

Using Technology to Manage Education Information

The U.S.- based Educational Resources Information Center (ERIC) is the largest, most diverse and most used educational database in the world, containing over one million records covering all fields and levels of education. Millions benefit from the user-oriented web-based services it provides. The Red Latinoamericana de Información y Documentación en Educación (REDUC), inspired by ERIC, is a cooperative regional association of persons and institutions that has been compiling, processing and disseminating information on education since 1972. With its network of 22 associated centers in 18 countries throughout the region, it is the most extensive education documentation center in Latin America.

Educational Resources Information Center (ERIC)

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ERIC was established in 1965 as the national education information system by the U.S. Department of Education to provide quick, assured access to the U.S. educational research literature. At the time, ERIC was based on the latest information technology—big, slow mainframe computers and microfiche reproduction of reports. Since then, ERIC has evolved into not only the largest, most diverse, and most used educational database in the world, but also as a leader in applying information technology.

Approach

From an initial database of only a few thousand records, ERIC now includes over one million records, covering all fields, disciplines, varieties, and levels of education. Over 32,000 new records were added to the database in 1999. But more important for the millions of ERIC users each year, ERIC has evolved from a conventional database into an impressive array of user-oriented, web-based services. In addition to the growing power and reduced cost of Internet services, this evolution was abetted by two decisions made in the design of ERIC in 1965. The first and most important decision was to develop a decentralized system, based on the operation of semi-autonomous clearinghouses, independent of but funded by the Department of Education. The second was to rely on private contractors and independent firms to provide online services, CD-ROM distribution, micrographic reproduction of reports, printing, and other outreach services for users. As a result, ERIC is widely and easily accessible through a variety of sources to millions of users throughout the world. For example, users can find information from:

- ? Four free web sites, two of which are operated by ERIC clearinghouses, each of which had over 500,000 viewers in 1999;
- ? Four commercial on-line vendors;
- ? Many locally maintained on-line services;
- ? Four CD-ROM vendors;
- ? Over 1,000 local microfiche collections of ERIC reports maintained by libraries in 26 countries; and
- ? 350 libraries serving over 3 million users in 12 countries where users can search and download the full texts of most ERIC reports since 1993.

Innovations

The decentralized design, while intended to make subject specialists outside the U.S. government responsible for selecting and processing information announced through ERIC, also provided the basis for rapid, innova-

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tion development of web-based services and free access to the ERIC database over the Internet. These innovations include:

- ? Web sites of the clearinghouses, with content covering the scope of the clearinghouse.
- ? Specialized web sites at clearinghouses for serving specific clientele (The clearinghouse on Elementary and Early Childhood Education, for example, maintains 14 specialized sites, ranging from ones for parents, early childhood researchers, reading specialists, researchers and program developers concerned with promoting resilience in children and youth, specialists in childhood disabilities, and others. Go to <http://ericeece.org/>).
- ? Special collections of educational materials, including 8,000 lesson plans, curricular and other educational materials from 200 collections available on the Internet (available at <http://www.thegateway.org>);
- ? The Test Locator, a special collection of over 11,000 assessment instruments (available at <http://ericae.net/testcol.htm>).
- ? Announcement of new acquisitions on clearinghouse web sites months before the records are added to the ERIC database.
- ? Peer-reviewed electronic journals, such as *Practical Assessment, Research and Evaluation*, published by the Clearinghouse on Assessment and Evaluation, University of Maryland (<http://ericae.net/pare/>) and *Early Childhood Research and Practice*, from the Clearinghouse on Elementary and Early Childhood (<http://ecrp.uiuc.edu>).
- ? Full text of ERIC publications on line, such as the ERIC Digests, consisting of short summaries and analyses of research on selected topics, or the Practitioner File, maintained by the clearinghouse on Adult, Career and Vocational Education at Ohio State University (<http://www.ericacve.org>).
- ? 65 listservs with over 34,000 subscribers.
- ? Virtual Libraries of full texts of selected documents, now a feature of many clearinghouses.
- ? On-line responses to queries through ASK ERIC, at askeric@askeric.org or through <http://www.askeric.org>, with answers supplied by return email in two business days, maintained by the Clearinghouse on Information and Technology, University of Syracuse.

Reinvention Initiative

These developments, which represent only a selection of the many web-based services of the ERIC clearinghouses, valuable as they are, represent ad hoc responses to the challenges posed by the shift from print dissemination to online publishing through web sites and electronic journals. The main ERIC operations, however, continue to revolve around the acquisition and processing of documents and journal articles. This will certainly change. Recognizing the seismic changes in the generation of educational information, ERIC managers in the U.S. Department of Education have commissioned reviews of various aspects of the ERIC system and operations as part of a “reinvention initiative.” This initiative will, no doubt, result in conversion of ERIC to a full web-based operation, possibly based on different models and users of the Internet.

