

PN-ACK-294

Improving Educational Quality Project  
Guide To Information Sources

A Description of Work in Progress

Prepared for:

Office of Education  
Bureau for Research and Development  
United States Agency for International Development  
Washington, DC

Project undertaken by:  
Institute for International Research  
in collaboration with  
Juárez and Associates  
and  
University of Pittsburgh

Contract #DPE-5836-C-00-1042-00  
Technical Report #1

Prepared by:  
L.E. Klopfer  
University of Pittsburgh

A

*The success of Education for All actions will ultimately be determined by the capacity of each country to design and implement programs that reflect national conditions. A strengthened knowledge base nourished by research findings and the lessons of experiments and innovations as well as the availability of competent educational planners will be essential.*

*World Conference on Education for All:  
Framework for Action to Meet Basic Learning Needs*

## INTRODUCTION

As countries move forward in developing plans and interventions that address the goals set forth by the World Conference on Education for All, we are reminded of the words of Unesco's Director-General Federico Mayor:

*If success is to be achieved, it is essential not only to do more, but also to do it differently.*

The Improving Educational Quality (IEQ) Project will be assisting efforts in developing countries that aim at making significant improvements in educational quality: The IEQ Project focuses on finding practical ways to improve learning outcomes through a better understanding of how learning takes place in schools and classrooms. The Project supports efforts that are trying to do things differently. These may include locally-inspired innovations, adaptations of interventions that have been proven successful in other countries, and activities that strengthen classroom instruction within ongoing programs of educational improvement. In sum, the IEQ Project seeks to encourage and assist those activities that are both: (a) firmly anchored in schools and classrooms, and (b) seek to attain learning outcomes of increased magnitude and more equitable distribution.

The Project is mindful of the fact that there is little point in doing things differently if there is no systematic attempt to learn from the experience. In planning and conducting its activities, the IEQ Project hopes to contribute to what the World Conference on Education for All's *Framework for Action* calls a strengthened knowledge base. Of special interest is the knowledge that will assist countries in designing and implementing programs to improve teaching and learning in the classroom. The present document describes a key part of the IEQ Projects planned contribution to strengthening the knowledge base, our Guide to Information Sources.

Assisting developing countries in obtaining information that will be useful in designing and implementing programs to improve teaching and learning in classrooms is complicated by four factors.

First, there is much research on classroom practice in developed countries but very little from developing countries. Noel McGinn (1991) describes the situation as follows:

*For example, the research in the United States on classroom practices of teachers is so extensive that several lengthy volumes are filled with summary reviews of this research, while no more than 100 original studies of classroom practice are listed in the REDUC bibliography of education research in Latin America, the largest single collection for a region of the Third World (p. iii).*

Besides the paucity of educational research from developing countries, there is the question of the relevance of applying research findings from developed countries to developing ones or from one developing country to another. As McGinn cautions, it is "not always useful to make generalizations from research in rich countries and

apply them to poor countries (since the) context and dynamics of the teaching-learning process may differ in fundamental ways."

We must heed this caution. We should not try to use the knowledge base to make generalizations across countries. We should not look to the knowledge base for answers, but for questions to be asked as educational interventions are being designed and implemented. Experience from different countries, different knowledge sources, and different research perspectives is useful in suggesting alternative courses of action, design and implementation variables that need to be considered, constraints to implementation that must be anticipated, and possible strategies that might be used to foster sustainability of the intervention.

Second, educators and planners in developing countries often have difficulty in accessing the knowledge base in a convenient and timely fashion. There is no single accessible repository of information covering all the different aspects related to improving instruction. Information from developing countries, even when it has been produced, is particularly difficult to access. The time and expense required for searching for relevant information, especially when one must seek help in distant countries, means that relevant experience is simply not tapped when new interventions are being designed and planned.

Third, the output obtained from searches of existing databases like ERIC often provides inadequate information for designing and implementing educational programs in developing countries. Frequently, the voluminous computer printout from such searches fails to capture (a) the most important sources of information on a particular topic or (b) relevant sources from the Third World. Furthermore, it is

often difficult to know which sources that have been identified are important and which ones are not.

Fourth, strengthening the knowledge base does not mean developing a new database. Developing a single database to cover the different aspects related to improving instruction and germane to the experience of developing countries is not feasible for the IEQ Project. The costs of producing, updating, and disseminating such a database would be prohibitive. Moreover, it is by no means clear to what extent recently-produced computerized databases relating to Third World education are being used by educators and planners and developing countries. What is likely to be helpful is a more intelligent and efficient guide through existing sources of information relevant to various aspects of improving educational quality in classrooms in the Third World.

### THE IEQ GUIDE: AN OVERVIEW

The IEQ Project will contribute to a strengthened knowledge base through a process by which it will locate and share pertinent information covering various aspects related to the improvement of educational quality. At the heart of this process is a *Guide to Information Sources*.

The Guide is a collection of key sources of information that relate to different aspects of improving classroom instruction and management. The Guide is intended to serve as a gateway to information that will enable us to respond to specific requests from educators, planners, and researchers working with the IEQ Project. Key sources will be identified throughout the life of the Project and in consultation with the educational research and development community in the United States and

other countries. We will concentrate on collecting information in those areas that are of greatest interest to cooperating countries.

Some salient features of the Guide are:

- It focuses on the classroom -- instruction in basic skills, instruction in various subject-matter areas, classroom management techniques, teaching techniques, assessment methods, instructional materials, and so on;
- It contains the insights and experiences of practitioners;
- It contains summaries of the findings of researchers;
- It includes data from all continents -- developing as well as industrialized countries;
- It attends to several special concerns of today's educators -- gender issues, equity in education, thinking and problem-solving skills, multicultural education, bilingual education, schooling for work, and so on;
- It provides information chiefly from recent sources;
- Its sources include both written documents and databases that are accessed electronically;

The Guide consists of two closely integrated components: a set of source documents and a document locating system. The source documents are physical records, each describing one source of information in the Guide. Sources may be any of the following:

- Publications, including books, journal articles, book chapters, reports, conference papers, and booklets;
- Databases, from which information can be retrieved electronically;
- Institutions and organizations that have produced a series of pertinent papers, reports, and books;

- Memos and other fugitive documents, some with restricted circulation, which authors have contributed.

Each source document contains an abstract of the information source plus an identification number, short title or description, full bibliographic reference, location, and accessing information. In other words, the source document tells us briefly what information the source provides, and where to find it.

Complementing the set of source documents is the document locating system. This component consists of a computer program and a file of electronic records, each containing codes that describe one source document. The computer program helps us locate those source documents that pertain to a particular request for information. We are using a popular computer program, dBase4, in our document locating system.

## ORGANIZATION OF THE GUIDE

The Guide is divided into two main divisions of information:

- Research pertinent to educational quality and interventions (Division A).
- Information about instructional improvement projects (Division B).

Table 1 shows the subdivisions within each of the major divisions. First, we briefly explain the rationale for including both major sources of information.

The IEQ Project strongly believes that designing interventions that will make a difference in classrooms must take into account pertinent findings of research related to instruction, learning, and the implementation of innovations in educational systems. There are several reasons for this belief. First, it should be clear to most people by now that successful educational interventions are likely to be those where the improvement of practice is well-informed by research. A good engineer is

someone who understands the scientific principles being applied to the task at hand. Second, cognitive science perspectives are becoming increasingly dominant in contemporary research on school-related learning and informed discussions of instruction. Hence, incorporating cognitive science perspectives into the design of instructional interventions will become more and more common, and educators and planners in developing countries will want to become more familiar with the content and application of this research. Third, the multifaceted nature of teaching and learning in the classroom means that instructional improvement projects ought to be informed by the findings and insights in other pertinent domains of academic and applied research, and these perspectives should be incorporated into the planning, design, and implementation of the intervention. For example, the design of an intervention to improve achievement in mathematics will be informed by, among other things, research on attitudes and classroom environments and research on gender and equity issues. To facilitate entry into the various research domains that offer pertinent orienting perspectives, Division A of our source document collection contains key sources for each domain.

