

Archived Information

Objective 4.3: An up-to-date knowledge base is available from education research to support education reform and equity.

National Need

National Concerns. It is critical that the Nation possess a healthy knowledge base to support systemic education reform and equity. Nearly all states and districts have drawn on research findings to help frame their school improvement efforts. The Nation's student population is growing more diverse. Parents and the public are expecting schools to help all students reach high standards. Consequently, high-quality research is needed to meet the demand for specific, evidence-based guidance and effective strategies to help improve student achievement and close the achievement gap.

Adequate capacity, a relevant research agenda, high-quality research, and useful findings and products are necessary for a sustained knowledge base. The Department of Education supports research primarily through the Office of Educational Research and Improvement (OERI). Key areas of education research include at-risk students, education governance and finance, assessment, early childhood development, postsecondary education, professional development and effective teaching, early reading, mathematics and science instruction, and comprehensive school reform.

Our Role. The Office of Educational Research and Improvement (OERI) provides national leadership in the cultivation and expansion of fundamental knowledge and understanding of education. Moreover, OERI aggressively promotes the use and application of such knowledge to improve practice in the classroom. OERI:

- Conducts basic and applied research on the teaching and learning process; the economic, social, and policy contexts of education; and other defined areas of high priority.
- Collects and analyzes statistical data on the present condition of education and project educational trends.
- Demonstrates, disseminates, and adapts new knowledge and practices to various educational settings.
- Supports learning opportunities through libraries, the information superhighway, and other technologies.
- Promotes coordination between the Department's education research and development programs and the related activities of other Federal agencies.
- Forges a national consensus with respect to a long-term agenda for education research, development, dissemination, and other activities; through collaborative efforts with the National Educational Research Policy and Priorities Board, and with external constituencies.

Our Performance

How We Measure. The two performance indicators for Objective 4.3 focus on the technical merit of OERI's education research findings and the usefulness and relevance of these results for policymakers and practitioners. These indicators were selected because it is crucial that the research projects funded by OERI meet the highest standards of evidence for judging research quality, and also because practitioners should be able to make use of the findings and products emanating from these efforts. We will assess progress toward our objective by annually convening a distinguished group of researchers, policymakers, and practitioners, who will review a representative sample of our research products, and use this information as a benchmark for annual product reviews in future years. In addition, publications emerging from OERI-supported research will be reviewed after being selected from a sample of leading,

refereed research journals and other highly regarded periodicals that employ rigorous peer review processes. Although we are providing some data pertaining to our performance indicators, we do not yet have the kind of data based on the more systematic procedures that we will be developing during FY 2000.

Indicator 4.3.a. Education research meets standards of fully acceptable scientific quality.

Assessment of progress. Positive trend toward target.

The comments in a recent GAO report attesting to ED's use of credible procedures and expert involvement reflect that our activities, with respect to the assessment of student achievement, are meeting acceptable standards of scientific quality. Extensive quality control procedures are already in place for the National Assessment of Educational Progress (NAEP). This program makes use of credible procedures and expert involvement.

Source: GAO Report GGD-99-139 Verification and Validation of Performance Data. *Frequency:* One time. *Next Update:* None. **Validation procedure:** Data supplied by GAO. **Limitations of data:** The judgments are based on only one of OERI's programs, albeit a major one.

Interim review reports of OERI's National Research and Development Centers praised the overall quality of the work at these centers. Peer review panelists lauded the high quality of the researchers at the various centers; the good balance at some centers between large, continuing studies and shorter, more reactive work; and the strong theoretical and methodological foundations of much of the research. The interim reviews of the centers were carried out in accordance with a set of formal review guidelines, which indicate that the purpose of these evaluations is to focus on the performance of the centers with respect to "the technical quality of its work and products." Therefore, the comments of the expert review panelists attesting to the high quality of the research conducted at the various centers reflect that the research activities at these centers are currently meeting acceptable standards of scientific quality.

Source: National Educational Research Policy & Priorities Board Report, September 1999. *Frequency:* One time. *Next Update:* None. **Validation procedure:** Data supplied by peer review panels of expert researchers, policymakers, and practitioners. **Limitations of data:** Although these data provide accurate formative evaluations of the work being conducted at the National research centers, summative judgments were not made.

Indicator 4.3.b. OERI-supported research and products are useful and relevant for education policymakers and practitioners.

Assessment of progress. Positive trend toward target.

National Center for Education Statistics (NCES)

NCES is providing useful and relevant data to Federal, state, and local policymakers, as well as to researchers, as evidenced by 1997 and 1999 customer surveys. In 1997, 86 percent of respondents judged NCES publications to be useful. In 1999, preliminary data show that 89 percent of respondents judged the publications useful.