One model, by the Clearinghouse on Education Management, University of Oregon, with ASSIST INTERNATIONAL INC., a nonprofit organization, is an extension of current subject- or client-specific services cited previously, but with a global outreach. This plan is based on the development of a web site for a Global Information Network on School Reform Policy that will, with the help of partners throughout the world, provide access to global information on school reform policies and related research. All information will be selected to meet the needs of one specific clientele—the critical policymakers at the state (or provincial) and national levels of government who make the final decisions about school or educational reforms. A key feature of this plan will be to select policy information available on web sites, provide summaries of these policies and related research on a web site at the University of Oregon, and provide links from these summaries back to the full texts of the policies or research reports on the partners’ web sites. Summaries will be in at least several languages, while the full documents will be in the language used on the partners’ web sites. Thus, by linking web sites containing school reform policy information through a central web site, educational policymakers and other viewers will have full access to needed information from their desktops. And they may

find information of use in their native language instead of being limited to whatever is available in English. This approach might work well for other client- or subject-based services within a country or at the global level.

Sources

Information about ERIC cited above came from the “ERIC Annual Report 2000,” available at <http://www.accesseric.org/resources/annual/index.html>. The <http://www.accesseric.org> site also is the portal to the entire ERIC system and provides descriptive information and links to, among other things, the 16 ERIC clearinghouses and other components of the system and access to the database, through four search engines, and other information and resources related to the system.

The Latin Network of Information and Documentation in Education (REDUC)

Sergio Martinic and Laurence Wolff²

Inspired by the establishment of ERIC, the Latin Network of Information and Documentation in Education (in Spanish, Red Latinoamericana de Información y Documentación en Educación—REDUC), is a cooperative regional association of persons and institutions that compiles, processes, and disseminates information on education. REDUC has operated since 1972 through a network of 22 associated centers—universities, ministries of education, and research centers, both public and private—in 18 countries of the region. It is the most extensive and complete education documentation center in Latin America. REDUC is managed by the Center for Research in Development and Education (CIDE) located in Santiago, Chile. Its web site can be accessed at <http://www.reduc.cl>. REDUC is funded by the participating centers and countries as well as a grant from the Inter-American Development Bank.

Scope

Over time REDUC has moved much of its services to the Internet. It now has available 16,000 “Analytical Summaries in Education” on line, providing concise summaries of documents, including how to order copies. Every year, an additional 2,000 citations are added to the database. As of this year, there have been 45,000 hits on its web site. REDUC has now selected 300 of the most important studies and made available the complete text, accessible through the Internet or on CD-ROM. A virtual journal (Revista Umbral) is published three times a year. REDUC has organized 14 workshops on Internet navigation, which have reached 645 researchers and decision-makers in the region. REDUC has also supported partially presencial master’s degree programs in educational policy in coordination with the University of Panama and the University Alberto Hurtado in Santiago. Some of the material for the course can be viewed in the journal at <http://www.reduc.cl/reduc/umbral4.htm>.

New Approach

REDUC’s managers are changing their view of information and its utilization in education. The new view begins with the critical problems of education reform in the region: deficiencies in coverage and in the quality of learning; political and policy problems in the design and execution of reforms; inadequate commitment to change on the part of critical actors (supervisors, school principals, teachers); and inadequate production of knowledge to feed the design and evaluation of reforms. The problem is not one of information but rather access to and use of information without physical, social or cognitive barriers. Furthermore, information is not the same as knowledge, which is produced in the context of reflection on action. On this basis, an “unmedi-

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ated” database may serve researchers but may not reach critical decision-makers nor have an impact on educational reform.

REDUC is therefore seeking to become a “resource center for actors in educational systems,” linking a wide variety of decision-makers and stakeholders. In this new vision, REDUC seeks to:

- ? strengthen the processes of reforms in progress;
- ? improve the articulation and commitment of actors;
- ? increase the circulation of specialized knowledge;
- ? connect best practices and innovations with designers;
- ? train professionals in education policy; and
- ? incorporate new technologies into all of these processes.

To meet these challenges, REDUC has already undertaken the development of an electronic library composed of full texts supplementing the analytical summaries. It is planning a database of the results of empirical research, which would be available to researchers for manipulation and analysis. It is also planning to develop a structure of information and resources about qualitative research to strengthen the systematic use of qualitative methodologies. REDUC also hopes to establish information and discussion fora on the subjects of equity and education and of decentralization, including state of the art papers on these subjects and Internet discussion groups. It hopes to expand its distance courses and seminars on research and policy and its training programs for educational analysts and researchers, including a new program on educational management and decentralization to be undertaken in Córdoba, Argentina.