The IEQ Project believes that any new attempt at improving classroom instruction should take into account experiences gained from instructional improvement projects conducted during the 1960's, 1970's, and 1980's in the United States and other countries. We are in the process of identifying key sources that describe these experiences. The information in these sources generally reflects the perspective of program planners and practitioners. It gets at the practical issues of program design, implementation, and evaluation. Failing to capitalize on the

experience of others leads to inefficient trial and error or to the design of interventions that takes insufficient account of variables and issues likely to be crucial for program success.

Table 1 below shows how the two major Divisions are divided:

Table 1

**Organization of Source Documents**

**Division A: Orienting Perspectives**

**1. Elements of high quality instruction and achievement**

- a) student-focused criteria
- b) system-focused criteria

**2. Insights from pertinent research domains**

- a) cognitive science research
- b) instructional effectiveness research
- c) school effectiveness research
- d) staff development research
- e) research on student assessment and testing
- f) program and course evaluation
- g) research on knowledge producing/disseminating organizations
- h) research on knowledge development and diffusion
- i) research on change in the context of education  
(pervasive and system level changes)
- j) research on educational change processes in schools
- k) research on cost-effectiveness and efficiency issues
- l) research on attitudes and classroom environments
- m) research on gender and equity issues
- n) research on preschool experience and readiness

## Division B: Instructional Improvement Projects in the U.S. and Other Countries

1. Improving subject-matter learning and basic skills learning
  - a) language arts  
(including reading, composing, speaking, literature)
  - b) mathematics
  - c) vocational and technical education; technology education
  - d) health
  - e) science
  - f) social studies  
(including history, geography, civics, cultural heritage)
  - g) music and visual arts
  
2. Improving classroom instruction and management
  - a) grouping students in the classroom for learning activities  
(Examples: cooperative learning, peer tutoring, teams)
  - b) classroom management and instructional methods and techniques
  - c) utilization of instructional technology  
(Examples: films, radio, microcomputers)
  - d) student assessment
  - e) school organization

### SOURCE DOCUMENTS CONTAINED IN THE GUIDE

The Guide already contains over 222 sources (about 100 of these have been written up as source documents). Of these, 95 or 43% are in Division A (research), and 127 or 57% are in Division B (projects). Within the organizational subdivisions,

89% of the subdivisions contain at least one source, and 71% contain at least three sources. We think that this is a good start, but it is just a beginning. Appendix 1 presents examples of source documents. A source document runs one or more pages, depending on the length of the abstract needed to describe the source adequately. We have included here abstracts for three types of sources: printed publication, database, and series. These represent both Division A and Division B sources.

Many sources contain information pertaining to several subject-matter areas or/and instructional techniques. Our locating system enables us to identify information sources having any single characteristic or combination of characteristics we specify. We have coded each source document so that we can identify the source by:

- the subject-matter area(s) it pertains to;
- the instructional improvement technique(s) it deals with;
- the special educational concerns it attends to;
- the grade levels covered;
- its regional focus (Africa, Latin America, and so on);
- the language in which it is written;
- the type of research, if any, it includes.

In addition, we have rated each source to indicate its relative value for providing information relative to other sources in its Division. For example, Division B sources that contain fairly comprehensive project descriptions and information about implementation issues, costs, and evaluation results are rated "excellent;" somewhat

less comprehensive sources are rated "good," and sources that are sketchy are rated "possibly useful."

Table 2 lists the source documents in the Guide as of March 1992, organized by division and sub-division.

### USING THE GUIDE

The Guide is meant to be used -- at least initially -- to respond to specific requests from planners, educators, and researchers working with the IEQ Project. They will use the Guide as follows:

1. A colleague on one of the host country research teams collaborating in the Project requests information on an area of instructional improvement by mail, telephone, or fax. The request is addressed to the IEQ Project staff in Washington, D.C. Following any needed clarification, the request is sent to the University of Pittsburgh, where the locating system and source documents currently are kept.
2. IEQ Project staff at the University of Pittsburgh will search the collection of source documents for sources providing information that is closely targeted to the request. We plan to respond to each request with a specially prepared Instructional Improvement Information Portfolio. This will contain (a) descriptions of projects undertaken throughout the world related to the particular instructional problem or intervention; (b) key considerations relating to these projects, e.g., cost of supplies and equipment, implementation parameters, needed teacher support, results of project evaluations; and (c) the findings from research relevant to the problem or intervention. The Portfolio

also will identify people, and possibly institutions, from whom further information might be obtained.

3. After reviewing the Portfolio materials, our collaborators might request an extended search of the literature suggested from the key sources contained in the Guide.

### EXAMPLES OF THE USE OF THE GUIDE

We offer two brief examples of how the Guide might be used.

#### Example 1

Let us suppose that the Director of Primary Education and her staff in one of the Project's collaborating countries in Central America have decided to begin designing a pilot project aimed at improving primary school science education. They send a fax to the IEQ Project requesting relevant information. Upon receiving the request, the IEQ staff uses the Guide's computerized document locating system to identify all sources coded "primary level" and "science".

We get a list of source documents referring to two database sources and various printed publications sources. Some of the printed publications sources include descriptive information about school science projects. We also find sources on particular instructional techniques and strategies used in teaching primary school science. Other sources focus on practical implementation issues such as the costs associated with science instruction and the special difficulties in bringing science instruction to elementary schools located far from an urban area. Another group of sources provides information on gender and racial/ethnic equity issues in relation to science teaching. Finally, we find sources with information on people and

organizations with expertise in the development of elementary school science instruction.

Next we consult the databases to which we were referred to locate additional publications and reports that will be useful. With our complete list of sources before us, we identify those that the Director may have access to in her own country and those that she may not be able to find but that we can copy and send. We then compose an Instructional Improvement Information Portfolio that includes the complete list of sources we identified (noting in particular those available in Spanish and published or present in Central America), the set of documents that we have copied, and up-to-date information about some work in progress in Latin America, Africa, and Southeast Asia on similar projects.

Having received and studied the portfolio, the Director identifies several publications on the list that we have not sent and she cannot locate. We use our resources to help locate them and send copies to her.

### Example 2

Now suppose that the USAID Mission in an East African country has agreed with the Ministry of Education to help with interventions that may keep more girls in school throughout secondary school. The Mission's Education Officer and the Ministry have recognized the problem and want to begin to solve it, but they are uncertain about which factors contribute to its cause -- parental attitudes, costs, girls' experiences in the classroom, girls' motivation, and so on. They call the IEQ Project and ask for relevant information. The IEQ staff locates pertinent source documents by searching for sources coded for both "gender issues" and "secondary level."

The list of sources identified includes several journal articles on how girls perform differently than boys in certain subjects and research concerning teachers' treatment of girls and boys. Two databases are identified, including the SHARE database, which leads us to reports on projects designed to improve girls' education. We also find two sources on projects in Africa that aim to improve the persistence rate of girls and a doctoral thesis from West Africa on parents' attitudes toward sending their daughters to school. Finally, we find a series of publications by Unesco on girls' education.

In the Portfolio we send to the Education Officer, we include the complete list of sources that we identified, as well the computer disks containing the SHARE database software and files, key reports from the projects in Africa, and copies of those journal articles particularly relevant to the East African situation. Some weeks later, the Education Officer sends a fax listing a book and a series of publications that he would like us to obtain and asks us to search for more information on parental attitudes in East Africa toward girls' education.

### LOOKING AHEAD

The IEQ Project will add to the Guide and respond to requests for information throughout the life of the project. In some cases, it may not be possible to provide a comprehensive Instructional Improvement Information Portfolio in response to a request. However, being able to provide a partial listing of key sources on pertinent aspects of educational quality (drawn from our compilation of Source Documents -- an expanded Table 2) will still be useful.