Source: NCES Customer Satisfaction Survey, 1997 and 1999. *Frequency:* Biennial. *Next Update:* 2001. **Validation procedure:** Data are validated by using NCES review procedures and by applying NCES Statistical Standards. **Limitations of data:** This indicator relies on self-report data, which may not provide a completely accurate measure of the utility of the information provided.

Regional Education Laboratories

NCES regional laboratories are providing useful and relevant services to practitioners, as evidenced by 1997 and 1998 client surveys. These surveys showed that in 1997, 74 percent of clients said that laboratory products and services increased their knowledge and skills, and 63 percent said the products and services enhanced their professional practice. In 1998, those figures rose to 85 percent and 68 percent, respectively.

The laboratories are also helping practitioners implement comprehensive school reform by increasing their number of partnerships with schools. The number of development sites—schools where laboratory staff work closely with school teams to develop and test comprehensive school reform strategies—rose from 494 in 1997 to 615 in 1998. In addition, the number of "application sites"—schools where these strategies are further tested and refined—grew from 236 in 1997 to 328 in 1998. In surveys of participants, 88 percent rated the efforts as contributing to comprehensive school reform.

In 1998, the labs delivered more than 100 technical assistance workshops on the topic of school reform, with attendance reaching roughly 6,000 practitioners from more than 1,000 schools and districts.

Source: Regional Educational Laboratories Report, 1997 and 1998. *Frequency:* Annually. *Next Update:* 2000. **Validation procedure:** No external validation procedure has been applied. OERI will develop a process to validate the results of the procedures described below. **Limitations of data:** This indicator relies in part on self-report data, which may not provide a completely accurate measure of the utility of these products and services for practitioners.

AskERIC

Ninety-two percent of AskERIC users reported that the information they received was relevant to their question. (AskERIC is the electronic question-answering service managed by ERIC; the monthly average for questions posed to this service has increased from 612 in 1993 to 3,675 in 1998.) In addition, 93 percent of AskERIC users said they would recommend the service to someone else.

Source: ERIC customer survey, 1998. *Frequency:* One time. *Next Update:* None. **Validation procedure:** Data validated by ERIC's review procedures. **Limitations of data:** This indicator relies on self-report data, which may not provide a completely accurate measure of the utility of the information received.

ERIC Web site

ERIC was ranked as the fourth most popular site in a National survey of K-12 teachers (of core curriculum subjects) who were asked to list the three Websites they use most often as a teaching aid.

Source: Quality Education Data, Inc.'s Report on Internet Usage in Public Schools. *Frequency:* One time. *Next Update:* None. **Validation procedure:** Internal review procedures of an experienced data collection agency. **Limitations of data:** This indicator relies on self-report data, which may not provide a completely accurate measure of teacher practice.

How We Plan to Achieve Our Objective

How ED's Activities Support the Achievement of This Objective.

Current and continuing efforts to achieve our objective and ensure both the technical merit and usefulness of our funded research can be subsumed under three major strategies: building a substantive knowledge base of effective educational practices, developing a focused research agenda, and enhancing research quality by setting standards and strengthening peer review.

■ **Build a substantive knowledge base of effective education practices.**

- In FY 1999, the Office of Educational Research and Improvement (OERI), the National Science Foundation, and the National Institute of Child Health and Human Development (NICHD) held the first competition for the Interagency Education Research Initiative (IERI) to foster innovative research, including large-scale intervention studies, on school readiness; K-3 learning in reading, math, and science; and pre-kindergarten through 12th grade teacher education in reading, math, and science.

Building on this first competition, the three agencies will continue this year to refine and focus the IERI. Greater emphasis will be placed on the need for applicants to articulate how the results of the proposed research can contribute directly to our understanding of efficacious approaches for implementing scalable and sustainable interventions in diverse educational settings

- OERI and NICHD have developed a projected 5-year research initiative, Development of English Literacy in Spanish-Speaking Children (DELSS), to support research efforts that will enhance our understanding of the critical factors that influence the development of English-language literacy competencies among children whose first language is Spanish. One of the major goals of this initiative is to generate converging scientific evidence based on the use of sophisticated research methodologies that can ultimately inform the design of effective educational strategies and practices.

The Comprehensive School Reform Demonstration (CSRSD) Program has evolved tremendously through OERI-funded activities, with a complex interaction of demonstration projects, research and evaluation efforts, and dissemination. The agency held a competition in FY 1999, with the goal of funding the design of comprehensive school reform models that hold promise for increasing educational outcomes at the middle school and high school levels. Seven organizations were awarded contracts. These contracts require the organizations to create models that include strategies, procedures, materials, and teacher professional development for school-wide reform aimed especially at increasing academic achievement for adolescent students. In addition, OERI plans to create a complementary research and evaluation team to maximize the usefulness of findings emerging from these research efforts.

