spanish bilingual education programme with peasant populations from the Peruvian Highlands. By the time this cooperation was started up, the Puno Bilingual Education Programme had already been in place ten years in the region and operating for eight years at the classroom level.

In the course of the first ten years, the Puno Programme concluded its experimental stage. During this time, educational material was developed in Quechua, Aymara and Spanish, for grades one to six in the five main subjects of the bilingual education curriculum: Mother Tongue, Spanish as a Second Language, Mathematics, Natural Sciences and Social Sciences. Thus, it became the only bilingual education experience in Latin America to use teaching material on and in the indigenous language for the entire primary school. This fact also points to the efforts at standardizing Quechua and Aymara attempted in Puno to make them polyfunctional languages; i.e., not only for informal means of communication, but also for education and cognition[2] (López, 1991). The Puno project has just been evaluated by various teams of specialists, including among these, two groups of independent professionals: one composed of an anthropologist, two teachers and two sociolinguists from the Department of Educational Research of the National Polytechnical Institute of Mexico, and another composed of four national specialists in Anthropology, Descriptive Linguistics, Applied Linguistics and Education (*Ibid*). And as a result of this, the project has entered into the consolidation stage in the Puno region and its expansion to other areas of the country with similar characteristics, within the framework of a new educational project, resulting from an agreement between the World Bank and the Peruvian Government.

Training in Highland Schools

The Puno Bilingual Educational Programme in all its activities also included the development of teacher training courses for those who had to implement this bilingual education, based on the ancestral culture in highland primary schools. It was this type of work and the reflection it led to, which gave rise, first, to the organization – together with the Puno Higher Education Institute (ISP)– of a bilingual education specialty within its teacher training programme. Subsequently, with this same institution, substantial changes were introduced into the study plans and curricula of the teacher upgrading programme for those teachers without a degree, so that now, all primary school teachers that undergo training or upgrading in the Puno ISP, also receive specialized training in bilingual education. This is with regard to both the teaching and the instrumental use of vernacular languages and Spanish as a Second Language, vis-à-vis the inclusion and treatment of Andean cultural content. This first incursion into the field of professional training in bilingual education has already produced two groups of 35 young teachers each, and three groups of a total of under 900 teachers graduating.

It was precisely within this context of concern for substantially improving the quality of human resource development programmes related to the implementation of bilingual education in the region, that operation was started up in the then novel Postgraduate School of the Universidad

[2] In this regard, those who understand the difficulty of such tasks as these, acknowledge that: "This is a revolutionary step forward. Never before has the Peruvian School had textbooks available for teaching Quechua and Aymara as subjects in *all primary school grades* (...) Note that it is not a matter of using the autochthonous tongue to *eventually* resolve a problem of a momentary lack of comprehension; note that it is not a matter of using autochthonous tongues only in the early grades when its use is necessary; it is the instrumental use of autochthonous tongues and Spanish to impart knowledge *throughout the entire elementary schooling*, from grades one to six. What an mammoth effort must have been required to create target-languages in order to teach mathematics, natural sciences, history and social sciences, in languages limited to the transmission of traditional knowledge! It was necessary to develop the ancestral languages, building up the lexicon, whether by recovering ancient terms that had fallen into disuse, coining new terms or using borrowed ones (Pozzi-Escot, 1990 page 5 ss; emphasis in the original text).

Nacional del Altiplano, of an area intended to promote research and human resource development at the level of a second specialization and Masters in Applied Linguistics for Andean region education. The Area of Andean Linguistics and Education of the UNA-P has been in continuous operation since 1985 and is currently organizing its third postgraduate class. Two generations of approximately 60 students have passed through its lecture halls, among which are the seven Bolivian professionals who are now part of the Bolivian Ministry of Education and Culture National Technical Team for Bilingual Intercultural Education.

The UNA-P Programme has brought together the best Peruvian specialists and several foreign researchers from Latin America, Europe and North America. The courses offered capitalize on both the advances achieved in linguistics and anthropological research and in the application of bilingual education in Peru. This modality has behind it five decades of work with vernacular-speaking populations, both in the Andean area and in the Amazonian region. Bilingual education in Peru began precisely in the Puna Highlands when, in the thirties, a group of Quechua- and Aymara-speaking visionary teachers began their first attempts at using the indigenous languages of the region to teach reading and writing to peasant children and adults.[3]

The present

From those early actions up to the present day, despite its being totally ignored by the hegemonic society that still marks its implementation, bilingual education in Peru has come a long way. There are now educational materials available in Quechua, Aymara and in various Amazonian languages to attend to indigenous students, particularly at the elementary level. In addition to this, there are four teacher-training centers –two in the Andean area and two in the Amazonian region– with programmes aimed specifically at teacher training in bilingual education (López, 1989). Many Peruvian students now receive a bilingual education, as a result of the operation of experimental programmes in Apurimac, Ayacucho, Huancavelica, Lambayeque, Cuzco and Puno, in the Andean area, and in Loreto, Junín and Madre de Dios in the Amazonian region, as well as through the actions being undertaken by the Peruvian Ministry of Education itself in some Andean area departments, within the framework of the Peru-IBRD II Project, and with the support of the Summer Linguistics Institute (ILV) in virtually all departments of the Amazonian region. However, it is estimated that the current coverage of this mode does not exceed 15% of the school-age vernacular-speaking population requiring this type of education.

Much still remains to be done in Peru to get bilingual education out the experimental stage that typifies it and, in particular, to achieve close ties between these efforts –which generally seem more academic than not– and the claims movements of peasants and ethnic organizations from both the sierra and the jungle. Yet, it is necessary to recognize the important role that this country has played in advancing Latin American bilingual education.

The Peruvian *know-how* in bilingual education also owes much to the interest placed by its universities and research centers - particularly over the last three decades - in field studies in rural areas and in disciplines which, like linguistics, are pivotal for developing this type of education. With regard to its third pillar, teaching, the interest of Peruvian educators in the education of their native populations increased during

[3] The first literacy primers in vernacular for peasant children and adults which we know about, were prepared by Daniel Espezúa Velasco, in Juli and published in Puno in 1931. Various educational materials in Aymara, Quechua and Spanish were later produced in Puno, where, between 1939 and 1951 the most lasting and interesting Aymara-Spanish bilingual education experience of those times took place, as a result of an initiative of the rural teacher, María Asunción Galindo. This was a pioneering experience in Peru, both for its proposals for tackling the educational problem from a comprehensive perspective and for the serious manner in which it was implemented. (López, 1988).

the seventies, within the context of the Peruvian Educational Reform (1972-1980). This established the framework within which legal instruments such as the National Bilingual Education Policy (1972), the Bilingual Education Regulations (1973), the Law Making Quechua Official (1975) and the Supreme Resolution that approved the Official Quechua Alphabet (1975), were provided, setting a new precedent in Latin America.

Background for Horizontal Cooperation

The Peruvian-Bolivian cooperation in the area of education goes back almost four decades when, in 1945, the Peruvian Minister of Education, Luis E. Varcárcel, renowned anthropologist and supporter of Indian interests and rights, met in Arequipa, Peru, with his Bolivian counterpart and the directors of the Peruvian-North American Cooperative Education Service and the Inter-American Cooperative Education Service, to sign an agreement that would permit the development of a joint rural education plan. This agreement did nothing more than make official the informal contacts that had always existed between Bolivian and Peruvian teachers concerned with the education of the peasant population. We know, for example, of visits that were carried out in the mid thirties from one side of Lake Titicaca to the other by renowned teachers such as María Asunción Galindo, true pioneer in bilingual education in Peru, and Elizardo Pérez, precursor of the Central School System in Bolivia. Contact between Puno and La Paz was, in any case frequent, and its development led to mutual influences that benefitted the rural educational system of both countries.

With the agreement signed in Arequipa, the exchange between teachers became even more frequent. Several groups of teachers were involved in a constant sharing of experiences that made the Peasant Central School (NECs) a reality. The latter was in response to the needs of the peasant population that demanded greater access to the school system. At that time, Peru had a population of six million, 64% of which was rural. This figure rose to 76% if one only took into account the sierra situation. Puno, original NEC headquarters in Peru, had a rural population of 92.3% and 88% illiteracy among its 6 to 14 year-old population (Pozzi-Escot 1988). For its part, in 1950, Bolivia's total population was slightly over two and a half million, 64% of which were considered to be indigenous and, therefore, speakers of a vernacular language. This percentage increased even more if one only took into account the Andean region. There, approximately 75% of the population spoke Quechua or Aymara (Albó, 1980; Montoya 1983).

It is for the purpose of responding to situations such as these that the Peruvian-Bolivian bilateral agreement looked at education from a comprehensive viewpoint: the education of the peasantry was seen as a "State problem involving socio-economic, sanitation, roads, agrarian, educational and juridical aspects. The solution to this problem will require the best efforts of all State agencies in both republics" (Aparicio 1955, pag 219, quoted in López, 1988). Likewise, "the right to cultural sovereignty, based on the defense of the very core of the culture itself" was then considered as the inalienable right of the indigenous population (Valcárcel, 1981, pag 352, quoted in López, 1988). The design of the peasant central school drew upon the experiences of Warisata, Bolivia and of the Seventh-Day Adventist schools of Puno, particularly in connection with the adjustment of the school calendar to coincide with the productive calendar, the organization of teacher-training programmes in the months of heaviest agricultural work and the organization in centric and satellite schools.

In Bolivia, Warisata, with his School-Ayllu scheme, maintained that the school should make its action felt beyond its boundaries and proposed a school rooted in peasant community issues: "Who knows whether the ultimate secret of each history with men be this: organization. The school should organize the sector in which it has to act, and if it does not organize it, it is not a school. Its action, therefore, does not end at the

door of the building, but rather, it only begins there. Beyond the school is the school. The vast world of our ayllu is the true classroom: the indian teaches us that. Thus, the school going beyond itself to make its action gravitate towards the living domains of the economy, religion, home, art, politics of the native indian, fulfills a social mission that every modern school should have, since educating does not consist of teaching, but rather awakening, engendering, encouraging, pushing..." (Pérez, 1962, quoted in Rivera, 1987, pag. 74).

In Peru, NEC action, in its early years, also included the initial native tongue literacy programmes for which *Yateqañäni* and *Yachasunchis* primers were produced, based on the materials developed in Aymara by teacher María Asunción Galindo, in the thirties and forties, for her Ojherani experiment (López, 1988). The use of students' own native tongue constituted one of the building blocks of the central school's educational action as well as of her work on communal projection, since it was considered that in working with peasants "no other intellectual vehicle remained but their native tongue" (Varcárcel 1981, pag. 350), quoted in López, 1988). The defense of things-indigenous was a repeated concern of those who were involved in this Andean educational experience. Thus, Valcárcel's plea for a change of approach in dealing with the native indian, estimated that "the native should not be incorporated into civilized life... but rather Western civilization should incorporate itself into the life of the native indian, respecting and enhancing the eminent virtues of this human group that has brilliantly enriched universal culture... (It is necessary to consider that) each man is born within a given culture and only voluntarily can he adopt elements of another... (From this standpoint), defending the conservation of the cultural personality of indigenous groups does not mean proposing that they be set apart or segregated from national life, but rather that they be included in it without renouncing their personality, because a nation cannot simply be the sum of homogenous units, but rather the active coordination between different groups" (*Ibid*).

Ten years work

The Peruvian-Bolivian cooperation within the NEC framework involved over ten years of continuous exchange. Subsequently, when the Puno Programme for Bilingual Education was already fully implemented, trips by professionals concerned with teaching Quechua- and Aymara-speaking populations, recommenced when Bolivian specialists, linguists, teachers and distinguished reverers of Andean languages were invited to participate in both the training course organized in Puno and in workshops for developing educational materials in vernacular language, with the understanding that it was necessary to opt for common solutions in the treatment of peoples artificially separated by the Peruvian-Bolivian frontier.

The construction of the Aymara alphabet, for example, was a precedent in the pursuit for common solutions. In 1983, a happy coincidence occurred once again, since in both Peru and Bolivia meetings were organized to review and make Quechua and Aymara alphabets official. In Bolivia, this occurred within the framework of the literacy campaigns implemented by SENALEP and, in Peru, as a result of eight years of application of the 1975 Official Quechua Alphabet. In Bolivia, meetings were held in Cochabamba and La Paz. They concluded with the approval of the Aymara and Quechua alphabets in August 1983.[4] In Peru, the event was organized by the Universities of San Cristóbal de Huamanga of Ayacucho and San Marcos of Lima, in October 1983.

When in Peru the discussion revolved around the writing of Quechua and Aymara, the Bolivian meetings had already reached an agreement.

[4] Representatives of the Puno Programme were also invited to the Cochabamba seminar, both to share information with their Bolivian colleagues regarding EIB in Peru and also to exchange points of view on the Quechua-Aymara alphabet (Albó, 1987).

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Thus, despite the technical and political considerations that recommended the formulation of a common alphabet for Peruvian Quechua and Aymara, the same alphabet had, months earlier, been decided on for Bolivia. For this reason, it was always born in mind that it was in the latter country where the Aymara constituted a majority and where precisely the Aymara metropolis *Chuquiyawu* (La Paz) was to be found (López and Llanque, 1987). From then on, Aymara is written on both sides of the Lake following the same conventions, given that the official Bolivian and Peruvian alphabets fully coincide. It is to be hoped that in the near future a similar solution may be arrived at, so that all documents written in Quechua can be read from Ingano territory in the south of Colombia all the way to Santiago del Estero in the north of Argentina.