As we seek to engage the wider research and development community in the United States and other countries in IEQ Project activities, we will ask for their recommendations as to key sources of information that should be included in the Guide. Again, our intention is not to identify everything that has been written on a particular topic. Rather, we are looking for a manageable list of sources that will provide genuine help in the process of designing and implementing effective instructional interventions in developing countries.

TABLE 2

SOURCE DOCUMENTS CURRENTLY IN IEQ GUIDE

ELEMENTS OF HIGH QUALITY INSTRUCTION AND ACHIEVEMENT

- A00 01 Lockheed, M.E. & Verspoor, A.M. (1991). Improving primary education in developing countries. Washington, D.C.: The International Bank for Reconstruction and Development/ The World Bank.
- A00 02 Meeting basic learning needs: A vision for the 1990s. Background document for the World Conference for All. Gumption, Thailand, 5-9 March 1990. New York: The Inter-Agency Commission (UNDP, UNESCO, UNICEF, WORLD BANK) for the World Conference on Education for All.
- A00 03 Glasser, William (1990). The quality school: Managing students without coercion. New York: Perennial Library.
- A00 04 Lowe, John & Instance, David (1989). Schools and quality: An international report. Paris: Organization for Economic Co-Operation and Development.
- A00 05 Verspoor Adriaan (1989). Pathways to change: Improving the quality of education in developing countries. Washington, D.C.: The World Bank.
- A00 06 Englebert, P. & Kane, C. (1989). Empirical studies on the quality of primary and secondary education: An annotated bibliography. (PHREE background paper series, Document No. PHREE/89/19). Washington, D.C.: The World Bank, Education and Employment Division, Population and Human Resources Department.
- A00 07 Hopkins, David (Ed.) (1987). Improving the quality of schooling: Lessons from OECD International School Improvement Project. London; New York: Falmer Press.
- A00 08 Korean Educational Development Institute, Seoul, Development Inst. (Series). Korea.
- A00 09 Drier, Harry N. & Grossman, Gary M. (1990). Achieving educational excellence: The challenge of the 90s on the Federated States of Micronesia. Overview of National Findings and Recommendations. Columbus: Ohio State University.

- A00 10 Fuller, Bruce (1987). What school factors raise achievement in the Third World? Review of Educational Research, 57(3), 255-292.
- A00 11 Mellor, Warren L. (1989). Implementation of reform for improving the quality and effectiveness of secondary education. Bangkok, Thailand: UNESCO Principal Regional Office for Asia and the Pacific.

**ELEMENTS OF HIGH QUALITY INSTRUCTION AND ACHIEVEMENT:  
STUDENT-FOCUSED CRITERIA**

- A01 01 (1990). Effective schooling practices: A research synthesis, 1990 update. Portland, OR: Northwest Regional Educational Laboratory.
- A01 02 Armitage, J. et al (1986). School quality and achievement in rural Brazil. (Discussion Paper No.EDT25). Washington, D.C.: The World Bank.

**ELEMENTS OF HIGH QUALITY INSTRUCTION AND ACHIEVEMENT:  
SYSTEM-FOCUSED CRITERIA**

- A02 01 Heller, Dawn H. (1989). Winning ideas from winning schools: Recognizing excellence. Santa Barbara, CA:ABC-CLIO.
- A02 02 Ross, Kenneth & Mhahck, Lars (Ed.) (1990). Planning the quality of education: The collection and use of data for informed decision-making. Paris, France:UNESCO, International Institute for Educational Planning. Oxford, England: Pergamon Press.

**INSIGHTS FROM PERTINENT RESEARCH DOMAINS: COGNITIVE SCIENCE RESEARCH**

- A03 01 Shuell, Thomas J. (1986). Cognitive Conceptions of Learning. Review of Educational Research 56(4),411-436.
- A03 02 Reggini, Horace C. (1983). A revision of learning and teaching. (Translation of Revision del aprender y del enseñar). Buenos Aires: Revista del Institutode Investigaciones Educatives, v9 n43 November 1983.
- A03 03 Takemura, S. (1989). A Study of Cognitive skills and other related factors in science education. Research project report Hiroshima, Japan: Hiroshima University, Research Institute for Higher Education.

**INSIGHTS FROM PERTINENT RESEARCH DOMAINS: INSTRUCTIONAL EFFECTIVENESS RESEARCH**

- A04 01      Bangert, R.L., Kulik, J.A. & Kulik, C.C. (1983). Individualized systems of instruction in secondary schools. Review of Educational Research, 53(2), 143-158.
- A04 02      Mohan, Madan & Hull, Ronald (Ed.) (1975). Teaching effectiveness: Its meaning, assessment, and improvement. Englewood Cliffs, NJ: Educational Technology Publications.
- A04 03      Martin, Barbara L. (1986). The affective and cognitive domains: Integration for instruction and research. Englewoods Cliffs, NJ: Educational Technology Publications.
- A04 04      Gagne, Robert M. (1985). The conditions of learning and theory of instruction. (4th Edition). New York: Holt, Rinehart and Winston.
- A04 05      Logan, Robert S. (1982). Instructional development: An international view of theory and practice. New York: Academic Press.
- A04 06      Resnick, L.B. & Klopfer, L. (Eds.) (1989). Toward the thinking curriculum: Current cognitive research. Yearbook of Association for Supervision and Curriculum Development.
- A04 07      Avalco, B. & Haddad, W. (1981). Review of teacher effectiveness research in Africa, India, Latin America, Middle East, Malaysia, Philippines and Thailand: A synthesis of results. Ottawa, Canada: International Development Research Centre. (Also available in Spanish).
- A04 08      Walberg, Herbert J. (1990). Productive teaching and instruction: Assessing the knowledge base. In H. Waxman & H. Walberg (Eds.) Effective teaching: Current research. Berkeley, CA: McCutchan Publishing Corporation.
- A04 09      Kober, Nancy. (undated). What we know about mathematics teaching and learning. Washington, D.C.: Council for Educational Development and Research.
- A04 10      Dechant, Emerald V. (1991). Understanding and teaching reading: An interactive model. Hillsdale, NJ: L. Erlbaum Associates.

- A04 11 Kutz, Ronald (1990). Teaching elementary mathematics: An active approach. Boston, MA: Allyn and Bacon.
- A04 12 Woolnough, Brian E. (Ed.) (1991). Practical science: The role and reality of practical work in school science. Milton Keynes, England; Philadelphia, U.S.A.: Open University Press.
- A04 13 Wilen, William (Ed.) (1990). Teaching and learning through discussion: The theory, research, and practice of the discussion method. Springfield, IL: C.C. Thomas.
- A04 14 Kindsvatter, Richard. Willen, W., & Ishler, M. (1988). The dynamics of effective teaching. New York: Longman.
- A04 16 UNESCO (1989). Innovative methods in technological education. Paris, France: UNESCO.
- A04 17 Thevenin, T. (1981). Pedagogical implications of language policy in African schools: A review of the Francophone literature. (Discussion Paper No. 81-29). Washington, D.C.: The World Bank, Population and Human Resources Division.
- A04 18 Tobin, Judith & Sharon, Donna (Eds.) (1984). New technologies in education in Canada: Issues and Concerns. New Technologies in Canadian Education Series, Paper 17. Ontario, Canada.
- A04 19 Silber, Ellen S. (Ed.) (1991). Critical issues in foreign language instruction. New York: Garland.
- A04 20 Collins, James L. (Ed.) (1991). Teaching and learning language collaboratively. Portsmouth, NH: Boynton Cook.
- A04 21 Totten, Samuel et al. (1991). Cooperative learning: A guide to research. New York: Garland.
- A04 22 Wilen, William W. (Ed.) (1987). Questions, questioning techniques, and effective teaching. Washington, D.C.: NEA Professional Library, National Education Association.
- A04 23 Sharan, Shlomo (Ed.) (1990). Cooperative learning: Theory and research. New York: Praeger.
- A04 24 Perraton, Hilary (Ed.) (1982). Alternative routes to formal education: Distance teaching for school equivalency. Baltimore, MD: Johns Hopkins Press.