■ **Develop a focused research agenda.**

- OERI's advisory board, the National Educational Research Policy and Priorities Board, contracted with the National Academy of Education to develop a research agenda to help close the achievement gap. The resulting report, along with a related agenda emerging from the National Research Council (NRC), *Improving Student Learning: A Strategic Plan for Education Research and Its Utilization*, are being used to guide the development of the agency's national research agenda. Additional resources are being made available to the NRC to help OERI develop a 5-year plan for an expanded research program of large-scale, systematic experimentation and demonstration focused on strategic education issues within the context of comprehensive school reform.
- The RAND corporation has been funded by OERI to assist the agency in carrying out research, analysis, and planning activities that will support efforts to enhance the quality, focus, direction, and cumulativeness of its funded research programs. In an effort to achieve these objectives, OERI, with the assistance of RAND, is planning to convene pilot study panels that would guide the development of programmatic research efforts, initially in reading and mathematics learning.

- **Enhance research quality and relevance by setting standards and strengthening peer review.**
 - To promote effective targeting of efforts and to ensure customer satisfaction, new contracts require that each ERIC clearinghouse regularly obtain feedback regarding customer satisfaction with its products, services, and the contribution of its work to improving education.
 - To measure more systematically the extent to which the research supported by OERI meets high standards of technical merit, the agency will annually appoint a blue-ribbon review panel of nationally recognized researchers with expertise in education and related fields. This panel will evaluate the scientific and technical quality of a representative sample of the research products for a given year. Their evaluations will serve as a benchmark for subsequent product reviews in future years. In addition, a selected number of leading research journals that employ rigorous peer review processes will be sampled to assess the number and quality of publications emanating from OERI-supported research. This approach will ensure that the emphasis of the reviews will be placed on evaluating the quality of the work rather than the sheer quantity of products.
 - To measure the extent to which the research supported by OERI yields products that are useful and relevant for educators, the agency will annually appoint a blue-ribbon review panel of nationally recognized education policymakers and practitioners. This panel will evaluate the usefulness and relevance of products based on a representative sample of the research funded for a given year. Their evaluations will serve as a benchmark for subsequent product reviews in future years. Publications and other products originating from OERI-supported research will also be reviewed. To ensure that quality rather than simply quantity of this work is evaluated, the publications will be drawn from selected, prominent journals of policymaking and from highly regarded periodicals that publish articles for practitioners.
 - OERI held an interagency symposium in May 1999 concerning peer review processes and procedures. Staff from the National Institutes of Health (NIH), the National Science Foundation (NSF), the National Endowment for the Humanities (NEH), and the Office of Naval Research participated. The suggestions generated during this meeting, coupled with related recommendations from the National Educational Research Policy and Priorities Board, have formed the basis of a plan to develop standing peer review panels modeled after those used by other Federal agencies.

How We Coordinate with Other Federal Agencies

OERI has been coordinating its work with various other Federal agencies in several ways. First, in a continuing attempt to fund high-quality education research that possesses strong potential for application to complex and varied educational environments, OERI is partnering with both the National Science Foundation (NSF) and the National Institute of Child Health and Human Development (NICHD) in supporting the Interagency Education Research Initiative. Similarly, OERI and NICHD are jointly sponsoring the Development of English Literacy in Spanish-Speaking Children (DELSS) initiative. Both of these efforts should yield research findings that will contribute importantly to the extant knowledge base of effective education practices, thereby bringing us closer to achieving our objective.

The other major way in which we have been working with other Federal agencies is to draw on their expertise concerning effective peer review processes and procedures for evaluating the scientific and

technical merit of research grant applications. In this regard, we have worked closely with both the National Science Foundation (NSF) and the National Institutes of Health (NIH).

Challenges to Achieving Our Objective

While conducting education research and collecting data are part of an acknowledged Federal role, limited resources for research and development activities often restrict the capacity of the Federal government to sufficiently address the wide range of important education problems facing the Nation. Currently, less than 0.1 percent of the \$300 billion spent annually on public K-12 education supports education research. This is in sharp contrast to the 23 percent that the pharmaceutical industry, for example, spends on developing and testing prescription and nonprescription medications. It is far less than the Federal investment in health research, which is estimated to be 30 times larger than the investment in education research. Given the limited resources for education research, OERI must develop a more focused set of research priorities and strengthen its peer review system to fund studies of the highest quality that have the best potential for yielding products that will be useful to policymakers and practitioners.