The mutual Peruvian-Bolivian support was enhanced when the Puno Universidad Nacional del Altiplano invited two Bolivian linguists to support the running of the Postgraduate Class in Andean Linguistics and Education, by giving some courses and seminars. On the other hand, several Peruvian linguists participated in academic events held in Bolivia, and have also supported the implementation of bilingual education programmes in that country.

The new agreement and its implementation

New ties were forged between Bolivia and Peru when, in March 1990, the two Education Ministers signed a cooperation agreement in Lima. Thanks to this agreement, teaching material can be adopted, adapted or reproduced in Quechua, Aymara and Spanish as a Second Language that has already been produced or is being produced on one or the other side of Lake Titicaca.

Following are the salient parts of this agreement:

> "Art.I: The two Ministries agree to mutually support each other in developing Intercultural and Bilingual Education, promoting the permanent exchange of experiences and Quechua and Aymara educational material.
>
> Art. II: The Ministry of Education of Peru authorizes the adaptation and/or reproduction of Puno Bilingual Education material for use by the Ministry of Education and Culture of Bolivia (...).
>
> Art. III: Likewise, the Ministry of Education and Culture of Bolivia reciprocally pledges in future to send the Ministry of Education of Peru any materials it produces on Bilingual Education for its adaptation and/or reproduction (...).

The reasons that prompted this agreement arose from the need to take advantage of the great experience accumulated in the Puno Programme in connection with the development of educational material. As is well known, this project dedicated its efforts primarily to this aspect. But, according to the results of its evaluation, it was considered that more emphasis needed to be given to directly working with teachers in service and with the communities themselves. The time it takes to produce the educational materials –in itself an arduous and delicate task– is considerably increased and needs specialized personnel, owing to the difficulty of preparing educational materials in pre-standardized languages such as Quechua and Aymara, and of using them to develop an educational process that has them as vernacular languages. In other countries, as for example those in Southeast Asia, the tasks of idiomatic development and standardization, such as those inherent in the Puno work, are normally promoted by the national States themselves and implemented through their specialized agencies and higher education centres. In Latin America, challenges such as these are still far from being assumed by the State, and the fate of native tongues is left to isolated academic efforts and experimental projects in bilingual education. In Puno, for example, the preparation and validation of educational material for all elementary grades took twelve years. And, as stated, the task took on such importance that it neglected other equally important and necessary aspects of the work (López, 1991).

In the case of a new project such as Bolivia's,

it would not have done to start from scratch and dedicate time to pursuing linguistic and technological solutions that have already been found by others, at the risk of repeating the same mistakes vis-à-vis the direct service to teachers and heads of households. Therefore, it was considered timely to take advantage of the experience on the other side of the border, and to pay attention to those aspects most related to in-field monitoring and to the task of *advocacy* in bilingual intercultural education. It is hoped that time will prove that in Bolivia all the importance, time and care required have been able to be dedicated to teacher training and to permanent *in situ* accompaniment. Hopefully, those involved in implementing this legal instrument, will not be moved by the human urge to reinvent the wheel, insisting that everything be done anew, investing time and resources which are never in abundant supply, when it comes to carrying out a true educational reform.[5] We believe that it is necessary for those of us who are involved in developing bilingual educational or rural educational programmes to become aware of the dimension of the task at hand: more than the mere implementation of a new, experimental educational programme, it is a matter of laying the groundwork for a true educational reform in, for and with indigenous populations. And within this framework, all tasks are equally important: the development of educational material, the training of teachers and the heightening of the awareness of heads of households.

Adaptation and use

Within the framework of the new agreement, the adaptation and use of Puno materials in Bolivia is made possible and even necessary by the historic and cultural continuity that characterizes the Quechua and Aymara peoples, and since the cultural content included in these textbooks also reflects the cultural heritage of the Quechua and Aymara peoples across the border. On the other hand, variations in dialect between the Puno Quechua and the Bolivian varieties of Quechua are less prominent than the variations in dialect within the same Peruvian context (Cerrón, 1987). With regard to the Aymara, this problem is virtually nonexistent.

It is important to point out that, when the agreement of mutual cooperation was signed, the EIB Project of the Ministry of Education and Culture of Bolivia was already about to be introduced into Quechua, Aymara and Guaraní classrooms, but it still lacked the complete package of teaching material for the first school year. Neither the Ministry's Technical Team nor the Episcopal Commission on Education had the time to –for instance– develop material in Mathematics, since the main efforts had concentrated on reading and writing and on manuals for oral Spanish as a second language. On the other hand, there was no research done in the country at a grass-roots and evaluatory level similar to the research that had been done in Puno to support and accompany the decade of bilingual education.

At a year from the signing of the contract, various activities have already been carried out. The educational material developed in Quechua and in Aymara for the grade one Mathematics course has been adapted. And, to date, the textbook and manual developed in Puno for teaching Spanish as a Second Language in Grade Two

[5] These constraints also occur within the countries themselves. Thus, for example, one is surprised to learn that in Bolivia, when the MEC, EIB Project had already developed and implemented for an entire school year, grade one material in Aymara, the University of San Andrés, within the framework of an OAS-financed project, in November 1990, published teaching material in the same language and again for grade one students. Likewise, in the Puno area in Peru, after more than eight years of the afore-mentioned project implementation, two other rural educational programmes –one funded by FAO and the Government of Switzerland and the other by the Government of Sweden– began to be implemented without being closely coordination with the bilingual education experience that was then at the stage of being consolidated and expanded. Oftentimes, this is the result of, on the one hand, a lack of coordination among financial agencies, and on the other, of personal and/or institutional attitudes that seek to put their stamp on activities aimed at cultures in which the collective supersedes the individual.

are being adapted. Likewise, the teams in charge of preparing Quechua and Aymara materials for the same level have the proposals, methodological designs and activities from the Puno books to fall back on.

The utilization of the Peruvian experience is not limited to the EIB textbooks and manuals. It also involves the utilization of other auxiliary material. Such is the case of the *Yupana*, an abacus from Incaic times, recovered by the Puno programme for teaching mathematics within the bilingual education in the Andean area. As occurred years before in Peru, the widespread acceptance of the *Yupana*, both in the rural contexts by those for whom it was recovered, and in urban areas where it was also adopted. In Bolivia this instrument has had greater acceptance than expected. For this reason, despite its being an Andean abacus, the *Yupana* is also being used in Guaraní schools, since EIB project teachers consider it to be a useful tool for teaching Mathematics.[6]

It is important, here, to make some reference to the role played by intellectuals and cooperation agencies in connection with joint activities for nations divided by frontiers. While some aim at enhancing the ethnic identity beyond State limits and promoting agreements –such as the one mentioned– and linguistic standardization, taking advantage of all experiences towards unifying this "Profound America" –to paraphrase Bonfil Batalla (1989)– others consider that each country should make its own efforts, getting lost in outmoded nationalisms. With the heightening of Creole-bourgeois nationalisms one loses sight of the unity of indigenous peoples.

Hopefully, Inés Pozzi-Escot's invocation (1990, pages 8-9), which appeared in the speech delivered on occasion of the above-mentioned agreement we mentioned, will come true over the next few years:

"An educational conception such as this Intercultural Bilingual Education and a collection of materials such as these, are annulled if there are no teachers trained or educated who understand them and incorporate them into classroom life (...) Consequently, it is my plea that the mutual aid programmes between our sister republics of Bolivia and Peru, carefully take on the plans for teacher training and further training in the immediate future, as well as measures to achieve the greater stability and social recognition of Andean rural teachers without whose cooperation and mystique no change would be possible. They must also feel that justice is finally being done by them. Not all has been said and done. But with these materials and the intercultural bilingual education which they put into effect, Bolivia and Peru will fulfill a very important stage in the demands of the indigenous peoples of Latin America".

Scope of the horizontal cooperation in bilingual intercultural education

The Bolivian strategy to advance bilingual education, based on the previous experiences undertaken in a neighbouring country, is an example of how in Latin America efforts can be joined towards a better implementation of an educational mode that still cannot break through the constraints of experimentation, isolation and limited coverage. Now, in Bolivia, less emphasis needs to be placed on a task that is in itself arduous, such as the development of educational materials in indigenous languages and in Spanish as a Second Language. Instead, other equally important areas can be reinforced: teacher training, EBI dissemination and promotion and, linked to this, working side-by-side with those primarily involved i.e., indigenous societies and their grassroots organizations. In this way, it is also possible to reallocate ever-scarce financial and human resources to deal with aspects such as the aforementioned. These are essential for the future of the modality, in terms of its definitive and real insertion into official plans and programmes and into the national educational system.

It was precisely in addressing these same

[6] In Peru, this abacus has already been commercially produced, and it can also be found in urban private schools.

arguments that in mid 1990, the National Bureau of Bilingual Intercultural Indigenous Education of the Ministry of Education and Culture of Ecuador, contacted the Peruvian authorities to request authorization to adapt and reproduce the texts of Spanish as Second Language, developed in the Puno Bilingual Education Programme for grades three and four, for use in the primary schools of the EBI Project of that country. Thanks to this decisions, the team responsible for preparing the EBI Second Language material was able to dedicate greater time to teacher training. And now that the Ecuadorian version of these textbooks is in use, they will also be able to supervise its implementation, help the teachers and gather data that will allow for its improvement.

But, in addition to the practical advantages such as those mentioned, it is also necessary to mention other projections that derive from a cooperation such as the one described here. Here we refer primarily to the standardization of indigenous languages and the heightening of the indigenous identity, in connection with the attention to border populations.

As is well known, there are numerous cases of American Indian peoples, whose ancestral territories are crossed over by the national frontiers of current Latin America republics. These situations affect the normal development of various macroethnic groups, which is the case of the Quechuas, Aymaras, Quichés, Zapotecs, Mapuches, etc. The Quechuas are perhaps the clearest example of this situation.

The Quechuas

Despite the difficulty of obtaining reliable figures to get an idea of the indigenous demographic reality –resulting from the conditions of oppression and social exclusion under which the population currently lives and which prompts the negation of the respective ethnic or linguistic affiliation– some estimate the total Quechua population to border on nine million inhabitants at least (Cerrón-Palomino, 1987). Others, however, consider that the latter could easily exceed fourteen million (Rodríguez, 1983).

Whatever the case, it is clear that the Quechuas are currently divided among five different countries at least: Colombia, Ecuador, Peru, Bolivia and Argentina. While most are found in Ecuador, Peru and Bolivia, which in itself contributes to their survival, this division seriously affects two peripheral groups that are true minorities in their respective countries: the Inganos in Colombia, barely exceed seven thousand inhabitants, and the Argentine Quechuas of Santiago del Estero, Salta and Jujuy currently do not exceed one hundred and twenty thousand (1983 and 1987 estimates by Rodríguez and Cerrón-Palomino, respectively). Should the existence of Quechua-speakers be confirmed in western Brazil (Gnerre 1979, quoted in Cerrón-Palomino, 1987), their condition in Brazil would be even more precarious, since they could number no more than seven hundred.

Just like the majority indigenous groups of the Andean Region or Central America could see themselves affected by their location in different countries, this also occurs with minority indigenous groups. In fact, rather than being the exception, it is the rule for most Amazonian indigenous peoples. Thus, for example, the Bora, which number no more than fifteen hundred (Rengifo, 1983), are separated by the Peru-Colombia border; the Choroti (Matacos), only six thousand (*Ibid*), are separated by the Paraguay-Bolivia border and Paraguay-Argentina border; the Yanomami, twenty-five thousand (*Ibid*), by the Venezuela-Brazil border and the Myba territory, with eleven thousand inhabitants (*Ibid*) is divided by the Paraguay-Brazil border and Paraguay-Argentina border.

The indigenous groups themselves have been the ones who called our attention to these facts and to the ways in which the situation affects their normal development. In the two meetings held in Barbados, several American Indian leaders stressed "the problems (stemming from the lack) of territorial unity of the Indian nations, problems originating with the colonial and neocolonial allotment of these historic spaces" (Barbados Group, 1978, page 14). In the Decla-

ration of Barbados II, the problem was stated within a greater context:

"The problem of our population is summarized as follows: A situation of cultural and physical dominance which varies from subjugation by a white or Creole minority, to the danger of extinction in countries in which they constitute a small percentage of the population.

Indo-American peoples are divided internally or amongst themselves owing to the action of: integration, education and development policies, western religious systems, economic categories and the frontiers of national States" (*Ibid*, page 391).

Fateful Consequences

This fragmentation has dire consequences in terms of the means of expression of these societies. On the one hand, the physical isolation itself and the need to respond and to relate to different hegemonic metropolises and centres also leads to a linguistic fragmentation and to a gradual differentiation which, day by day, makes the likelihood of mutual comprehension more remote. Contributing to this are both the dysglosia and the asymmetry that prevail in the socioeconomic and cultural relations between indigenous peoples and the hegemonic societies of the countries in which they are inserted, in terms of the agraphic nature of their societies.

Within this context, indigenous languages are dramatically influenced by the dominant language. This fact is not only detrimental to their creative and productive mechanisms, but it also affects the very internal structure of these languages, now reduced to minorities. The situation becomes more complex in those situations in which the language of the hegemonic society with which the indigenous language is permanently in contact and in conflict is not the same.

This is the case, for example of indigenous societies that are located on both sides of a border separating a country, that has Spanish as an official language, from Brazil or another country that has a different European language as a hegemony. Within these contexts the position of the indigenous language is weakened even more, and linguistic processes are generated that contribute to a greater distancing between their dialects.