- A04 25 Slavin, Robert E. (1990). Cooperative learning: Theory, research, and practice. Englewood Cliffs, NJ: Prentice Hall.
- A04 26 Lesgold, Alan M. (Ed.) (1987). Information technologies and basic learning, reading, writing, science and mathematics. Paris, France: Organization for Economic Cooperation and Development.
- A04 27 Arnold, John (Ed.) (1990). Visions of teaching and learning: Eighty exemplary middle level projects. Columbus, OH: National Middle School Association.
- A04 28 Tay A. K. B. (1989). Child-to-Child in Africa: Towards an Open learning strategy. Paris, France: UNESCO/UNICEF Co-operative Programme. ERIC Digest No. 29. ERIC Document No. ED 331 617.
- A04 29 Building students thinking skills. (1987). Produced in cooperation with NEA Mastery in Learning Project.
- A04 30 Wittrock, M.C. (ED.) (1986). Handbook of research on teaching. (3rd Edition). New York: Macmillan.
- A04 31 Bartz, D.E. & Miller, L.K. (1991). What research says to the teacher: 12 teaching methods to enhance student learning. Washington, D.C.: National Education Association.

## INSIGHTS FROM PERTINENT RESEARCH DOMAINS: SCHOOL EFFECTIVENESS RESEARCH

- A05 01 Taylor, Barbara O. (Ed.) (1990). Case studies in effective schools research. Dubuque, IW: Kendall Hunt.
- A05 02 Hord, Shirley M. (1987). Evaluating educational innovations. London: Croom Helm.
- A05 03 Bliss, J.R., Firestone, W.A. & Richards, C.E. (Eds.) (1991). Rethinking effective schools: Research and practice. Englewood Cliffs, NJ: Prentice Hall.
- A05 04 Levin, H. M. & Lockheed, M.E. (Eds.) (1991). Effective schools in developing countries. (Document No. PHREE/91/38). Washington, D.C.: International Bank for Reconstruction/The World Bank.

## INSIGHTS FROM PERTINENT RESEARCH DOMAINS: STAFF DEVELOPMENT RESEARCH

- A06 01 Juliebo, M.F. & Jackson, R.K. (1990). Partnership in teacher education: Research progress report. Paper presented at the Annual Meeting of the International Reading Association (35th, Atlanta, GA, May 6-11, 1990). ERIC Document No. ED324 688.
- A06 02 Ben-Peretz, Miriam (1990). Teachers Document their work: A strategy for school based professional development. Paper present at the Annual Meeting of the American Educational Research Association. Boston, MA. April 16-20, 1990.

## INSIGHTS FROM PERTINENT RESEARCH DOMAINS: RESEARCH ON STUDENT ASSESSMENT AND TESTING

- A07 01 Harris, A. (1991). Effective assessment of educational progress: A review of strategies for measurement of learning achievement. (Document No. PHREE/91/43). Washington, D.C.: The World Bank.
- A07 02 Stiggins, R., Rubel, E. & Quellmalz, E. (Eds.) (1988). Measuring thinking skills in the classroom. Washington, D.C.: National Education Association Professional Library.
- A07 03 Smith, Jeffrey K. (1977). Perspectives on mastery learning and mastery testing. Princeton, NJ: Clearinghouse on Tests, Measurements, and Evaluation.

A07 04 Report on Education Research - an independent biweekly newsletter in research education and learning. Alexandria, VA: Capitol Publishing.

A07 05 Eckstein, Max A. & Noah, Harold (Eds.) (1992). Examinations. Comparative and International Studies. New York: Pergamon.

#### INSIGHTS FROM PERTINENT RESEARCH DOMAINS: PROGRAM AND COURSE EVALUATION

A08 01 McLaughlin, Milbrey W. & Phillips, D.C. (Eds.) (1991). Evaluation and education. A quarter century. Chicago, IL: University of Chicago Press.

A08 02 Corner, Ross F. & Hendricks, Michael (Eds.) (1989). International innovations in evaluation education methodology. San Francisco: Jossey-Bass.

A08 03 New Directions for Program Evaluation. A publication of the Evaluation Research Society. Francisco; Washington; London: Jossey-Bass Inc, Publishers.

#### INSIGHTS FROM PERTINENT RESEARCH DOMAINS: RESEARCH ON KNOWLEDGE PRODUCING/DISSEMINATING ORGANIZATIONS

A09 01 Educational Research and Development Centers. Office of Research and Improvement (OERI). Washington, D.C.: U.S. Department of Education.

#### INSIGHTS FROM PERTINENT RESEARCH DOMAINS: RESEARCH ON KNOWLEDGE DEVELOPMENT AND DIFFUSION

A10 01 Wells, Clare (1989). The UN, UNESCO and the politics of knowledge. London: Macmillan.

A10 02 Chadwick, Clifton B. (1991). On the management of change: How not to develop textbooks. Educational Technology. 31(3), 7-15.

A10 03 Thomas, Murray & Kobayashi, Victor (Eds.) (1987). Educational technology: Its creation, development, and cross-cultural transfer. Comparative and International Education Series, Vol. 4. Oxford; New York: Pergamon Press.

A10 04 Altbach, Philip G. & Kelly, Gail P. (1988). Textbooks in the Third World: Policy, Content and the Context. Reference Books in International Education, Vol. 4. New York: Garland Publishing.

**INSIGHTS FROM PERTINENT RESEARCH DOMAINS: RESEARCH ON CHANGE IN THE CONTEXT OF EDUCATION (PERVASIVE AND SYSTEM LEVEL CHANGE)**

- A11 01 Harrison, Jo-Ann & Glaubman, Rivka (1990). Innovations and School Improvement. Journal of Research and Development in Education, 21(1), 21-33.
- A11 02 Arends, Richard, & Arends, Jane H. (1977). Systems change strategies in educational settings. New York: Human Services Press.
- A11 03 Waugh, R. & Punch, K.F. (1987). Teacher receptivity to systemwide change in the implementation stage. Review of Educational Research, 57(3), 237-254.
- A11 04 Chapman, David, W. & Carrier, Carol A. (Ed.) (1990). Improving educational quality: A global perspective. New York: Greenwood Press.

**INSIGHTS FROM PERTINENT RESEARCH DOMAINS: RESEARCH ON COST-EFFECTIVENESS AND EFFICIENCY ISSUES**

- A13 01 Tsang, Mun C. (1988). Cost analysis for educational policy making: A review of cost studies in education in developing countries. (BRIDGES Research Report Series, October 1988, No. 3) Cambridge, MA: Harvard Graduate School of Education, Project BRIDGES.
- A13 02 Cummings, William K. (1986). Low-cost primary education: Implementing an innovation in six nations. Ottawa, Ont., Canada: International Development Research Centre.
- A13 03 Jimenez, E. (1986). Structure of Educational Costs: Multiproduct cost functions for Primary and Secondary schools in Latin America. Economics of Education Review, 5, 25-40.
- A13 04 Eicher, J. (1984). Educational costing and financing in developing countries - with special reference to Sub-Saharan Africa. (Staff Working Paper No. 655). Washington, D.C.: The World Bank.
- A13 05 The Economics of New Educational Media. Volumes 1, 2, 3. The UNESCO Press.
- A13 06 Schiefelbein, E. (1990). Seven Strategies for improving the quality and efficiency of the education system. Notes, Comments No. 192. Paris, New York, UNESCO, UNICEF, UN, World Food Programme.

- A13 07 Fuller, Bruce (1986). Raising school quality in developing countries: What investments boost learning? Washington, D.C.: The World Bank.
- A13 08 Metcalf, David (1985). The economics of vocational training: past evidence and future considerations. Washington, D.C.: The World Bank.
- A13 09 Bray, Mark & Lillis, Kevin (1988). Community financing of education: Issues and policy implications in less developed countries. Comparative and International Education Series, Vol. 5. Oxford; New York: Pergamon Press.
- A13 10 Center on Education Finance and Productivity. University of Southern California, School of Education. Los Angeles, CA.

**INSIGHTS FROM PERTINENT RESEARCH DOMAINS: RESEARCH ON GENDER AND EQUITY ISSUES**

- A15 01 Stromquist, N. P. (1989). Determinants of educational participation and achievement in the Third World: A review of evidence and a theoretical critique. Review of Educational Research, 59(2), 143-183.
- A15 02 Wilkinson, L.C. & Marrett, C. B. (Ed.) (1985). Gender influences in classroom interaction. Orlando,FL: Academic Press.
- A15 03 Klein, Susan S. (1980). Sex equity in education: National Institute of Education sponsored projects and publications. Washington, D.C.: U.S. Department of Health, Education, and Welfare.
- A15 04 Kenway, Jane & Willis, Sue (Eds.) (1990). Hearts and minds: Self-esteem and the schooling of girls. London; New York: Falmer Press.
- A15 05 Powers, Jane B. (1991). "Girl question" in education: Vocational training for young women in the progressive era. New York: Taylor & Francis.
- A15 06 Michel, Jean (Ed.) (1988). Women in Engineering Education. Paris, France: UNESCO.
- A15 07 Klein, Susan S. (Ed.) (1985). Handbook for Achieving Sex equity Through Education. MD: John Hopkins University Press.
- A15 08 Lockheed, M. et al. (1986). Sex and ethnic differences in mathematics, science and computer science: What do we know? Princeton, NJ: Educational Testing Center.
- A15 09 Fennema, E., & Leder, G. (Ed.) (1990). Mathematics and gender. New York: Teachers College, Columbia University.

- A15 10 Friedman, L. (1989). Mathematics and the gender gap: A meta-analysis of recent studies on set differences on mathematical tasks. Review of Educational Research, 59(2), 185-213.
- A15 11 Office of Women in Development, User's Guide 1991. (Updated annually). Washington, D.C.: U.S. Agency for International Development.
- A15 12 Women's Educational Equity Act Publishing Center. Newton, MA. U.S. Department of Education.
- A15 13 Open University (1986). Girls into mathematics. Center for Mathematics Education, Open University in association with Inner London Education Authority. Cambridge; London: Cambridge University Press.

### IMPROVING SUBJECT-MATTER LEARNING AND BASIC SKILLS LEARNING

- B00 01 ERIC Clearinghouse on Rural Education and Small Schools. Charleston, WV: Appalachia Education Laboratory.
- B00 02 HIID (1991). System to help access reports of effective education, SHARE. Cambridge, MA: Harvard Institute of International Development.
- B00 03 Washington, V. & Oyemade, V.J. (1987). Project Head Start: past, present, and future trends in the context of family needs. New York: Garland Pub.
- B00 04 UNESCO Computerized Documentation System (CDS) developed and distributed by UNESCO Paris, France.
- B00 05 UNESCO (1980). Regional seminar on national strategies for curriculum design and development, Canberra and Sydney, Australia 1979. Bangkok, Thailand: UNESCO Regional Office for Education. in Asia and Oceania.
- B00 06 Snyder, C.W. et al. (Eds.) (1990). Curriculum in the classroom: Context of change in Botswana's junior secondary school instructional programme. Gaborone, Botswana: Macmillan Botswana.
- B00 07 Choudhury, M.K. & Obaidullah, A.K.M. (1980). Outdoor primary education in Bangladesh. Paris, France: UNESCO.
- B00 08 Magendzo, Abraham (1986). Currbiculum y cultura en America Latina. Santiago, Chile: Programa Interdisciplinario de Investigaciones en Educacion.

- B00 09 Smith, Hilda & Nell-Williams, S. (1984). Selected exemplary projects in the humanities. Washington, D.C.: Council of Chief State School Officers.
- B00 10 Improved Efficiency of Educational Systems. The Florida State University; Howard University; Institute for International Research; State University of New York at Albany.
- B00 11 CEDAR (1987-). R & D Review. A preview of the best emerging educational R & D outcomes. Washington, D.C.: Council for Educational Development and Research.
- B00 12 Far West Laboratory for Educational Research and Development (1974-). Educational programs that work: A resource of exemplary programs approved by the joint dissemination panel. (9th Edition). San Francisco: Far West Laboratory.
- B00 13 UNESCO. Experiments and innovations in education. Paris, France: UNESCO.
- B00 14 Kotite, Phyllis (1989). Women's education looks forward: programs, experiences, strategies. Paris, France: UNESCO.
- B00 15 Clearinghouse on Urban and Minority Education. New York: Teachers College, Columbia University.
- B00 16 Current Index to Journals in Education (CIEJE). Published by ERIC Clearinghouse.
- B00 17 Resources in Education (RIE). Published by ERIC Clearinghouse.
- B00 18 African studies in curriculum development and evaluation. Nairobi, Kenya: ACO Project.
- B00 19 Schorn, Frank & Blair, Arthur (Eds.) (1982). Perspectives on curriculum and instruction: Teaching in Lesotho. Paris: UNESCO.
- B00 20 Kelly, Gail P. (Ed.) (1989). International handbook on women's education. New York: Greenwood Press.
- B00 21 Lewy, Arie (Ed.) (1991). The international encyclopedia of curriculum. Oxford, U.K. : Pergamon Press.
- B00 22 Burbon, Terri (Ed.) (1991). Catalog of ERIC Clearinghouse publications. Rockville, MD: ACCESS ERIC. ERIC Document No. ED 328 260.

- B00 23      UNESCO (1990). *Nonformal and alternative approaches to provide primary level education for out-of-school children*. Paris, France: UNESCO.
- B00 24      Education Development Center. Newton, MA.
- B00 25      ERIC Clearinghouse publications: An annotated bibliography of information analysis products and other major publications of the ERIC Clearinghouses, (1970-1990). Rockville, MD: ERIC Processing and Reference Facility.
- B00 26      Viens, D., Schweitzer, J.F. & Abadzi, H. (1989). *Morocco - staff appraisal report: Rural primary school project*. Washington, D.C.: The World Bank. (Report # 7434-MOR, Restricted).
- B00 27      Office of Education Research and Improvement (OERI). U.S. Department of Education. (Quarterly publication containing New information, publications, data sets and important research).
- B00 28      UNESCO (1979). *Universalizing education: Linking formal and non-formal programmes*. Technical Working Group Meeting. Bangkok, 2-14 October 1978. Bangkok: UNESCO Regional Office for Education in Asia and the Oceania.

**IMPROVING SUBJECT-MATTER LEARNING AND BASIC SKILLS LEARNING: LANGUAGE ARTS (INCLUDING READING, COMPOSING, SPEAKING, LITERATURE**

- B01 01      Clearinghouse on reading and communication skills. Bloomington, IN: Indiana University, Smith Research Center.
- B01 02      Dutcher, N. (1982). *Use of first and second languages in primary education: Selected case studies*. (Staff Working Paper No. 504). Washington, D.C.: The World Bank.
- B01 03      Literacy curriculum materials development: Portfolio of literacy materials (Series). Bangkok: UNESCO Regional Office for Education in Asia and the Pacific.
- B01 04      Manitoba kindergarten assessment: *English language, French immersion and heritage language programs, 1985 General Report*. Winnipeg, Canada: Manitoba Department of Education Winnipeg, Curriculum Development Branch.
- B01 05      Reading Recovery Projects. New Zealand, Australia, and United States.