On the other side, the often exacerbated nationalist sentiments of countries and the very historic background that determined the establishment of political frontiers at the edge of ethnic boundaries, make it difficult for possible bilateral understanding to occur, and for the capitalization of experiences and works undertaken in the various nations which the speakers of a same language are now a part.

This is what happens, for example, with the construction of alphabets for many indigenous languages and with the definition of idiomatic and educational policies for the various segments of the same ethnic and linguist group. To illustrate this, it is enough to refer to the problems currently faced in both Central America and in the Andean Region, in relation to the standardization of writing for the Mayan and Quechua languages, and the notable differences that exist in terms of educational and linguistics policies between Chile and Peru/Bolivia, in terms of the attention afforded the Aymara-speaking population. The existence of differentiated policies, as can be understood, leads to the undermining of ancestral languages and, in fact, has a correlation at a more psychological and social level.

The language fragmentation described, the lack of common solutions for working with one and the same nationality and also the intervention of linguists with purified descriptivist training, who in their work ignore the diachronic perspective,[7] all help to form attitudes and opinions among the indigenous population that tend

[7] This is precisely one of the reasons why, with due reason, the work of the Linguistics Summer Institute (ILV) with indigenous languages of America is criticized; descriptivism at all cost leads them, more often than not, to conceive of indigenous languages as overly fragmented entities that do not allow for intercommunication beyond small communications whose interrelation and contact have not been interrupted, thus wishing to ignore both the historical conditioning factors themselves that led to

towards the negation of their own heritage and to the overvaluation of the hegemonic, within a context which is, in itself, unfavourable to the ethnic and cultural revitalization of these peoples.

The view that is generally held by vernacular speakers regarding their own languages runs counter to this, and disproportionately favours dominant languages and cultures, which are seen as the only means for social mobilization and for overcoming the stigma of being a native indian. "Colonial history and its neocolonial extension, transmitted in a prejudiced manner with regard to indian populations, in terms of their scientific knowledge, their philosophies, their languages, their social structures, etc., and which is the socially accepted one by the Creole-mestizo populations as history and true knowledge, has led a sector of the indigenous population to introject part of the whole set of justifying ideological principles used by the colonizer-dominator, and take them to be the historic and explanatory truth of their daily lives. This in turn imposes upon them attitudes of rejection towards their own language" (Rodríguez, 1982, page 187).

Paths Towards Advancement

It is due to this type of evidence that efforts have been made with indigenous populations in recent years, and in virtually all countries in the continent, to find paths that will contribute to overcoming the current fragmentation of the ancestral languages of America, as a means to also achieve a heightening of the psycho-social and cultural identity of their speakers. To date, these efforts have exclusively related to the implementation of bilingual education programmes. They also derive from a concrete and pragmatic need: the teaching of and in vernacular is destined to become a task that will be truly impossible to implement at the scale and coverage required, if it is considered indispensable to develop different educational materials for small groups of students, each of which uses a given dialect within a same language.

If one truly wishes to arrive at quality education for all indigenous students of the continent, it will be imperative to also design an economically feasible strategy. Language planning processes such as the written standardization of indigenous languages contribute to this end, since they make it possible to prepare educational material in indigenous languages for sizable numbers of the student population.

As an example of this it would be enough to mention the efforts undertaken in Peru towards constructing a standardized system of writing for the Quechua that would allow peasant students to be educationally catered to in their own language. These students inhabit the entire region known as the "Indian stain" –which extends from Ayacucho up to the border with Bolivia– and in which the majority of the Quechua-speaking population in that country is concentrated.

The achievements obtained in Ecuador throughout the course of the decade in which EIB was implemented, provide a real background

this fragmentation and to the evolution of European languages and their current unification. And the fact is that, institutions such as these do not separate their linguistic work from the ideological motivations they serve: i.e., the assimilation of indigenous populations to the flow of hegemonic societies of the continent. Unfortunately, many Latin American linguists, perhaps unwittingly, make the same mistakes under the pretext of scientific objectivity. As Rodríguez clarly pointed out (1982, page 189) "Added to the systems of colonial fragmentation (territorial, administrative and religious, etc) is linguistic fragmentation, ideologized by the scholars of indian languages, most of who make taxonomic-type studies prevail over the overall reflections of the specific contents of a language that is expressed and inserted into a culture. There is a certain "forgetfulness" of the fact that language serves to communicate knowledge, and emotions, memories and thoughts from and about men and nature; the social fact of language is left to one side, favouring its synchronic study, voiding its content. The work of linguists cannot and should not be removed from the rest of social disciplines as a whole, given the real circumstances raised by the current multilinguistics, and much less of the reality of native speakers". With regard to the objectives of the ILV linguistic task, refer, among other documents, to the "Política Coloniasta de ILV" in Barbados Group, 1979, pages 397-400.

for efforts such as the Peruvian one. They have recourse to standardized writing, regardless of the differences at the surface structure level between the different oral varieties of Ecuadorian Quechua.

In the case we are now dealing with, Bolivian bilingual education can now be enriched not only by the Ecuadorian historic background, but also by one that is much closer to it, which developed within a more similar idiomatic and sociocultural context, as is the case of the Quechua- and Aymara-speaking Peruvian *Collasuyo*.

It is thus necessary to state that the written standardization of any language which is dialectically fragmented, transcends the level of alphabet definition and actually involves the entire task of coding. An example of this would be what occurred almost five centuries ago with Spanish and with other European languages such as German. In the case of indigenous languages, the scope of such an undertaking today becomes much larger, since it involves converting them into polyvalent means of communication. These will have to respond to present-day challenges, and specifically, to the need to become valid tools for transmitting and creating knowledge; in other words, we are attempting to convert these languages into instruments for communicating and for cognition within a context of dysglosia that daily limits their expressive capacity.

Encouraging efforts

This is why it is encouraging to learn about efforts aimed at standardizing the written systems of indigenous peoples separated by borders, and of highlighting the importance of bilateral agreements such as the Bolivian-Peruvian one.

In recent years, workshops have been held in both Ecuador and Colombia to discuss the Awa alphabet, and in Colombia and Venezuela to discuss the Wayuu alphabet (Guajiro).

Occasions such as these remind us of requests made to governments and international agencies in specialized events. This was the case, for example, of the regional seminars promoted by UNESCO in 1985 and 1987 in Lima and Buenos Aires, respectively. Thus, in the one held in Lima, it was agreed that international agencies be requested to "foster and promote encounters between government delegates, specialists and members of ethnic groups whose territories are divided by frontiers" (UNESCO/OREALC, 1986, page 45). And in the one held in Buenos Aires, one of the committees specifically considered that: "The standardization of writing in undivided indigenous languages that are crossed by current political borders...should be promoted". In addition, a basic table of symbols was presented that could prove useful in developing alphabets for Amerindian languages (UNESCO/OREALC, 1987, pages 47ss).

At this same event, it was also proposed that a project be implemented, aimed at providing advisory services for the implementation of bilingual intercultural education for the wayuu ethnic group from the Colombian-Venezuelan border. This action was later sponsored by UNESCO/OREALC (*Ibid*).

But, in addition to concern for the standardization of writing, over the last decade the need has been increasingly raised in Latin America to linguistically and stylistically develop indigenous languages with a view to standardizing them both in a purely language sense and socioculturally.

In the Andean area –as we mentioned– these actions have been successfully undertaken in both Ecuador and Peru, within the framework of specific bilingual education projects.

With regard to Bolivia, the task of standardization and the development of bilingual education have recently begun. But they already have the advantage of having recourse to significant background information that can and should steer their action, both with respect to the Quechua and Aymara. On the other hand, Bolivia convened an important meeting in which there was analysis and some initial agreement on formulating criteria and even adopting certain specialized lexicons, to make it possible to teach the indigenous language itself and to use it to teach

other subjects. This occurred within the framework of an important regional seminar held in Santa Cruz de la Sierra in October 1989 (MEC/UNESCO/ICI/UNICEF, 1989).

It is hoped that all Bolivian, Ecuadorian or Peruvian institutions which undertake bilingual education actions will adhere to the Santa Cruz agreements, so as to make the standardization of Andean languages possible in spaces that also transcend national frontiers.

Standardization

But the fact that the standardization of ancestral languages of America is seen as an unavoidable task does not only respond to a pragmatic and prominently linguistic nature. Laying the groundwork for and making the standardization of a language viable albeit at a written level, is intimately tied to possibilities that go beyond the level of communication. To put indigenous languages on an equal level of expression as the so-called languages "of culture" also presupposes encouraging the emergence of psychosocial and cultural processes within current indigenous societies for overcoming the conditions of ethnic and language shame that are often generated as a result of oppression, marginalization and silencing that have prevailed in the contact between vernacular and Spanish-speakers.

Under these circumstances, vernacular speakers may see their own language and culture as diminished tools lacking real value within the socioeconomic context in which they currently live. These feelings have serious repercussions in their self-esteem and self-confidence.

Engaging in bilingual intercultural education, from the standpoint of language standardization and ethnic and cultural revitalization can contribute to reversing apparently inexorable processes and to building secure individuals with a definite identity. Several case studies undertaken in the area of bilingual education programmes within the continent already show us how it is possible, within the school, to promote the perpetuation of essential values, secure the use of one's own language and instill self-confidence in indigenous students so that they can actively take part in the development of their education and even adopt elements from the surrounding society, without this necessarily proving detrimental to their own heritage. And if, in addition, a feeling of belonging to a people that goes beyond national borders is fostered and a feeling of pride is awakened in native students of belonging to an ancient civilization that has contributed much to universal culture, then we will be faced with unimagined situations, that nevertheless will tend to overcome the isolation and marginalization to which the indigenous survival in the continent seems destined.

A Lesson in Tolerance

Who knows if in the face of the incapacity shown by those of us who belong to hegemonic sectors of the continent to make Latin American integration a reality, it will not be the native people who will once again give us a lesson in tolerance vis-à-vis differences and in how to truly and respectfully coexist with others and their cultural, religious and linguistic manifestations. After all, the indigenous populations have the greatest experience in Latin America in permanently interacting with different peoples.

If international agencies[8] –in particular those that belong to the United Nations system– and bilateral projects take into account the conditions of indigenous peoples separated by borders, who knows whether we would not soon put an

[8] The role that international agencies could play in these processes was described in the Buenos Aires workshop, thus: "With regard to the cooperation between bordering countries in which the same ethnolinguistic groups exist, divided by borders (...) one would have to heighten awareness in this regard, in order to take advantage of the existing experiences and material on a same ethnic group that is divided among two or three countries, and to create a favourable climate for undertaking initiatives where still no major action has been taken. The backing and support that international agencies could offer are determinant for this purpose and a more active role on their part was recommended". (UNESCO/OREALC, 1987, page 81).

end to all these histories of border conflicts and misunderstandings that do no-one any good. In order to make this Utopia possible, from the vantage point of education, it will be necessary to give the indigenous peoples back their self-confidence, which even to this day we continue to take from them. Following this route, bilingual intercultural education is destined to play an essential role, also beyond national frontiers.

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NEW ASSIGNMENTS FOR TECHNICAL AND PROFESSIONAL HIGH SCHOOL EDUCATION. GUIDELINES AND STRATEGIES

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The experience of Latin American countries with technical and professional high school education has been a long and costly one. It is necessary to recover this experience in order to reverse the situation and to deal with the new social requirements that open the way for the recommendations proposed to this effect. The history and establishment of concrete institutions that administer this type of education, to a large extent determine the limits and possibilities of change. This experience has very distinct characteristics: Significant "heterogeneity" between countries and within them. In the past, the growing number of graduates from primary schools and the burgeoning and socially heterogeneous high school population in educational systems, led to the creation of schools that differed from general ones. Often, they emerged to train popular sectors for their immediate incorporation into more modern jobs, while at the same time excluding them from higher education. But the pressures these sectors of the population exerted in order to have access to more advanced levels of education progressively forced the creation of a wide variety of high school technical education institutions - some bivalent and others terminal.

Latin American heterogeneity is expressed in the following traits:

The different role played by technical and professional high school education in terms of:

- the number of grades in elementary (or basic) mandatory education, which in some countries only includes five grades, while in others it extends to eight or nine grades. The period from which this greater duration of basic schooling dates also differs;
- the terminal efficiency of the preceding level, which determines the effective size of possible demand;

The unequal contribution in its quantitative growth and in national coverage;

The establishment of institutional limits and differences according to very different criteria. On occasion, by area of working activity to which the training is oriented (agricultural, industrial, services, commerce), in others by source of financing: public, private; by geographic scope, in terms of the administrative governmental divisions (federal, state, municipal).

The nature of the relationship that is established between general high school, technical high school and vocational or professional training at the same level, in terms of the institutional limits and areas mentioned in the previous paragraph. In some countries, technical education is integrated at an institutional and curricular level to general education, while in others it is left out altogether of the formal educational system.

Different weights of State or private responsi-

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bility for this type of education. The Chilean experience is noteworthy in this respect, although it still has not been evaluated in overall terms, where the administration of technical teaching establishments passed on into private hands linked to enterprises, while the State retained financial responsibility, subsidizing them per student registered.

The different modes for obtaining and channelling funds between countries and even between institutional modes within the same country.

The heterogeneity of the results obtained, essentially according to the institutional modes - and particularly according to specific educational establishments within the countries. Although one may generalize as to the existence of results that are very much inferior to the ones pursued, some technical high schools meet their objectives very efficiently.