- B01 06 Topping, Keith (Ed.) (1986). National paired reading conference proceedings, Dewsbury, West Yorkshire, England, November 3, 1984.
- B01 07 Heyneman, S. (1980). Instruction in mother tongue: The question of logistics. Canadian and International Education, 1, 88-94.
- B01 08 Gagné, Gilles et al. (1984). Etudes en pédagogie de la langue maternelle. (Selected papers in mother tongue education). Dordrecht: Fois; Montréal: Université de Montréal, Faculté des Sciences de l'éducation.
- B01 09 Strategic Reading Project. Palatine, IL: Skylight Publishing Inc.
- B01 10 Wagner, D. (Ed.) (1987). The future of literacy in a changing world. Comparative and International Education Series, Vol 1. Oxford; New York: Pergamon Press.

**IMPROVING SUBJECT-MATTER LEARNING AND BASIC SKILLS LEARNING: MATHEMATICS**

- B02 01 Wirszup, Izaak & Streit, Robert (1985). Developments in school mathematics education around the world: Applications-orientated curricula and technology -supported learning for all students. Proceedings of the UCSMP International Conference on Mathematics Education, University of Chicago, 28-30 March 1985.
- B02 02 Mathematics Center (1987). Better mathematics: A curriculum development study based on the Low Attainers Institute in Mathematics Project. London: H.M.S.O.
- B02 03 Clearinghouse on Science, Mathematics and the Environmental Education. Columbus, OH: Ohio State University.
- B02 04 Davis, Robert B. et al. (1970). An analysis of mathematics in USSR. Columbus, OH; Ohio State University, Clearinghouse on Science, Mathematics and Environmental Education. ERIC Document ED 182-141.
- B02 05 Cundy, H. Martyn (1977). The Caribbean mathematics project: Training the teachers as the agent of reform. Paris: UNESCO.
- B02 06 Urban mathematics collaborative (UMC). Ford Foundation.

**IMPROVING SUBJECT-MATTER LEARNING AND BASIC SKILLS LEARNING:  
VOCATIONAL AND TECHNICAL EDUCATION**

- B03 01 Haddad, W. & Conly, S. (1987). Diversified secondary curriculum projects: A review of World Bank experiences, 1963-1979. (Discussion Paper EDT 57). Washington, D.C.: Education and Training Department, The World Bank.
- B03 02 CACVE (1988). Trends & issues in vocational education. Columbus, OH: Ohio State University, Clearinghouse on Adult, Career, and Vocational Education. Information Analysis Paper, No. 334.
- B03 03 Clearinghouse on Adult, Career & Vocational Education. Columbus, OH: Ohio State University
- B03 04 Schwartz, Antonine (1986). The dual vocational training system of the Federal Republic of Germany. (Discussion Paper No. EDT 36). Washington, D.C.: The World Bank.
- B03 05 Finch, Curtis R. (1984). Curriculum development in vocational and technical education: Planning, content, and implementation. Boston, MA: Allyn and Bacon.
- B03 06 Lawson, Robert F. (1987). Changing patterns of secondary education: International comparison. Calgary, Canada: University of Calgary Press.
- B03 07 Loose, Gert et al. (1988). Vocational education in transition: A seven-country study of curricula for lifelong vocational learning. Hamburg, Germany: UNESCO Institute for Education.
- B03 08 Lauglo, J. and Lillis, K. (Eds.) (1988). Vocationalizing education: An international perspective. Comparative and International Education Series, Vol. 6. Oxford; New York: Pergamon Press.
- B03 09 Lyton, David (Ed.) (1986-). Innovations in Science and Technology Education. Paris: UNESCO.
- B03 10 CSME (1987). Technology education: Industrial arts in transition. A review and synthesis of the research. (4th Edition). Columbus, OH: Ohio State University, Clearinghouse on Science, Mathematics and Environmental Education. Information Analysis Paper, IN 325.
- B03 11 Kwami, F.O.(1980). Case studies on engineering and technician schools in developing countries having programs related to local development.

Kumasi, Ghana: University of Science and Technology, the Faculty of Engineering.

- B03 12 UNESCO (1989). Innovative methods in technological education. Paris, France: UNESCO.
- B03 13 Kosonike, Thomas (1980). Innovative programs in African institutions involved in technological education and training and research programs. Bulletin of the Regional Office for Science and Technology for Africa. 15(3).
- B03 14 UNESCO (1983-1984). Technical and vocational education, country studies.

#### IMPROVING SUBJECT-MATTER LEARNING AND BASIC SKILLS LEARNING: HEALTH

- B04 01 UNESCO (1980). Towards better health and nutrition. Report of a technical working group meeting on curriculum development in health and nutrition education, New Delhi, India, 15-24 September 1980. Bangkok: UNESCO Regional Office for Education in Asia and the Pacific.
- B04 02 Hawes, H., Page, G., & Somerset, T. (1988). Child -to-Child: another path to learning. Hamburg, Germany: UNESCO Institute for Education.
- B04 03 Griffin, Gary A. & Light, Louise (1975). Nutrition education curricula: Relevance, design and the problem of change. Paris: UNESCO.
- B04 04 UNESCO (1983). Health and nutrition education: A report of a regional writing workshop, Philippines, 12-27 May 1983. Bangkok: UNESCO Regional Office for Education in Asia and the Pacific.

#### IMPROVING SUBJECT-MATTER LEARNING AND BASIC SKILLS LEARNING: SCIENCE

- B05 01 Bredderman, T. (1983). Effects of activity-based elementary science on student outcomes. A quantitative synthesis. Review of Educational Research, 53(4), 499-518.
- B05 02 Walberg, H. J. (1991). Improving school science in advanced developing countries. Review of Educational Research, 61(1), 25-69.
- B05 03 National Center for Improving Science Education ed.(Undated).
- B05 04 ICSMCD (1967-1977). Annual reports on science and mathematics curriculum development. College Park, MD.: University of Maryland,

International Clearinghouse on Science and Mathematics Curricular Developments. Reports 1-10.

- B05 05 Haddad, Wadi, Za'rour, George (1986). Role and education effects of practical activities in science education. (Discussion Paper No. EDT51). Washington, D.C.: The World Bank.
- B05 06 OERI (1987). Science education programs that work. A collection of proven exemplary educational programs and practices in the National Diffusion Network. Washington, D.C.: Office of Educational Research and Improvement, National Diffusion Network. ERIC Document ED 283 673.
- B05 07 Whyte, Judith (1986). Girls into science and technology: The story of a project. London, U.K.: Routledge & Kegan Paul Publishing.
- B05 08 UNESCO (1979). Linking science education to real life. A report of a sub-regional workshop on designing and developing innovative science curriculum and instructional materials, Colombia, Sri Lanka, 10-22 December 1979. Bangkok: UNESCO Regional Office for Education in Asia and Oceania.
- B05 09 UNESCO (1982). Towards a better science education. Report of a study group meeting on science curriculum and instructional materials development, Bangkok, 10 -18 November 1981. Bangkok: UNESCO Regional Office for Education in Asia and the Pacific.
- B05 10 Dorling, Geoffry (1980). Nuffield coordinated sciences -- aims and history. Physics Education, 23(4), 207-211.
- B05 11 Maybury, Robert H. (1975). A critical and comparative appraisal of five projects for science education improvement supported by the Ford Foundation. New York: Science Education.
- B05 12 UNESCO (1980). Linking science education to the rural environment: some experiences Report of a Mobile Field Operation Seminar, Philippines and India, 13 -Aug-2 Sept 1979. Bangkok: UNESCO Regional Office for Education in Asia and Oceania.
- B05 13 Morris, Robert (Ed.) (1990). Science education worldwide. Paris, France: UNESCO.
- B05 14 UNESCO (1982). Chemistry curriculum and teaching materials. A report of a regional design workshop, Jeonjo, Republic of Korea, 21-28 October 1992. Bangkok: UNESCO Regional Office for Education in Asia and the Pacific.