The difference in the (legal and real) value of the certificate granted, in particular with respect to the possibility of continuing on to higher education.

Constants

Despite the heterogeneity, there are some characteristic constants in Latin American high school technical education:

The fact that technical education does not arise from a distinctive social experience, but rather from centralized governmental decisions, which, in adopting the international recommendations at the time, consider the former to be an important factor in the economic development of the countries. The preceding forces one to carefully espouse the recommendations proposed.

The conceptual confusion, arising from a real confusion, in the terms that undividedly designate it as "technical" and "high school", both at the educational level and at the working level. This confusion is frequently combined with the assigning of very diverse, disperse, contradictory and ambitious institutional objectives.

The curricular orientation and the training rationale of this type of education is mainly derived from the objective of orienting its graduates directly to employment (not to work):

- for various reasons, the thrust favoured has been that of gearing institutional training towards very specific actions, preset in positions, and areas of activity within the most modern sections of the services sector in the production system. These positions are generically and simply assigned the term "intermediate" within the working hierarchy;
- the training offered has attempted to dignify certain occupations, increasing the education that leads to them in an attempt to establish a link between the high school level and the intermediate level foreseen in the working hierarchy;
- likewise, attempts have been made to innovate certain occupations at intermediate level, declared to be necessary for the economic development of the countries, or for the solution of certain social problems.

An important characteristic has been the establishment of models furnishing educational institutions with sophisticated imported equipment that has contributed, to a large extent, to the very high cost of this type of education. Besides, this equipment is inadequate both from the standpoint of teaching and from the possibility of its use, depending on the resources (of all kinds, including know-how) available for this purpose.

Quality of the process

The enormous disparity between the stated objectives and the consolidation of the institutional levels that would guarantee the quality of the educational process:

- the (stated) objective of favouring employment, has proven inefficient in the face of the serious Latin American problem in this respect and of the heterogeneity of working sectors. Work, for a long time conceived as employment, orients educational action only as a point of arrival for the graduate; a long process was needed before actually using it as

a curricular source and as a point of learning;
- the training offered proves ineffective and weak in terms of its consequences, importance and social relevance;
- there has been a notable lack of institutional support for building and consolidating the specifics of an educational mode that, in all respects, seemed to be an innovation in Latin American countries;
- there was an indiscriminate shift in teaching schemes from general education to technical education. For example, the organization of knowledge to be taught with a heavy disciplinary load, schedules geared predominantly to "classroom" work, excessively rigid school administration and legislation, vis-à-vis the flexibility that would be required by the implicit innovation in teaching and the stated coordination with the production system;
- significant discrimination occurs between the academic teacher (who works exclusively in the classroom and has a university degree in his c.v.) versus the "technical" teacher (who works in the workshop and whose c.v. features working experience over university training).

The great disparity between the institutional and financial efforts dedicated to this type of education and the results obtained in terms of:
- the scarce demand that technical schools elicit, as compared to general propaedeutic, scientific-humanistic schools;
- the low prestige they achieve as compared to general propaedeutic, scientific-humanistic schools;
- the tension that is generated between the number of careers and working areas that they intend to include, and the replay of supply and demand, in keeping with which registration and institutional efforts are concentrated into very few careers, mainly service-oriented ones;
- the cost of technical education is higher than general education.

The socioeconomic segmenting that arises as a result of the population that mostly registers in them and the jobs to which they are oriented; in any case, this is conducive to a certain educational mobility, that favours the new generations from popular socioeconomic sectors.

In short, high school technical education has developed on the basis of constant tensions between what the institution says it wants, the educational supply that it succeeds in forming, the national and sectoral distribution of the latter, students requests and what graduates achieve in the labour market.

Boost to technical education

National governments have played the most important role in promoting high school technical education in most countries, and their decisions have determined the priority that it has or has not reached at varying times in its recent history.

The structural adjustment that States have been undergoing, which begun to be manifested in the early eighties, led to radical declines in the financing schools required and in the outright devaluation of teachers wages. The development of high school technical education was affected to a greater extent than other technical and educational modes.

In light of the lack of resources and the extremely discouraging results of these schools, there is serious questioning as to their very existence; national priorities concentrate on basic education, on the one hand, and on science and technology at an advanced level, on the other.

It is suggested that high school education be standardized under the general scientific-humanistic education model. Efforts are made to delegate the financing of technical education to state or local government or to production sectors. This kind of "decentralization" is assumed exclusively for financial reasons, and not for efficiency and teaching quality.

Lack of research

Some of the main problems attributed to technical education are not supported by sufficient research.

It is known that technical education involves a higher cost than general education, attributed to the installation and operation of the technological infrastructure with which it has been equipped. Ultimately, the sectors that determine it are unknown, given the sizable temporal variations that result from construction times vis-à-vis those of subsequent development, for example, or the weight of full time teachers compared to part-time ones. No studies have been done on the differences between the modes implemented for financing it, nor on the impact these have had in terms of the cost of education or in terms of the quality of the training achieved.

It is argued that graduates from technical high schools have less chance of finding employment than those from general propaedeutic, scientific-humanistic schools. But, in fact, no research has been done that takes into account the differences by sector of the labour market, by geographic area, by type of career, by type of institutional mode, by dynamic and business cycle variations, etc.

In the evaluations of technical high school education no consideration has been given to the long-term effects that the latter may have.

Achievements

In its recent history, which in some countries began in the late fifties, technical high school education has had significant experience leading to the following results, which can be qualified as achievements, compared with other modes of high school education:

It is the one that has best experienced a training based on the exact sciences and on technological development; this experience includes aspects of:

- physical infrastructure and equipment, with significant emphasis on the high number of workshops and laboratories per number of classrooms and in hours of practice per hours of theory;
- a curriculum structured to a large extent according to labour problems and not those of the academic disciplines, and which has generated significant opportunities for learning in workshops and laboratories and even outside the school;
- a teaching body qualified in the specific teaching areas that the training requires, where work is seen as pivotal.

It is the educational mode that has best achieved a much broader valuation of work; for some time now, it has afforded greater integration between intellectual and manual work and which now clearly shows up as characteristic of the new technological developments.

It is the educational mode that most breaks with the traditional orientation of high school graduates towards university careers or work based on the social and management sciences; its graduates mainly sustain those areas of working activity or higher level careers most tied to the technological development of countries (engineering and the exact sciences).

In many countries, it is the educational mode that provides the broadest opportunities for a high school education for socioeconomic sectors that traditionally have been left out of this level.

There are indicators that show that its graduates have a greater capacity for autonomous productive and working management in the informal sector of the economy.

New nature of possible relations

The diversity of empirical research carried out in recent decades affords a new clarity in terms of the nature of the possible relationships between technical high schools and the various institutions and demands of the production and working sector.

There are important points of coordination between the objectives, functions, processes and results of technical schools and those of the country's production system. Albeit deficiently, technical schools anticipated the vital role that knowledge would play in productivity and, in particular, the fact that technology does not mechanically result from the exact sciences but rather requires its own teaching.

However, an important caveat is that the different nature of educational and working institutions does not permit "linking" them in the strict sense of the word; i.e., a chaining or subordination of the school's interest to those of the productive system. It is structurally impossible to hope for mechanical, linear, specific, direct or immediate relations, given that the institutions and the establishments responsible as a whole for developing education or production have different objectives: different organizational rationale, interests and capabilities of actors undertaking education or production, who cannot be the same, different dynamics, tempos and times for achieving their own objectives.

The projects

The educational projects of a country are shaped by school institutions. The latter have shown themselves to have their own important dynamic; different actors build the educational high school institution in time and space, from the overall shape to the daily work. Therefore, each school will not likely adjust to the designs of educational state planning and much less to the demands of the productive system. In turn, the production of a country is shaped by extremely heterogenous production establishments, which leads to the pursuit of very different production objectives and forms of organization at a working, technical and hierarchical level. This heterogeneity of the productive apparatus of a country determines the fact that one cannot put forward universal "demands" for schools.

The two preceding points provide the basis for the conclusion that in Latin American countries an important social mistake was made by proposing that technical high schools should offer distinct training for a large number of specific occupations. On the one hand, the tasks for which the technical school trains do not only exist in very small spaces of the labour market; they do not constitute vacant working activities, rather these are occupied by personnel that was gradually trained for them through mechanisms outside the technical school; lastly, many of the occupations that were innovated within the technical school do not guarantee social consolidation, nor respect for the social resources necessary for supporting the training for this type of activity, nor respect for the existence of occupational functions that are sufficient or even necessary in the various labour markets.

On the other hand, the requirement that specific occupational training be provided, gave rise to an institutional and curricular structure that adversely affected the training possibilities of these schools by making training for employment compete with general training in terms of time, school spaces, institutional resources and in the energy of teachers and students.

Work is one of the essential dimensions of human activity. Therefore it is an important part of the training that schools should impart. However, the responsibility is not exclusively theirs; it is not even their foremost objective. There are many other forms and opportunities for apprenticeship beyond that of the school; the specific requirements for a job are better learned through actual, hands-on experience or through courses directly and immediately prepared in this respect. Businesses must assume their national responsibility in training the work force.

Within the various objectives the school pursues, training for work is not the exclusive domain of technical education. All educational levels meet this function to some extent. Training for work does not end upon completing junior or senior high school; it is important to instill an outlook of continuous, permanent training in both of these.

New challenges faced by technical high schools in Latin America

New reality

The new trends in world development are an inescapable fact. Perhaps the most important aspect of the new trends we see in world development and the one most relevant to technical education is that of the determining impact of scientific and technological knowledge on pro-

ductivity, but also on all aspects of life whether it be social, political or cultural. The impressive development of microelectronics, teleprocessing, computerized control of processes, DNA recombination techniques and its many uses, new material, flexible production methods, the disappearance of frontiers due to satellite communications; in short, the overwhelming penetration of new technologies affects all social groups whether as producers or consumers.

The foregoing has opened the door to all kinds of influences and interventions on the cultural identities of people everywhere.

The universalization and the transnationalization of the economy are already an everyday fact, and has meant hitherto unknown world interrelations in production and trade and a new international division of labour. As a trend, it makes it truly possible for there to be greater communication and concertation between Latin American countries.

Within this context an important change has occurred in the internal organization of production establishments that demands greater responsibility of each worker on the whole, where, at the same time, greater democratic participation is called for, and requires broader channels of communication between everybody. Large enterprises become increasingly dependent upon the contribution of small ones. In fact, a growing boost has been given to the small and intermediate-scale enterprise. But it involves participation that means greater technological requirements for production, since it incorporates them into the market as completely responsible for part of the final product, necessarily integrated or coordinated with other enterprises in terms of times, rates, costs, organization and quality control.

Therefore, the potential arises for the equitable association of medium or small-scale enterprises.

The foregoing requires fundamental changes in the collective ways of protecting workers and of the right to work.

The other side however, is still a possibility: the risk of new and more accelerated dynamics of economic, social and cultural distancing between countries and within countries; the risk of dispensing with the region in the universalization of the economy.

Characteristics preserved

Latin America societies conserve certain characteristics that require the role of technical schools.

Despite all the afore-mentioned changes, Latin America retains its characteristic profound structural heterogeneity at a social, economic and cultural level. At the economic level, there are different rationales for orienting production, according to the possibilities there are for the use of resources, locally available knowledge and cultural forms of integrating work with other social levels. These have allowed a large part of the Latin American population to subsist, albeit under conditions of extreme poverty. Very few sectors are still historically, technologically, economically, politically and culturally incorporated into the prevalent flow of development. The essential problem continues to be incorporating the population into jobs that lead to better living conditions.

Very difficult processes of democratization and of concertation are being experienced between heterogeneous groups that have cornered the energies, interests and motivation of population groups.

In particular, over the last decade, the stagnation of Latin American development had serious consequences not only for the economy, but also for education. Despite this, the educational system continued to broaden its levels of coverage.

The continent attempts to become incorporated into the new forms of economic development with the burden of external debt servicing.

The incipient industrialization and the preceding models of modernization that did not become widespread, left tremendous gaps and cultural lacunae in their wake that pose a special challenge to technological education, due to the diversity of the starting points from which they would

have to begin in the attempt to contribute to the assimilation of a new technological culture.

The demographic composition of Latin America still features a predominantly young population, while at the same time its most distinctive trait has been the growing participation of women in education and in the economy. These two groups are the most affected by problems of unemployment.

Orientation of technical education

Despite the foregoing, Latin American countries have repeatedly defended a series of values that orient the development styles desired:

Conserving and enhancing their cultural identity.

Insisting upon the democratization of their structures and processes: quest for basic agreements and the substantial participation of the various social sectors.

Insisting in that efforts at changing the productive structure make no sense –and would have a very limited real scope in time– if:

- greater equity and justice are not achieved in the production and distribution of expected wealth;
- it is not based upon their own competencies, deeply assimilated among the populations of countries.

Insisting upon the development of the potential of all members of society.

Placing particular emphasis on the quality of life, in all its aspects, particularly that of respect for the environment.

In most countries greater participation by the private sector in the financing and conduction of society is pursued; at the same time there is a pursuit of a profound respect for the public, social and national sense of the actions to be undertaken.

Limits and possibilities

The description of the preceding points allows one to arrive at a three-point conclusion.

Technical high schools were created and developed in Latin America within the context of disproportionate and mistaken expectations with respect to the objectives they should meet; scant attention was paid to the construction of specific institutional levels of this type of education; higher cost are involved than those of other modalities at that level and there is a major disparity between the financial and the institutional efforts undertaken and the results obtained.

However, in various countries there is an important institutional infrastructure created in the course of the past years that has an experience which has not been sufficiently evaluated and which it is necessary to recover, since, right from the start, it has been oriented by the principle of incorporating a more intensive use of scientific knowledge into productive processes. Given the importance of acquiring a necessary training in technology in these times, this experience could be productively channelled in order to take the maximum advantage of the possibilities of the technical school without going against the limits that its nature as a school imposes upon it.

On the one hand, the failure of technical schools in formal occupations oriented to very specific preset activities; on the other, the existence of a significant institutional experience with respect to technical high school and, ultimately, the magnitude of the challenges that Latin American societies face, force one to reconsider what can be expected from the technical school.

The three preceding conclusions point to the principle that technical high schools should be responsible for imparting a general, basic and polyvalent training in technology that can be valid and relevant to the various sectors of the heterogeneous production structure, and whose orientation does not respond to the specific demands of a supposed labour market, but rather develops with a public, national and social sense.

Recommendations

A new conception of technological education within a new conception of high school education

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The increasingly larger population entering high school requires an integral training that is able to support and sustain, on its own, the requirements of a high level of education, the responsible, competent and creative performance of a complex working activity and the likewise aware and qualified participation of these youths in all walks of life.

A new technological conception, in keeping with its nature, turns it into a new cultural element, in addition to the sciences and humanities that high schools have worked with.

This conceptions arises out of:

A better understanding of its nature. Technology cannot continue to be seen as an "applied science" –as if it were a linear derivation– in the unique sense of physics, chemistry, mathematics and biology. Technology can best be understood as the "science of productive work" and therefore, it demands understanding work itself, its objectives, mediums, processes and collective organization. Technology implies a new combination of many factors, among which knowledge constituted in disciplined fashion is only one. Several disciplines and professions intervene in technology, with a different organization and coordination. This requires a very exact estimation of the resources and time that are in fact, available; it requires a constant review of production processes and of the characteristics of the products achieved, of consumer demands, of the nature of the distribution processes of goods and services, of the typical laws and regulations that pertain to commerce. It requires the interactive and cumulative reinforcement of various experiences, skills and knowledge.

In Latin American countries, technology faces a triple challenge; no doubt to promote the basic understanding of vanguard technological development, but, at the same time, to understand the technical progress that is required for resolving age-old production and organizational problems which the just upgraded system did not solve or foresee. Further, to avoid the mistakes and problems created by technological progress in industrialized countries, which forcefully occurred in the nascent industrial development of developing countries: neglect of the qualitative aspects of life-styles, destruction of the environment, concentration of power and income.

Thence that technology has to be integrated not only into the exact sciences but also into social sciences and the humanities in order to instill in young people a full understanding of the world that surrounds them at present, and in order to foster the capacity to master technology, explaining and deciding its interrelations with society.

The two preceding considerations clearly point to the main recommendation: work towards the integration of a basic and general high school training which, in keeping with the grades it includes, promotes mastery among the youths over three basic cultural elements: the sciences (exact sciences and social sciences), the humanities (in which a new ethic is forged) and the technologies. It is proposed as a trend towards integration because it is important to respect the institutional differences, limits and specific aspects that up to now have divided teaching into these areas of knowledge.

Advancing with the necessary speed

Technical high school education is the institutional mode best qualified in Latin American countries to advance with the necessary speed in building the new technological training required by the challenges mentioned above.

Past experience has shown that it is not enough to once again recommend a clear-cut distinction between general education, technical education, propaedeutic or terminal high school education, particularly for those countries in which it has not been generated. But neither is it possible to ignore the history and possibilities of the different technical education institutions in the nations into which education at this level was diversified.

Hence that to take advantage of the experience and the infrastructure of technical education requires implementing a technological training that:

Fully frees technical schools from the imposi-

tion of forming an institutional supply, spread out over numerous specific "careers".

Focuses on constructing basic technological areas that are defined on the basis of histories, languages, concepts, skills, knowledge, histories and uses typical of distinctive technological developments (for example, mechanics, electricity, electronics, computer science, management).

Focuses on an analysis of the complete productive process: the knowledge that is required for the proper choice of raw materials and the resources of production, collective organization of the work process, relevant technical processes, applicable (ecological, quality control) standards, distribution and marketing, etc.

Takes advantage of the elements of general education that it already incorporates and transforms them, tending increasingly to the conformation of a sustained basic curriculum in the three areas mentioned: science, humanities and technology, respecting institutional specifics, local and regional demands and the possibilities of each establishment.

A new management

Technical high school education institutions require a new educational administration that:

- clearly acknowledges the actors on whom the possibility of innovation and change of technological education effectively falls;
- foresees and promotes the fact that these actors undertake the necessary coordinated, systematic and continuous construction of the different institutional levels that guarantee the quality of a new technological training, within a comprehensive high school education.

Actors in the change

It is imperative to recognize the true actors involved in the change: teachers, authorities, students, and specific interest groups within technical high schools: heads of households, local businessmen, local trade unions, alumni, technology experts. All of these within the limits and forms of organization that mark the historical, legislative, budget and organizational context of concrete institutions, that significantly mark the dynamic of the relationship between these actors and local, regional and national levels of school action.

The dilemma of centralization versus decentralization as ends in themselves is a false one. What is important is to achieve the proper coordination between decentralization and integration.

It is essential to conceive the school (establishment) as the organizational unity of educational action; to foster the greatest professional autonomy and responsibility of its teachers and authorities for everyday administration and its relations with the surrounding community; to avoid clear-cut divisions between planning (in central offices) and execution (in schools).

The autonomous management of the budget should be fostered at the level of school establishments, both in terms of the capacity to administer their own income and that which it receives from the central institution.

The organizational preparation of each school's annual planning must be encouraged in all areas: financial, administrative, teaching, relations with the productive sector, teacher training, contact with other institutions, etc. as well as the preparation of its self-evaluation of it results.

Greater coordination should be encouraged between the education for formal work and non-formal work at the level of relations between the school and its community.

Integrating mechanisms

Central agencies should base their actions on the integrating mechanisms of the system (not on control):

Carry out research on the relations of technical high schools with society. Emphasis should be placed mainly on the characteristics of heterogenous working sectors and on the requirements for knowledge posed by their technical and organizational production processes;

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on the path to work that graduates follow; on the incidence of graduates in the working processes.

Carry out comparative research on the internal institutional procedures, with a view to recover from the experience the forms of management most suited to the technological training requirements.

Encourage the experimenting and development of curricular, educational, teaching, management and institutional evaluation alternatives that are, on the one hand, viable, and on the other hand productive in offering school establishments a wide range of alternatives with which they can selectively enrich their administrative autonomy.

Undertake studies on the nature of the student population that has an increasingly generalized access to high school; on the heterogeneity of their interests, expectations, previous experiences and their relation with curricular and teaching alternatives that best guarantee a democratization in the appropriation of technological cultural elements.

Establish channels and mechanisms for the recovery, systematization and fluid and continuous communication of efficient experiences between schools and teachers, as the best way to guarantee an increasingly sounder training of the academic personnel.

Create mechanisms for the retribution and promotion of the best experiences in which individuals and their schools are rewarded.

Support the work of technical groups and experts in close contact with the various schools, in order that research, experimentation and the development of curricular, teaching and teacher training alternatives be supported in a productive interrelation among the direct actors and effectively qualified (not "armchair") external technical groups.

Establish evaluation and quality control mechanisms for the results from different schools, in keeping with the public responsibility criteria of the schools and their appointed institutions, which clearly take into account the resources and conditions of each establishment.

Recover, systematize, conserve and analyze the institutional information that allows for an ever-greater knowledge of the system.

Understand the possibilities and limitations of each school, and not establish a single requirement for all, but gradually encourage the construction of the quality of each, insofar as their capacities allow (resting on the initiative and responsibility of each school's teaching body and school board and on appropriate central supports).

Establish specific strategies and policies for training school boards, not only of the head teacher but also of the collegiate academic administrative bodies (at the level of the school, area, region, etc) in all aspects relative to institutional administration: academic planning, school administration, teacher training, specifics of technical teaching, coordination with enterprises, etc.

Promote and administer the qualified participation of members of the production sector in institutional design, curricular construction, the preparation of teaching material and the opening up of learning opportunities for teachers and students within productive establishments; the participation of actors from the productive sector in training activities within schools; vocational orientation activities; evaluation of annual and diagnostic institutional projects for the employment and follow-up of graduates.

Breaking of routines

Each of these cases of participation requires a complex specific administration, since it implies breaking up each institution's own (educational and working) routines and the investment of money, time, personnel and efforts in favour of the other.

Work in preparing a particularly flexible institutional legislation that emerges from an analysis of the organization of schools that function best, and that will have to include:

- curricular aspects: foresee the participation of actors from the productive sector in decision-making, and foresee the specific time and

resource requirements for teaching in these types of schools;
- aspects of academic certification: promote the recognition of learning outside the school, greater fluidity and flexibility in the sequence of learning, real equivalents in school certificates;
- establish the type of insurance for students and teachers in line with the learning activities: foresee the risks of both, not only in school establishments but also in productive establishments, and the handling of tools, machinery, raw materials, etc. (legal status of professional practices in productive establishments);
- guarantee the autonomy of school boards in administering and obtaining resources for the school, including the autonomous administration of the institutional subsidy and the corresponding responsibilities (without stifling initiatives);
- open up the possibility for all kinds of pilot experiences;
- teaching statutes should recognize working activities outside the school a valid and favourable experiences whose value is not necessarily inferior to that of a university degree and whose undertaking does not necessarily truncate teaching continuity.

Innovation proposals, the notion of curricular construction and that of a new teaching identity, a new legislation, new forms of financing, etc., all require that a plan of action be drawn up in schools and in central institutions that does not falter in the face of the magnitude of the challenge, but rather resolves it on the basis of continuous monitoring and evaluation of the innovations proposed, recognizing different time scales in the institutional construction.

The educational institution cannot implement innovation on its own. It requires the support of different "social groups" for various actions. Of note here are the actions of "social conviction" in connection with the fact that basic training is the best guarantee for a good performance in the working world. This conviction must reach the heads of households and students that make up the immediate demand, but also even the teachers and planners of the educational system. This conviction goes through different social circulation mechanisms, for example, mass media, and also includes a comprehensive strategy for vocational orientation. Commitments are avoided that place the responsibility for youths' employment on the school.

Innovative teaching

To foresee and propose the construction by these actors of all the curricular elements at the various institutional levels, in order to guarantee the innovative teaching of technology as a third cultural element.

It is essential to recognize that the content that would make up the teaching and the learning of the technology as a basic curricular area (and of the different technological areas in their own right) must be processed and constructed within the school, and that although technical schools have made important headway in this respect, they have not succeeded in consolidating quality training.

It is imperative to radically change the approach from one of multiple and different specific careers, supposedly derived from preset activities in the working (modern) sector, to one of basic elements that make up the most important technological areas in the curriculum.

It is necessary to recognize that, in keeping with the new conception of technology, it is not possible to start off with an abstract idea and its universal validity; by proposing its incorporation as a basic curricular area, different, even contradictory objectives become possible.

Technologies are, in turn, the object of discussion and selection. They can be oriented to opposite ends such as aid and cooperation versus earnings; immediate profit versus concern for the environment; prevalence of global organization of work processes, together with a greater democratization of the conduction of the productive establishments etc. A new meaning of the concept of competitiveness seems to be achieving the delicate balance between seem-

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ingly contradictory trends. Those technologies that best permit the above-mentioned cultural values to be achieved, involve extremely complex processes. Thus, youths should be prepared for a responsible participation in the democratic debate, in connection with the technological future of the countries.

Curricular construction of the basic technological areas requires working systematically with five different curricular elements on whose proper coordination will depend the educational institution's ability to guarantee the best learning opportunities:

selection, apportioning, sequence, continuity and integration of knowledge, skills and values.

It essentially implies the formation of technological "modules" (according to the definition and priorities raised) and overcoming the force of academic disciplines as the easiest and structured source of curricular content. The principle of "learning to produce by producing" that guided a good part of the activities in these schools, omitted the numerous factors that have an effect on production, over and above knowledge. It is vital to recover the notion that there is no mechanical or automatic step from knowledge to successful production.

Delimitation of the most appropriate spaces, times and sequences

Technical education requires ample working periods in the workshop, laboratory or professional practice and time blocks that fully respect the rationale of the activity that is being undertaken. It is essential to break with time units based on teaching criteria typical of working with subjects and in the classroom, and requires the formation of different learning groups with a different dynamic for rotating use of the facilities themselves.

It is important to emphasize the educational potential of learning opportunities that the technical school has been generating, but at the same time it is imperative to identify and recover the experiences which have succeeded –within them– in resolving the contradictions between the school rationale and the production rationale, preparing viable and fruitful strategies for learning what is productive within the educational dynamic. What is involved is an attempt to understand that it is not the availability of a workshop equipped according to some model which will guarantee learning, but rather the capacity to develop certain processes in it that have yielded positive results. Professional practices are very positive when enterprises take on the joint responsibility of training students. Some productions in schools are very useful in teaching, but not just any one, of note now is the so-called student production projects. On the contrary, the assigning of the responsibility for production to schools without analyzing the attendant difficulties, for a long time led to useless equipping, wasted resources and the possible learning of the incapacity to produce.

Teacher training for mastery of these contents and the handling of the most productive teaching methods, techniques and strategies.

The principle of the construction of curricula involves the active participation of teachers. This training is undertaken at the same time as the curriculum is constructed, and it focuses on it and is guided by it. At the same time, it must be based on the notion that educational methodology cannot exist at an abstract level. Rather, the educational content determines its own specific method. Basic technological training –in particular, work in workshops, student projects, the manipulation of technology– allows and at the same time demands new hitherto unexplored learning relationships.

Appropriate teaching materials

Technical schools in Latin America opted for disproportionate and unattainable teaching models, based on the handling of sophisticated imported equipment. This is one of the factors responsible for the high cost of this type of education. The establishment of this model proved seriously detrimental to the training possible since, on the one hand, there are very few schools that in effect were equipped in accordance with the model, and on the other hand, empirical research points to the significant dis-

use and wasting of this equipment, with unknown consequences of the effects of this "hidden" curriculum (the incapacity to use the technology available in the school) on the training of students. One of the main activities that must be carried out by technical schools is a serious analysis of the inventory available in terms of its use in teaching and its relevance to the curriculum. At the same time, it will be vital to generalize the use of materials that have been successfully experimented with, while the inventory that has no educational use in the schools should be made available to productive establishments or research centers, and in any case, coordinate with them regarding some educational use of this equipment.

Mechanisms for certifying knowledge

This field is generally ignored in curricular construction. However, it is worthwhile to insist on the need to incorporate mechanisms to overcome the double reductionism of examining in accordance with what proves easiest and most economic for the teacher to observe, and of manipulating for school administration. The social value of technical education certificates will depend upon the capacity they have to recover and express the quality of the processes that led to the basic mastery of the technology.

To achieve technological teaching with cultural elements requires the social construction of a new professional identity: that of the teacher of technological areas. Recruitment policies should be established (prominent among which is the adequate valuation of previous training), together with policies on wages, professional development and proper institutional conditions for them to engage in their work, which guarantee them a status equivalent to that of teachers focusing on "purely academic" activities. An important discussion arises on whether the teacher should work on a full time and exclusive basis or whether his external working activity can contribute to shaping his teaching identity.

This demands the continuous upgrading of teachers through collective and organizational working strategies within schools and between schools, fostering the institutional time for collective work and the valuation, systematization and promotion of experiences.

It requires the study of those contents that guarantee real equivalents between the various activities and learning processes in order to establish the effective use of the concept of academic credit, according to which the most can be made of learning in and outside the school and recognition be given to their true dimension.

Financing

Acceptance of the fact that this new conception of technical education and the quality that should guide its performance require proper financing.

It is essential to achieve a national agreement to grant technical education the resources in keeping with the role it is playing. For this, it is worthwhile to de-mystify the role that has generally been attributed to the complex and sophisticated imported equipment, and it is necessary that the sectors that effectively determine the necessary costs for a quality process be made known.

It is recommended that an end be put to the centrally-decided practice of purchasing imported equipment, based on a dubious "economy of scale" and without an adequate analysis of the provisions and possibilities of their effective use by schools and technical training areas.

It is essential to thoroughly review the criteria and procedures for obtaining and allocating resources, which in fact have explored the entire gamut of possibilities without the differential efficacy of each one of them being known. Criteria of efficacy in this respect depend on the efficacy of the national fiscal policy, on the one hand, and of the internal administration of institutions on the other.

A diversity of financing sources must inevitably be sought, as in all levels and lines of educational activity and generally in the expenditures that, up to now, have been assumed by the State. By considering the diversity of sources, the diversity of items of expenditure and the

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different ways of promoting provisions and exercising control over the use of expenditure, there will be greater wealth and social participation in financing this mode.

Fluid, flexible and balanced mechanisms should be established to obtain and channel funds, which at the same time as they foster school autonomy, should not question its substantive functions. Demands for school production and the sale of services to the productive sector for resolving problems of financing seriously distort educational action.

Therefore, it is essential that the State guarantee an equitable redistribution of resources, planning and national outlook and quality control. At the same time, it should guarantee the necessary subsidies in order for educational activity to go beyond an immediate economic performance, and in order to avoid education being intended exclusively for those who can directly assume all its costs.

Exchange mechanisms

Establish Latin American mechanisms of exchange and technical cooperation encouraging groups of researchers and teachers.

It is imperative that there be greater understanding of technical schools and of their potential. Thence the importance of recommending the undertaking of activities that allow for comparisons and international cooperation:

- comparative research;
- educational development programmes in different sectors: institutional administration, teacher training, teaching materials, curriculum, school equipment, etc.
- production and exchange of publications and all types of materials. Important emphasis should be placed on the production and use of videos.

Specific proposals

Promote specific programmes for professional or trade specialization at high school level.

Clearly, Latin American countries require specific professional or trade specialization programmes at the high school level. Although technical schools can collaborate closely with the working sector on this, the latter should accept and assume the main responsibility. It should therefore:

- participate significantly in the design, financing, implementation and evaluation of the programme;
- be careful not to confuse the objectives and the specific dynamics of these programmes with the school dynamic. Specific professional training programmes in which schools participate should clearly establish the length of the studies, the permanence of the supply, the admission requirements and the nature of the certificates granted.

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FUNCTIONAL ILLITERACY REQUIREMENTS IN YOUTH AND ADULTS. EDUCATION AND WORK IN A SMALL DEVELOPING STATE[1]

Olabisi Kuboni*

In an attempt to address the unemployment problem among youth of the country, the Government of Trinidad and Tobago has set up the Youth Training and Employment Partnership Programme (YTEPP) with a view to increasing the employability of those targetted. This paper makes a case that in addressing the area of training in functional literacy skills, attention must be directed to improving the capability of the target population to interact with the socio-economic environment of which they are a part. In this regard some specific skills are highlighted and discussed. The paper also draws attention to factors within the society that can erode the individual's ability to maintain and/or enhance functional literacy skills and two examples are discussed.

During the 1960s Trinidad and Tobago embarked on a programme that was intended to bring about fundamental changes in the economic organization of the society. With the adoption and implementation of the Puerto Rican model of industrialisation by invitation (Ryan,1988), Trinidad and Tobago had set itself on a course aimed at transforming its economy from one based mainly on the production of primary goods and services to one based, to a greater extent, on manufacture and commerce. Over the succeeding three decades, the pattern of economic development would evolve into the mixed economy model, with increased state participation in the industrial and commercial sector, and eventually arrive at the current position where the State is setting the stage for the divestment of some of its holdings. (Rampersad, 1988).

Simultaneous changes in the education system were influenced, in part, by developments in the economic sector. The Draft Plan for Educational Development in Trinidad and Tobago, 1968-1983 (Government of Trinidad and Tobago, 1968) noted that the country was "supposed to produce citizens who are intellectually, morally and emotionally fitted to respond adequately and productively ... to the changes which are being brought about rapidly in the economic foundations of civilization, particularly the challenges of Science and Technology" (p.5). The Draft Plan also made the observation that "one of the fundamental requirements for the economic future of Trinidad and Tobago is a skilled and employable labour force" (p.54). Thus the Plan endorsed the recommendation of the 1964 UNESCO mission to the country which proposed the establishment of "a new type of school (i.e. Senior Comprehensive school) encompassing both academic and technical courses" (p.33). These intentions were reinforced

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in the succeeding Education Plan, 1985-1990 (Ministry of Education, 1985).

The Senior Comprehensive School has, however, failed to fulfill its intended function. Indeed, it has been suggested that there has been "severe under-utilization of the large expenditures which have been incurred in the education of the young people," and that this situation was due, to some extent, to "the failure to train the population to meet the specific demands of the kind of production structure to which economic strategy was targeted" (Rampersad,1988, page11).

It is against this background that, in 1988, the state introduced the Youth Training and Employment Partnership Programme (YTEPP) whose objectives were defined in a later document as follows:

- To redress the growing sense of disillusionment and self-destructiveness among the youth.
- To address short-term unemployment among the youths, 15 to 25 years.
- To provide education and training skills for income-generating activities - for both job employment and self-employment.
- To provide technical assistance to youth emphasising self-help projects.
- To source funds for entrepreneurial endeavours of youth. (Ministry of the Economy, 1991).

Training and Employment

YTEPP was therefore set up to address the problems of youth unemployment. However, whatever structures a country sets up for this purpose, state intervention cannot be limited to training in job-related skills. YTEPP itself has developed a curriculum that places equal emphasis on the acquisition of competencies other than the technical (Government of Trinidad and Tobago, 1990). In this regard, one suggests that an important set of skills to be considered are those which allow individuals to build and maintain interactive communication links with the socio-economic environment of which they are a part. Further, these links must be capable of facilitating optimum information flow to meet the need that individuals have to satisfy their material well-being and to promote their social and spiritual development. In the context of this paper such skills would be referred to as functional literacy skills.

Succeeding UNESCO documents reflect that organization's evolving understanding of the concept of "literacy" beginning with literacy itself and ultimately leading to "functional literacy". In 1958, the UNESCO position was, "a person is illiterate who cannot with understanding both read and write a short, simple statement on his everyday life. "(UNESCO, 1959, page 93.) Its 1978 definition introduced the term "functional illiteracy" and provided a more detailed statement. It stated: A person is functionally illiterate who cannot engage in all those activities in which literacy is required for effective functioning of his group and community and also for enabling him to continue to use reading, writing and calculation for his own and the community's development."(UNESCO, 1979, Annex I, page 18).

Brand (1987) in assessing functional illiteracy in the European Economic Community in the 1960s, has a perspective similar to that outlined in the 1978 UNESCO definition in that he defines the problem mainly in terms of a lack of competence in the area of reading and writing.

Even though a new expression had been introduced, there was little difference, if any, at the conceptual level, between functional illiteracy and the earlier view of illiteracy. Bhola (1989), in reacting to the 1978 UNESCO definition and its continued focus on what is commonly referred to as the 3Rs, makes the comment, "... the goals were (still) clearly conservative. The focus was on reading the word, not on living in the world" (page. 485).

In spite of the restricted perspective that persisted in 1978 at the official UNESCO level, there had been prior discussions under the umbrella of the same organization that sought to arrive at a broader view. Indeed, it was at the UNESCO-sponsored 1965 Tehran World Conference of Ministers of Education on the Eradication of Illiteracy that the expression

"functional literacy" was coined and described as "an essential in overall development... closely linked to economic and social priorities and to present and future manpower needs" (quoted in Bhola,1989). The conference report expanded: "(The delegates) accepted the new concept of functional literacy, which implies more than the rudimentary knowledge of reading and writing... Literacy instruction must enable illiterates, left behind by the course of events, to become socially and economically integrated in a new world where scientific and technological progress calls for ever more knowledge and specialization" (UNESCO, 1965).

Significant position

This official Tehran position, while not reflected in the 1978 definition, was significant in that it represented an advance on the narrower reading-writing-arithmetic perspective. Essentially, it recognised the need to be aware of the overall purposes for which literacy is to be used. However, in spite of this advance, there was an important minority view at the same Conference which regarded the dominant official position as being too work-oriented, or as Bhola (1989) commented later, it represented "the professionalization of labour in the interests of industrialization processes" (page. 486). Thus, this minority lobby advocated a more universal approach "directed towards achieving greater human and cultural integration." In their opinion, "literacy work should not be regarded as an end in itself but as an indispensable means of promoting the general, harmonious development of illiterate masses" (UNESCO, 1965).

In 1975, at the tenth anniversary of the Tehran Conference, this latter view had evolved into the more focused literacy for liberation. Influenced by the thought and work of Paulo Freire (1970), participants at the 1975 Conference were now demanding that literacy should teach critical consciousness and make people capable of "acting upon their world, transforming it" (Bataille, 1976). James (1990) displays a similar point of view as he expresses doubts about the value of literacy programmes which, in his view, are "more adaptation -oriented rather than transformative in nature" (page. 24).

Bhola (1989), in an attempt to reconcile the seemingly divergent work-oriented and liberation perspectives, points towards the possibility of the emergence of a "concept of literacy with generalized functionality - a fully functional literacy - which teaches all social, economic and political skills for more food, fairness, fulfillment and freedom" (page. 486).

Bhola's all-encompassing statement, merging the two perspectives, closely parallels the view expressed earlier regarding the need for the individual to develop skills capable of facilitating optimum information flow between the self and the socio-economic environment for the purposes of attaining material advancement and social and spiritual development. It is against this background that Bhola's position is considered best suited as a basis for further discussion. However, one cannot but observe that a clear, precise definition of functional literacy has still not yet been articulated. Indeed, in the movement away from the 1958 UNESCO statement, there developed a tendency for positions to be expressed in more ideological and less definitional terms (see also Torres, 1989, page.24). This is not to minimize the importance of the ideological debate. On the contrary, all behaviour is and must be grounded in ideology. However, in addition to ideology, there is also need for clarity of definition as a prerequisite for transferring theory into practice.

Consequently, functional literacy is here defined as the capability that an individual possesses to harness and manipulate language whether through speaking, writing, listening or reading in order to engage in an act of communication between the self and some other agent, for the purposes of attaining optimum information flow between the two parties. In addition, functional literacy is seen as a measure of the extent to which this act of information exchange is capable of supporting and facilitating the individual's quest for "food, fairness, fulfillment and freedom" (Bhola, 1989). In

summary therefore, functional literacy is regarded as embodying a collective of language-based skills which qualify for inclusion under this heading not because of some absolute criteria but because they can be expected to serve the language-using needs of the individual interacting with his/her milieu. Some of these skills are discussed below.

Functionally literate

One of the main skills that an individual should possess in order to be classified as being functionally literate is an ability to recognize the distinction between the public and private uses of language and to apply the appropriate conventions when manipulating language at either level. One situation is worth noting here.

Traditionally, a significant part of the population of societies like Trinidad and Tobago has found self-employment in the technical areas of work. Communities have produced their own mechanics, seamstresses, bakers, carpenters to service their own local needs. These self-employed individuals would have learnt their skill in an apprenticeship situation in a one-to-one relationship with a master craftsman and would have practiced mainly in a localized setting, serving people with whom they are acquainted.

With the development and expansion of the industrial and commercial sector, these same skills are also being practiced at a more impersonal and public level. Thus there is a co-existence of two modes of operation, with the resulting areas of tension between the localized craft practice and the more generalized public practice. One aspect of tension that is often overlooked is in language differences. The language of transaction of the self-employed community-based craftsmen and women would tend to be more free-flowing and intuitive. These individuals would not feel the need to engage in an exchange with the client in which they are expected to justify their expertise continuously. Except there is obvious evidence to the contrary, authority and competence would not normally be challenged. Hence, usually, the interaction is based on trust and goodwill.

On the other hand, employees practising a similar skill in some larger manufacturing, commercial or service organization must be more focussed in their communication. They must display precision and economy in their choice of vocabulary and structure. They must be able to identify the key elements of information to be presented and organize these strategically in order to achieve optimum clarity and purposefulness in the communication. At this level one cannot rely on mutual goodwill. One must display competence. This requirement is necessary whether the transaction is taking place orally or through the written word. It applies whether it is the technician in a motor vehicle servicing company updating the client on the condition of his vehicle, or a worker in a food processing and packaging concern reporting to a supervisor on her area of work. It also applies in the current thrust towards self-employment among the youth, in situations where they need to seek assistance from some previously unknown source to establish their business concerns.

An important factor to be noted, is that one critical feature that distinguishes the informal private use of language from the more formal type required for public transactions, is that the agents that act as sender and receiver in the former type of communication do not function in the same way as their counterparts in the latter. In the former the divide between the two is less rigid, with both agents sharing the responsibility for deriving meaning from the message being transmitted. Thus, while interjections like "you know", "you understand" on the part of the sender, may be a sign of a lapse in that person's ability to encode the message, they may also represent an expression of an unspoken understanding that the sender is free to draw on the stored knowledge and experiences of the receiver who is not just a passive entity but an active participant in the shared act of extracting the meaning of the message. In the latter, the onus is on the sender to ensure that the message

is clearly transmitted. No assistance should be expected from the receiver.

This recognition of a duality of language styles has important implications for instruction in the technical-vocational subjects both at the secondary school level and in the YTEPP programme. It is even more important since a large proportion of the students in these programmes themselves come from a socio-economic background where the traditional craftsman or woman still functions. Consequently, the extent to which technical-vocational graduates succeed in the wider work environment, or in any other sphere of life, would be partly determined by their sensitivity to the distinctions between the two language modes described above and to their competence at manipulating language appropriately.

Transition

The transition from the localized world of human interaction to a broader more impersonal world also represents a transition from a lesser to a higher degree of classification of information, with its attendant implications for language use. The extent to which individuals are able to draw on and make efficient use of the information available in the public domain is significantly determined by their skill at concept definition and discrimination, by their awareness about the way information is classified and by their capability at manipulating the system of classification. For, in spite of the popular adage that there is an information explosion in today's world, this commodity is only accessible to the extent that one has acquired the competency for accessing it, which is itself a skill in the use of language. This skill becomes important, for example, when the ordinary citizen has the need to make contact with the Ministerial system of government. One can only benefit from this categorization of services provided by the State if one can accurately define the overall purposes of a specific ministry and even further can identify the appropriate lower-level services subsumed under that ministry then make the connection between one's individual needs and the relevant services.

It is important to realize that, while none of the skills identified above, or any other functional literacy skill, is context specific, ability to function at any point along the "food, fairness, fulfillment, freedom" continuum cannot be taken for granted. Rather, such an ability would depend on individuals being able to recognize opportunity for skill transfer, to effect such transfer and in the process to enhance and extend their own network of skills. In this regard, one must be aware that the existing socio-economic environment in most modern States is not always conducive to skill enhancement and that there are societal factors that can undermine the best efforts of an individual. Two examples are discussed below.

The ability of the individual to improve the skills of accessing information becomes an area of concern when viewed in the light of the amount of time spent interacting with the most popular medium of communication in most societies, namely the television. Salomon (1984), on the basis of a study conducted among children in San Francisco, suggests that children's perception about the demands made by a given medium influences the amount of mental effort they invest in processing information from that medium. Specifically, the findings of Salomon's study strongly support his initial thesis that children are likely to learn more from print than from television, not because of characteristics inherent in the respective media, but because children perceive the task of getting information from print as requiring more mental effort than performing the same task using television. Salomon notes that in the case of the latter medium children could learn less because they do not perceive television as demanding much mental effort from them to process information coming from this source and thus do not expend much energy when interacting with this medium.

While one cannot make broad generalizations on the basis of this single study, the findings are worth noting not only in relation to children of other populations but also in relation to adults.

Given long exposure to television, the population as a whole, and in particular those who are not part of a formal learning environment may lose competence in deeper level processing because they fail to perceive the need to, and therefore do not expend much energy in the task of drawing information from the television medium. Consequently, young adults living in a commercial television environment would need to make a conscious effort to acquire, maintain and enhance the literacy skills required in accessing information.

A second area of concern has to do with the relationship between the individual and knowledge. Chandler (1990), in examining the way the computer impacts on education, asserts that the computer denies the human origin of knowledge and that it should be firmly stated that it is "human beings who create information by interpreting the evidence of their senses and through negotiating with other human beings" (page. 166). While not denying the importance of the statement Chandler makes about the computer, this technological tool cannot be regarded as the only instrument that challenges the authority of the human being as a creator of knowledge. Society seems to have conditioned its members to accept that a few key institutions hold exclusive rights to the functions of creating and disseminating knowledge, thus effectively denying same to the ordinary person. Consequently, young adults need to recognize and acknowledge that they have a responsibility to contribute to the public pool of knowledge and to develop the capability not only for accessing from other sources but also for generating and disseminating.

In the face of the high failure rate among students at the Senior Comprehensive level, much attention has been focussed on student weaknesses in the rudimentary skills of reading, writing and arithmetic and the need for remediation at this basic level. While one cannot object to this view, those responsible for shaping educational policy in relation to this sector of the population, must realise that competence at this level only will still not equip the individual to function efficiently within the society. One therefore proposes that the broader perspective of functional literacy discussed above provides a more appropriate and meaningful framework for designing educational programmes aimed at facilitating the overall development of the disadvantaged youth of the nation.

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OREALC Activities

REDALF
Regional network for training of personnel and specific support in literacy and adult education programmes

Regional Project for Basic Adult and Youth Education (BAE)
Sub-project involving innovations in basic adult education

A Seminar-workshop on the systematization of BAE innovations was held on January 13-16, 1992. Participants included representatives from 8 institutions from Argentina, Chile, Colombia, Ecuador, Honduras, Mexico and Venezuela, selected for their innovative experiences.

OREALC presented the research proposal prepared in 1991 to systematize these experiences. This was reviewed and approved by the group. In turn, participants presented the main innovative features to be analyzed and monitored until this coming December, when the workshop's activities will conclude in Honduras.

Awareness and teacher training activities surrounding innovations in the field of basic adult and youth education will be undertaken during the development of national studies.

Participating institutions enjoy technical support from OREALC and financial support from the Cooperation of the Government of Spain. The aim is to end up with analytical records on each situation dealt with, as well as annotated bibliographies on the systematization and innovations in this modality that will give an account of the process at regional level.

Horizontal cooperation

In-service training provided by the National Department of Adult Education of the Ministry of Culture and Education of Argentina and OREALC

Specialists from Bolivia, Colombia, Cuba, El Salvador, Mexico and Nicaragua underwent in-service training on basic adult education, in connection with the work being done in Buenos Aires and in the provinces of Mendoza, Entre Rios and Rio Negro.

This training took place from November 11-21, 1991 and focused on the knowledge of experiences on education and work and community organization and cultural recovery.

During the in-service training, attendants visited schools and adult education and basic adult education centers that operate in agreement with businesses, trade associations and other State agencies in the municipality of Buenos Aires and in the provinces mentioned.

Besides interviews with the representatives of the sectors involved, the trainees obtained a thorough knowledge of the education project of the Federal Programme of Argentina, particularly in terms of educational supply, adult teacher profiles, training strategies, curricular development and materials used. The evaluation, follow-up and systematization of these educational modes were also part of the study undertaken.

Course-workshop on research in adult education and its links to development

A course-workshop on research on adult education and its links to development was held in Patzcuaro, Michoacan, Mexico, with financial and technical support from OREALC and the Center for Regional Cooperation on Adult Education in Latin America and the Caribbean (CREFAL).

Participants included specialists from 14 countries: Argentina, Belize, Colombia, Costa Rica, Cuba, Ecuador, Guatemala, Mexico, Nicaragua, Honduras, Paraguay, Peru, El Salvador and Venezuela.

The general objective was to analyze the theoretical and methodological approaches of socio-educational research and its uses in literacy programmes, basic adult education, bilingual education and education-and-work.

The specific objectives were to analyze the conceptual and methodological bases of the different approaches used in research on

adults, to study concrete examples of research recently undertaken in the region and to design research projects relevant to each country participating in the course-workshop.

The review of recent projects and studies in the region included, among others, the research carried out by OREALC in the field of basic youth and adult education, functional illiteracy and intercultural bilingual education.

REPLAD.
Regional network for the training, innovation and research in the fields of planning and administration of basic education and literacy programmes

Project II. Training of key personnel

Area: *Theory and practice of educational planning and management*

1. An experimental workshop on the "GESEDUCA" model will be held in the Province of Mendoza, from May 18-22, 1992, to pursue new kinds of management for educational establishments. This model consists of four components that combine the organization's strategic progress cycle with the management improvement cycle: vision, planning, operations management and quality of processes.

The objective of the workshop is to train those responsible for the education centers selected for pilot testing on the methodological and instrumental aspects of the model.

2. The Centre for Studies on Improving Higher Education (CEPES) of the University of La Habana is currently preparing a course on the Planning and Administration of Higher Education Institutions, scheduled to take place from June 8-26, 1992 and from November 29 to December 17, 1993.

The programme is composed of two blocks of disciplines: Administration of Higher Education Institutions and University Planning. The first block of disciplines includes the study of some basic processes that take place in the administration of higher education institutions such as academic administration, human resources management and financial resource management.

The second block is made up of disciplines regarding the interrelation of national and regional levels with the planning and educational development of higher education institutions. To these ends materials are included that relate to population, higher education and employment, development, planning and institutional evaluation and organization of scientific work in higher education institutions. In addition, some subjects are included on the use of computers in university administration and planning.

In addition, conferences are offered on the development of Cuban education, the economic crisis in Latin America and the Caribbean and new tasks and improvement of higher education in Cuba.

3. Within the framework of the Project on Educational Materials being developed by the Secretariat of the Andres Bello Agreement (SECAB) in various Latin American countries, an International Seminar on Educational Materials Programme was held from March 30 to April 3, 1992, in Paipa, Colombia, with the collaboration of the GTZ Foundation of Germany. Its main objectives were to analyze the situation of quality and access to educational materials and to outline strategies that would allow for the development of a self-sustained structure to produce these materials.

Seminar proceedings may be directly requested from Mr. Ricardo Hevia, Coordinator of the Education Sector of SECAB.

4. The Center for Educational Administration of the University of Concepcion, (Chile), sponsored by the ANDES Foundation, is undertaking the "Project for the Training and Further Training of Leaders for Curricular Administration and Creativity for Technical and Professional Teaching in the 8th Region". Phase one of this Project took place on January 6-17, 1992, and was attended by 36 teaching directors from technical and professional schools in the 8th Region (Chile).

The basic purpose of the Project is to develop a methodology of curricular administration based on a dynamic and functional creativity, that must operate through innovative leadership capable of harmoniously combining the expectations of productive and service institutions with the occupational and vocational interests of students.

Project IV. Horizontal cooperation

Network coordinators were requested to verify and ratify the activities offered and the demands that arose during the last Technical Meeting of REPLAD V that took place in November 1991 in Santo Domingo, Dominican Republic, in order to reconcile and negotiate the national activities of the REPLAD Plan.

SIRI
Regional Information System

Area: *Data base of qualitative and statistical educational information*
Course of action: *Educational statistics base by country*

Replies were received from 1500 Chilean academics on their activities at university level. These are being processed with the collaboration of the Carnegie Foundation. Tabulations are expected to be available by May, 1992.

Information will be gathered on secondary education in order to prepare the next report on the "Educational Situation in Latin America and the Caribbean 1980-1991", thus fulfilling the agreement by representatives of countries at the PROMEDLAC IV meeting held in Quito (April, 1991). The questionnaires will be sent in the second half of 1992 and their processing will begin in early 1993, in order to submit a preliminary version to the countries at PROMEDLAC V.

Area: *Analysis of statistical and documental information*
Course of action: *Publications*

OREALC-SIRI, in conjunction with ECLAC, estimated the resources necessary to undertake the strategies required by the economic development of the region. This information appears in *Educación y Conocimiento: eje de la transformación productiva con equidad*, that was jointly published by both institutions and reviewed at the meeting of Ministers of Economy that took place in Santiago (May 8-15, 1992).

Resources in Education (RIE) is a monthly publication of the U.S. Government Printing Office that includes summaries of OREALC publications containing regional statistical information. The corresponding microfiches are part of the ERIC system and are available in over 600 higher level institutions of that country.

The Yearbook of International Organizations will include the Regional Information System (SIRI) in its 29th edition (1992/1993). This will facilitate the exchange of information and international comparisons.

The World Bank will publish the article *Repetition in Latin America's primary schools: magnitudes, causes and possible solutions* in its "A view from LATHR" series. A preliminary version was discussed at a seminar held in Washington D.C. on May 8, 1992.

Información y toma de decisiones en Educación is a publication in which A. Rojas analyzes interviews with education executives from four countries. It is part of an attempt to understand the degree to which it circulates. The information is used in education systems.

Area: *Analysis of statistical and documental information*
Course of action: *Information processing and report preparation*

An analysis of the "Asignación de recursos para la educación básica y media: el caso de Chile" ("Resource allocation for basic and secondary education: the case of Chile") was prepared for a group headed by J. Batista Oliveira and C. Moura Castro. This report is of interest for those interested in decentralization processes in the handling of financial resources.

Information will be gathered on training, the time devoted to teaching and teaching techniques used by teachers in three countries. The Centre for Education Studies of Mexico, the Chagas Foundation of Brazil and FLACSO of Argentina will carry out these studies in the course of 1992. To a large extent, the information will be comparable and will permit a better understanding of the role of teachers in teaching. Progress reports are expected for late 1992.

Area: *Exchange and use of information and documentation*
Course of Action: *Identification of information needs*

SIRI presented 12 educational indicators for monitoring progress in National Targets in Favour of Infancy at the Technical Meeting on Monitoring organized by the UNICEF Regional Office in March 24-27, 1992. Most of the indicators can be estimated using the information gathered annually by the Ministries of Education. Those interested may request further information from E. Aranibar, P.O. Box 7555, Bogota, Colombia.

The World Bank is preparing a report on Secondary Education. Nine groups have been hired to analyze the curriculum, the teaching of science, lobbyists for change, academic achievement factors, the relations with higher levels, the economic effects of investing in secondary education and the historic perspective. OREALC will collaborate with regional case studies and an analysis of the trends in student flows.

Area: *Exchange and use of information and documentation*
Course of action: *Information subnetworks*

Information on the factors that determine repetition and achievement levels will be gathered by OREALC and the World Bank in collaboration with REDUC-associated centres. A new issue of Monothematic Abstracts will be published as part of this data-gathering effort.

The Northern Hemisphere Research Advisory Group (NORRAG), which collaborates with similar groups in developing regions, will meet in Geneva, Switzerland, from June 12-13, 1992. NORRAG is a source of information on research in education related to decision-making. It is coordinated by K. King, University of Edinburgh, 40 George Square, Edinburgh, EH8 9LL, U.K.

The Information System on Projects and Programmes of Cooperation and Integration in LAC (PESICRE) operates in the Secretariat of the Latin American Economic System (SELA). It is a support mechanism on political science matters with which SIRI collaborates. It is coordinated by José Kutos F., Apartado 17035, Caracas 1010A, Venezuela.

Area: *Exchange and use of information and documentation*
Course of action: *Programmes for the analysis and projection of information*

The Michelangelo virus that was activated on Friday, March 6, 1992, reminded Data Bank operators of the need to have some type of protection.

A computer programme for consulting on research results in developing countries was discussed in a workshop on "Simulation models and information software for educational policy design" organized by CIDE/CONICYT/BRIDGES/OREALC in Santiago (May 4-5, 1992). Programmes for training planners through design simulation and policy implementation (EPIC) were also presented.

SIRI has begun to study the way in which students born in the same year advance through the educational system over time, (cohort flows). A computer programme is being reviewed using the LOTUS calculation sheet, which permits one to estimate the average promotion, repetition and desertion rates of each cohort. Information by grade and by age for each year over a minimum 8-year period is needed to operate it.

Area: *Management Information Systems*
Course of action: *Design and updating of systems*

Bolivia has begun the decentralized entry of statistical data submitted by schools. Microcomputers provided by UNICEF for each region allow data to be entered and processed using a common programme. The first results are expected by mid 1992, and the central consolidation during the second half year. A new OREALC mission supported this activity in April, 1992, and worked with a team of experts to complete the design of the Information System for the Ministry of Education (SIMEC).

Area: *Management information systems*
Course of action: *Seminars/Congresses*

The communication between documentation centers in the region was reviewed in a seminar organized in Lima (November 24-25, 1991) by the Institute for Latin America (IPAL), sponsored by UNESCO.

A regional workshop on the use of software for processing educational statistics will take place in Santiago in November 23-27, 1992. It is organized by UNESCO through its Statistics Division and by OREALC. The invitations to present candidates have been sent to UNESCO's national commissions.

The meeting of Basic Learning Needs (BLN) was reviewed at a seminar organized by OREALC and the International Development Research Center (IDRC) of Canada. 30 experts from the region examined the new teaching and management strategies necessary to respond to this challenge.

PICPEMCE
Regional network for the training, in-service training and further training of teachers

New focal institution in Argentina

The National Centre for Teacher Training of the Ministry of Culture and Education of Argentina has become a new focal point of the PICPEMCE network. Its institutional objectives are to promote, execute and support all actions aimed at the permanent training of teachers, coordinating with other Ministry bodies for specific functions. This will be achieved through a service that addresses the various interests, needs and expectations of the different jurisdictions, in order to establish policies, courses of action and strategies that work towards educational change.

The new focal point involves a central body that has 42 specialists belonging to the different areas in education and who participate in the CENCAD and PROCIENCIA projects. This central body has its headquarters in Buenos Aires.

At the same time, there are thirty Institutional Training Centers (CCI) located throughout the country. The training actions of these are coordinated by two coordinators and operate within the framework of educational change policy advanced by the Ministry of Culture and Education.

Its programming for 1992 involves the preparation of projects for the different areas, which will use various strategies for attracting students, such as distance education, workshops, group-thinking symposiums, use of multimedia, publications, etc. Among the projects scheduled are those involving the updating of scientific content and teaching models in the different subjects: social sciences, mathematics, language, chemistry, physics, biology, shorthand and typing. Seminars will also be held on participatory research with national, provincial and private sectors, based on key topics such as school failure, harmonious relations, rural and marginal area schools, etc.

Other activities scheduled will deal with the training of directors and supervisors, the revitalization of the PICPEMCE Network, implementation of the Plan for training by partial attendance multimedia and distance training.

Special Education

The OREALC Special Education Programme has prepared a series of videos entitled "Learning together", which deal with the topics of integration into a common school of children and youths with special educational needs (handicapped). This series has been conceived as support material to accompany programmes imparting information and training in this area.

The material may be used for various target populations which are involved, in one way or another, or are preparing to integrate students with learning disabilities into a school setting. The video series seeks to be thought-provoking and to stimulate analysis and the exchange of ideas between teachers, directors, supervisors from the regular education system, professionals from various disciplines, social workers, students, parents, etc.

The series "Learning Together" is composed of five modules, that focus on different, though clearly interrelated aspects of the integration process. The modules last from 15 to 20 minutes each and may be used separately or as a whole.

Environmental education

The International Environmental Education Programme (PIEA) is beginning its eighteenth biennial phase (1992-1993). Designed in 1975 by UNESCO in conjunction with UNEP, it seeks to respond to resolution 96 of the 1972 United Nations Conference on Human Environment. The development of environmental education is, in the criteria of the organization, strongly linked to environmental conservation, the sound use of natural resources and to achieving environmentally sustainable development. Thus, UNESCO has actively participated in the preparation of the United Nations Conference on Environment and Development, to take place in Brazil in June 1992.

OREALC is responsible for starting up PIEA in Latin America and the Caribbean. It has carried out a series of activities on environmental education of interest to Member States of the region. These have essentially focused on:

- teacher training,
- preparation of teaching programmes and teaching materials,
- research and experimentation

- environment-related information.

Improving quality

In considering the educational conditions of Latin America, PIEA, along with fulfilling its world-wide objectives, has supported regional efforts aimed at improving the quality of education within the framework established by the Major Project in the Field of Education. Improving the quality of education implies, among other things, meeting basic learning needs, many of which can be consolidated through a process of environmental education. Thus, programme activities have particularly aimed at incorporating environmental education into primary education, which is considered the most appropriate level for developing attitudes and skills aimed at an adequate interaction with the environment. The need to train citizens who are aware of the need for sound management of natural resources and what this entails in terms of environmentally sustainable economic development, is a basic imperative for dealing with the poverty of the population and the deterioration of the quality of life. The development model of productive change with social equity recently proposed by ECLAC for the region includes the concept of environmental sustainability that must be incorporated into educational activity through environmental education.

In primary education

In this respect, OREALC has undertaken a series of activities within the framework of PIEA, aimed at incorporating environmental education into general primary education. Among these activities is the analysis of the initial training of future primary teachers, studying what type of curricular adaptation would be necessary in the different teacher training institutions - teacher training schools, university institutions, etc., in order to incorporate environmental education into teacher training, and what the major difficulties would be for teachers to start up environmental education in the classroom. These topics were among those dealt with in two subregional workshops held in 1991 (Quito, Ecuador, July 29 to August 1; Antigua, Guatemala, November 4-7). They served as a way to make known the fact of the environmental training of primary school teachers in 17 countries in the region. In addition, teacher training institutions in Brazil, Chile, Cuba and Panama are undertaking projects on the incorporation of environmental education into primary school teacher training,

On the other hand, the National Pedagogical University of Colombia is developing a prototype curriculum for the initial training of primary school teachers, as well as one for primary schools. A similar project, but for secondary schools, is being undertaken by the University of Costa Rica.

Information and research

In the field of information on the environment, OREALC publishes the Spanish version of the Environmental Education Bulletin "Contacto" that informs on activities at world level in the field of education and the environment. Likewise, the PIEA module series on environmental education is published in Spanish with local adaptations of this material essentially aimed at teacher support.

OREALC fosters the development of national strategies and action plans on environmental education for the purpose of supporting the instituting of activities which are often carried out in isolation by so many government agencies, nongovernment organizations and universities in the different countries of the region. To this end, national meetings have been held on the subject in Argentina, Chile, the Dominican Republic and Ecuador, and these activities are scheduled to continue in other countries. What is intended is that the different national agencies related to the subject, prepare a national proposal on environmental education that can be incorporated into the educational and environmental policies of each country.

In secondary education

At the present stage, and without cutting off support for the introduction of environmental education at elementary school level and for the development of national strategies on environmental education, OREALC will promote the incorporation of environmental education at the secondary school and university undergraduate level. Likewise, it will continue to carry out local adaptations of teaching material to support the teacher's work in the classroom.

Publications OREALC

- *Hacia una pedagogía de solución de problemas en la educación ambiental.* Environmental Education, Module No. 15. UNESCO /UNEP, Santiago, Chile. December 1991, 106 p.

- *Docentes y docencia. Las zonas rurales.* Marcela Gajardo and Ana María de Andraca. UNESCO/FLACSO. Santiago, Chile, January 1992, 156 p.

- *A la educación por la comunicación. La práctica de la comunicación educativa.* Mario Kaplún. Santiago, Chile, January 1992, 236 p.

- *Educación y conocimiento: eje de la transformación productiva con equidad.* UNESCO/ ECLAC, Santiago, Chile, March 1992, 270 p.

- *Education and knowledge: Basic pillars of changing production patterns with social equity.* UNESCO/ECLAC, Santiago, Chile, March 1992, 258 p.

- *Medición de la calidad de la educación: ¿por qué, cómo y para qué?.* Vol. I, REPLAD, Santiago, Chile, February 1992, 90 p.

- *Información è Innovación en Educación.* International Bureau of Education, IBE. Santiago, Chile, December, 1991, 8 p.

- *EFA 2000,* No. 6, enero-marzo 1992. World Conference on Education for All Bulletin (WCEFA). UNESCO, Santiago, Chile, March 1992, 8 p.

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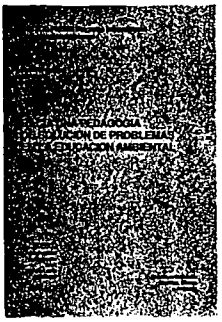

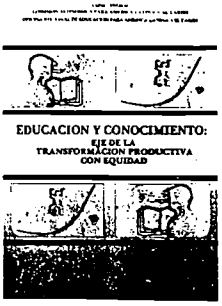

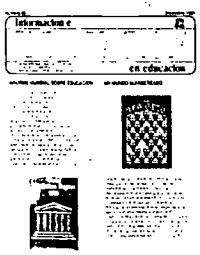

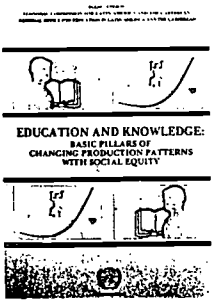

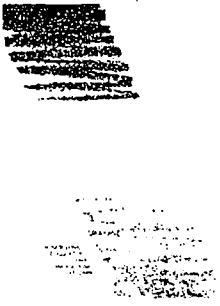

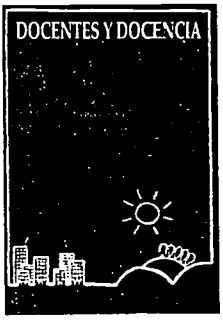

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