- B05 15 UNESCO (1982). Out of school science education in Asia and the Pacific. Bangkok: UNESCO Regional Office for Education in Asia and the Pacific.
- B05 16 Watson, Keith (1990). Influences and constraints on curriculum development in the Third World (with reference to the Integrated Science Programme in Peninsular Malaysia). Canadian and International Education, 9(2), 28-42.

**IMPROVING SUBJECT-MATTER LEARNING AND BASIC SKILLS LEARNING: SOCIAL STUDIES (INCLUDING HISTORY, GEOGRAPHY, CIVICS, CULTURAL HERITAGE)**

- B06 01 Parker, Walker (1991). Reviewing the social studies curriculum. Alexandria, VA: Association for Supervision and Curriculum Development.
- B06 02 Morrissett, Irving (Ed.) (1981). Social studies in the 1980s. Alexandria, VA: Association for Supervision and Curriculum Development.
- B06 03 African Social Studies Programme, Nairobi, Kenya.
- B06 04 Clearinghouse on Social Studies/Science Education. Bloomington, IN: Indiana University.
- B06 05 Gross, Richard E. & Duffy, David (Ed.) (1980). Learning to live in society: Toward a world view of the social studies. Bloomington, IN: Indiana University, Clearinghouse on Social Studies/Science Education. ERIC Document No. ED 183-430.
- B06 06 Massialas, B. G. & Hurst, J. (1978). Social studies in a new era: The elementary school as a laboratory. New York: Longman.

**IMPROVING CLASSROOM INSTRUCTION AND MANAGEMENT**

- C00 01 Herz, B., Subbaroo, K., Habib, M., & Raney, L. (1991). Letting girls learn: Promising approaches in primary and secondary education. (The World Bank Discussion Paper No. 133). Washington, D.C.: International Bank for Reconstruction and Development, The World Bank.

**IMPROVING CLASSROOM INSTRUCTION AND MANAGEMENT: GROUPING STUDENTS IN THE CLASSROOM FOR LEARNING ACTIVITIES (EXAMPLES: COOPERATIVE LEARNING, PEER TUTORING, TEAMS)**

- C01 01 Hoffman, Linda R. (1981). Multiage grouping and team-teaching: Implications for adaptive instruction. Doctoral Dissertation, University of Pittsburgh.

- C01 02 Artz, Alice F. (1990). How to use cooperative learning in the mathematics class. Reston, VA: National Council of Teachers of Mathematics.
- C01 03 Hassard, Jack (1990). Science experiences: Cooperative learning and the teaching of science. Menlo Park, CA: Addison Wesley Pub.
- C01 04 UNESCO (1989). Multigrade teaching in single teacher primary schools. Bangkok: UNESCO Regional Office for Asia and the Pacific.
- C01 05 Slavin, Robert E. (1991). Student team learning: A practical guide to cooperative learning. (3rd edition). Washington, D.C.: NEA Professional Library, National Education Association.
- C01 06 Adams, Dennis M. & Hamm, Mary (1990). Cooperative learning: critical thinking and collaboration across the curriculum. Springfield, Ill: C.C. Thomas.
- C01 07 Rottier, Jerry & Ogan, Beverly J. (1991). Cooperative learning in middle-level schools. Washington, D.C.: NEA Professional Library, National Education Association.

**IMPROVING CLASSROOM INSTRUCTION AND MANAGEMENT:  
CLASSROOM MANAGEMENT AND INSTRUCTIONAL METHODS AND  
TECHNIQUES**

- C02 01 Valerien, Jean (191). Innovations for large classrooms: A guide for teachers and administrators. Paris, France: UNESCO.
- C02 02 Reinhartz, Judy (1988). Teach-practice-apply: The TPA instruction model, 7-12. Washington, D.C.: National Education Association.
- C02 03 UNESCO (1982). Multiple class teaching and education of disadvantaged groups: national studies: India, Sri Lanka, Philippines, Republic of Korea. Bangkok: UNESCO, Regional Office for Education in Asia and the Pacific.
- C02 04 UNESCO (1988). Sharing innovative strategies for self-learning materials: A monograph. Bangkok, UNESCO: Principal Regional Office for Asia and the Pacific.
- C02 05 UNESCO (1989). Science, technology and outreach courses by distance education: A workshop report. Bangkok: UNESCO: Principal Office for Asia and the Pacific.

- C02 06 Perraton (Ed.) (1986). Distance education: An economic and educational assessment of its potential for Africa. (Discussion Paper EDT 43). Washington, D.C.: The World Bank, Education and Training Department.
- C02 07 UNESCO (1988). Multiple class teaching in primary schools. Bangkok: UNESCO Regional Office for Asia and the Pacific.
- C02 08 McDowell, Hyacinth E. (1990) Defensive teaching: A strategy to facilitate the each-one-teach project. In The major project of education in Latin America and the Caribbean. (Bulletin 23). Santiago, Chile: UNESCO Regional Office for Education in Latin America and the Caribbean.

**IMPROVING CLASSROOM INSTRUCTION AND MANAGEMENT:  
UTILIZATION OF INSTRUCTIONAL TECHNOLOGY (EXAMPLES: FILMS,  
RADIO, MICROCOMPUTERS**

- C03 01 Thiagarajan, S. (1988). Literature review on soft technologies of learning. (BRIDGES Research Report Series, No 2). Cambridge, MA: Project BRIDGES, Harvard Graduate School of Education.
- C03 02 Anzalone, Stephen (1988). Using instructional hardware for primary education in developing countries: A review of the literature. Education Development Discussion Paper. Cambridge, MA: Project BRIDGES, Harvard Graduate School of Education.
- C03 03 Antonovskii M.Ya. et al (1990). Kompleksy uncebnoy oborudovaniya po matematike. Sets of mathematics teaching aids. Translated by Joan Teller. (Soviet Studies in mathematics education, V. XIX). Reston, VA: National Council of Teachers of Mathematics.
- C03 04 Wilbert, Gerd (1987). Topographie audiovisueller Materialien (AVM) an wissenschaftlichen Einrichtungen der Bundesrepublik Deutschland. Munchen; New York: Saur.
- C03 05 Graves, Norman (Ed.) (1982). New Unesco source book for geography teaching. Harlow, Essex: Longman; Paris, France Unesco Press.
- C03 06 Tiene, Drew & Futagami, Shigenari (1987). Educational media in retrospect. (Discussion Paper No. EDT58). Washington, D.C.: The World Bank, Education and Training Department.
- C03 07 Hawkrige, David G. (1991). Computers in Third-World schools: Examples, experiences and issues. New York: St. Martin's Press.

- C03 20 Froschl, Merle & Sprung, Barbara (Eds.) (1988). Resources for educational equity: A guide book for grades pre-kindergarten - 12. New York: Garland.

IMPROVING CLASSROOM INSTRUCTION AND MANAGEMENT: STUDENT ASSESSMENT

- C04 01 Hunt, Barbara (Ed.) (1980). Sex bias in testing: An annotated bibliography. ERIC Documents ED 194 634.
- C04 02 Smith, Jeffrey (1979). Role of measurement in the process of instruction. Washington, D.C.: American Institute for Research, Clearinghouse on Tests, Measurements and Evaluation. ERIC Document No. ED189 164.
- C04 03 Clearinghouse on Tests, Measurement and Evaluation. Washington, D.C.: American Institute for Research, Washington Center.
- C04 04 Somerset, H.C.A. (1987). Examination reform in Kenya. (Discussion Paper No. EDT64). Washington, D.C.: The World Bank.
- C04 05 Smith, Jeffrey K. (1977). Perspectives on mastery learning and mastery testing. Princeton, NJ: Clearinghouse on Tests, Measurement, and Evaluation.
- C04 06 Robinson, E.W. & Glowinski, D.J. (1986). Computer assisted diagnostic perspective program in reading and mathematics. An exemplary micro-computer and developer/administrator project. Washington, D.C.: United States Department of Education.

IMPROVING CLASSROOM INSTRUCTION AND MANAGEMENT: SCHOOL ORGANIZATION

- C05 01 Walberg, Herbert J. & Lane, John J. (Eds.) (1989). Organizing for Learning: Toward the 21st Century. Reston, Va: National Association for Secondary School Principals.

APPENDIX 1

DOC NAME: Productive teaching and instruction

**BIBLIOGRAPHIC REFERENCE:**

Walberg, Herbert J. (1990). Productive teaching and instruction: Assessing the knowledge base. In H. Waxman & H. Walberg (Eds.) Effective teaching: Current research. Berkeley, CA: McCutchan Publishing Corporation.

**ABSTRACT**

In 1987, an Australian-United States team assessed 134 reviews of 7,827 field studies and several large-scale United States and international surveys of learning. This chapter provides a compact summary of the findings of approximately 8,000 studies on elementary and secondary school students, and it also assesses still more recent and definitive reviews of research on teaching and instruction.

The author begins with the effects of the psychological elements of teaching and then discusses methods and patterns of teaching -- all of which can be accomplished by a single teacher without any unusual arrangements or equipment. Then he turns to effects of systems of instruction that require special planning, student grouping, and materials. Next described are effects that are unique to reading, writing, science, and mathematics. The remaining results concern special students and techniques, and the effects of training on teachers.

The tables in this chapter summarize the results for each of fifteen categories of effects. Each table shows the number of studies reviewed and the size of the effect (expressed as the difference between experimental and control groups in units of standard deviation), and also gives a graphic representation of the size of the effect.

The compilation of the effects allows us to compare educational methods with one another -- including some effective ones that are no longer popular. We can see that some techniques have enormous effects, while others confer only trivial advantages, or may even harm learning. In planning and evaluating programs, we generally examine the findings in the light of personal experience. In practice, however, we might attain results half or twice as good as the average estimates reported here.

LOCATION: SC

HOW TO ACCESS SOURCE:

DATE CREATED: 31 December, 1991

INITIALS: SFC

DATE UPDATED:

INITIALS:

DOC NAME: SHARE-Software (Database)

**BIBLIOGRAPHIC REFERENCE:** Harvard Institute of International Development. (1991). System to help access reports of effective education, SHARE. Cambridge, MA: HIID.

#### ABSTRACT

Within the SHARE database are summaries of hundreds of educational projects/programs that have been attempted or are ongoing around the world. Each SHARE abstract starts with a description of the principal educational ideas in the educational initiative, and then turns to some comments on their impact. Most abstracts provide enough information so that the user can immediately understand what was attempted.

For each abstract SHARE provides a bibliographic reference and an indication of how the original document might be obtained. The current database draws on reports published in major journals, the files of leading international donors, and projects developed by various governmental and non-governmental organizations in various parts of the world.

SHARE deals with 5 major educational goal areas:

1. Access and equity
2. Quality
3. Internal efficiency
4. External efficiency
5. Values and education

Each of these goal areas is viewed within a policy framework that includes 8 policy options:

1. Pupils, families, and communities
2. Facilities and equipment
3. Teachers
4. Curriculum
5. Instructional methods
6. Instructional technology
7. Managements and supervision
8. Finance

[continued]

LOCATION: SC

HOW TO ACCESS SOURCE: IBM Computer, G drive, TIEQP.DIR

DATE CREATED: 22 December 1991

INITIALS: SFC

DATE UPDATED:

INITIALS:

DOC NAME: Science education programs that work

**BIBLIOGRAPHIC REFERENCE:**

OERI (1987). Science education programs that work. A collection of proven exemplary educational programs and practices in the National Diffusion Network. Washington, D.C.: Office of Educational Research and Improvement, National Diffusion Network. ERIC Document ED 283 673.

**ABSTRACT**

The National Diffusion Network (NDN) is a federally funded system that makes exemplary educational programs available for use by schools, colleges, and other institutions. This publication contains information describing the science education programs currently in the NDN, along with procedural information on how to access these programs. The current NDN science education programs described in this document are:

1. Conservation for children
2. Foundational approaches in science teaching (FAST)
3. Geology is
4. Hands-on elementary science
5. Informal science study
6. Life lab science program
7. Marine science project: For SEA
8. Physics -- teach to learn program
9. Sci-math
10. Starwalk
11. Stones and bones, a laboratory approach to the study of biology, modern science, and anthropology
12. Zoo: Zoo opportunities outreach

Each program description is accompanied by a listing of the intended audience and services available from the program's contact person. Included is a list of the state NDN facilitators.

LOCATION: LHIL

HOW TO ACCESS SOURCE:

DATE CREATED: 13 January 1992

INITIALS: SFC

DATE UPDATED:

INITIALS:

DOC NAME: Clearinghouse: Rural & Small Schools (Series)

**BIBLIOGRAPHIC REFERENCE:**

ERIC Clearinghouse on rural education and small schools.  
Appalachia educational laboratory. Charleston, WV.

**ABSTRACT**

Scope of Collection

1. American Indians
2. Mexican American education
3. Migrant education
4. Outdoor education
5. Rural education
6. Small schools

Services Offered

1. Free public digests
2. Documents for sale -- research reports, literature reviews,  
program descriptions, opinion or position papers,  
guidebooks or curriculum materials
3. Free custom searches
  - a. by mail request
  - b. by phone request 1-800-624-9120 or 1-800-344-6646

LOCATION: SC

HOW TO ACCESS SOURCE:

DATE CREATED: 16 December 1991

INITIALS: SFC

DATE UPDATED:

INITIALS:

DOC NAME: Clearinghouse: Rural & Small Schools (Series)

**BIBLIOGRAPHIC REFERENCE:**

ERIC Clearinghouse on rural education and small schools.  
Appalachia educational laboratory. Charleston, WV.

**ABSTRACT**

Scope of Collection

1. American Indians
2. Mexican American education
3. Migrant education
4. Outdoor education
5. Rural education
6. Small schools

Services Offered

1. Free public digests
2. Documents for sale -- research reports, literature reviews, program descriptions, opinion or position papers, guidebooks or curriculum materials
3. Free custom searches
  - a. by mail request
  - b. by phone request 1-800-624-9120 or 1-800-344-6646

LOCATION: SC

HOW TO ACCESS SOURCE:

DATE CREATED: 16 December 1991

INITIALS: SFC

DATE UPDATED:

INITIALS:

DOC NAME: School math education around the world

**BIBLIOGRAPHIC REFERENCE:**

Wirszup, Izaak & Streit, Robert (1985). Developments in school mathematics education around the world: Applications-orientated curricula and technology-supported learning for all students. Proceedings of the UCSMP International Conference on Mathematics Education, University of Chicago, 28-30 March 1985.

**ABSTRACT**

**Part 1: School Mathematics Education Worldwide**

1. The second international mathematics study: An international perspective.
2. The second international mathematics study: A look at U.S. classrooms
3. On the mathematical curriculum for grades K-3 in Poland
4. The Bulgarian Academy of Science Research Group on Education Project
5. Computers in elementary schools: Some experiments
6. The introduction of computers in elementary and secondary school in France: Their effect on mathematics teaching
7. Mathematics in Swedish schools
8. An example of a long-life curriculum project and its underlying philosophy
9. Mathematics in junior and senior high school in Japan: Present state and prospects
10. The present state and current problems of mathematics education at the senior secondary level in Japan
11. SMP 11-16: The most recent work in curriculum development by the school mathematics project, and its relation to current issues in mathematical education in England
12. Post-"New Math" since 1963: Its implementation as a historical process
13. Action and language -- two modes of representing mathematical concepts.

[continued]

LOCATION: LHIL

HOW TO ACCESS SOURCE:

DATE CREATED: 22 December 1991

DATE UPDATED:

INITIALS: SFC

INITIALS: