Federal Register

Monday,
July 3, 2006

Part IV

Department of Education

Institute of Education Sciences—Notice Inviting Public Comments on Plan for Addressing Long-Term Research Priorities; Notice

DEPARTMENT OF EDUCATION

Institute of Education Sciences—Notice Inviting Public Comments on Plan for Addressing Long-Term Research Priorities

AGENCY: Institute of Education Sciences, Department of Education.

ACTION: Notice inviting public comments on plan for addressing Institute priorities.

SUMMARY: The Director of the Institute of Education Sciences (Institute) invites comments on the Institute's plan for addressing the long-term research priorities approved by the National Board for Education Sciences (Board).

DATES: We must receive your comments on or before September 1, 2006.

ADDRESSES: Address all comments about this plan to Elizabeth Payer, U.S. Department of Education, 555 New Jersey Avenue, NW., Room 602c, Capitol Place, Washington, DC 20208. If you prefer to send your comments through the Internet, use the following address: elizabeth.payer@ed.gov.

You must include the term ''Plan for Addressing Priorities'' in the subject line of your electronic message.

FOR FURTHER INFORMATION CONTACT: Elizabeth Payer. Telephone: (202) 219–1310.

If you use a telecommunications device for the deaf (TDD), you may call the Federal Relay Service (FRS) at 1–800–877–8339 between 8 a.m. and 4 p.m., eastern time, Monday through Friday.

Individuals with disabilities may obtain this document in an alternative format (e.g., Braille, large print, audiotape, or computer diskette) on request to the contact person listed under **FOR FURTHER INFORMATION CONTACT**.

Invitation to Comment

We invite you to submit comments regarding this plan. We urge you to identify clearly the specific area of the plan that each comment addresses and to arrange your comments in the same order as the plan.

During and after the comment period, you may inspect all public comments about this plan in room 602q, 555 New Jersey Avenue, NW., Capitol Place, Washington, DC, between the hours of 8:30 a.m. and 4 p.m., eastern time, Monday through Friday of each week except Federal holidays.

Assistance to Individuals With Disabilities in Reviewing the Record

On request, we will supply an appropriate aid, such as a reader or print magnifier, to an individual with a disability who needs assistance to review the comments or other documents in the public rulemaking record for this plan. If you want to schedule an appointment for this type of aid, please contact the person listed under **FOR FURTHER INFORMATION CONTACT**.

SUPPLEMENTARY INFORMATION:

Background

Section 115 of the Education Sciences Reform Act of 2002 (20 U.S.C. 9515) requires that the Director propose to the Board long-term research priorities for the Institute and that, upon the Board's approval of the priorities, the Director make the Institute's plan for addressing the priorities available for public comment.

On June 16, 2005, the Institute published a notice inviting comments on the priorities it planned to propose to the Board (70 FR 35072). During its meeting on September 6 through 7, 2005, the Board approved certain long-term research priorities for the Institute. (The Board-approved priorities can be found at the following Web site: *http://ies.ed.gov/director/board/priorities.asp*.) The plan attached to this notice describes the Institute's plan for addressing those priorities.

Through this notice, the Director seeks public comment before finalizing the Institute's plan for addressing the Board-approved priorities.

Electronic Access to This Document

You may review this document, as well as all other Department of Education documents published in the **Federal Register**, in text or Adobe Portable Document Format (PDF) on the Internet at the following site: *http://www.ed.gov/news/fedregister*.

To use PDF you must have Adobe Acrobat Reader, which is available free at this site. If you have questions about using PDF, call the U.S. Government Printing Office (GPO), toll free, at 1–888–293–6498; or in the Washington, DC, area at (202) 512–1530.

Note: The official version of this document is the document published in the **Federal Register**. Free Internet access to the official edition of the **Federal Register** and the Code of Federal Regulations is available on GPO Access at: *http://www.gpoaccess.gov/nara/index.html*.

Dated: June 27, 2006.

Grover J. Whitehurst,

Director of the Institute of Education Sciences.

BILLING CODE 4000–01–P

The Institute of Education Sciences' Plan for Addressing its Research Priorities

The Education Sciences Reform Act of 2002 requires that the Director of the Institute of Education Sciences (Institute) propose to the National Board for Education Sciences (Board) long-term research priorities for the Institute, and that upon approval of such priorities, the Director make the Institute's plan for addressing such priorities available for public comment. The Board has approved the Director's priorities. This document describes the Institute's plan for addressing those priorities.

Review of Priorities

The Institute's research priorities (http://ies.ed.gov/iespriorities.html) are driven by the goals of developing and identifying programs and practices that are effective in enhancing academic achievement, identifying existing programs and practices that do not work or are inefficient, gaining understanding of the processes that underlie variations in the effectiveness of programs and practices, and delivering results of education research to consumers in ways that will support the use of research evidence when making education decisions.

These goals are to be pursued by research activities that focus on the effects on specific student outcomes of four conditions: curriculum and instruction, assessment, workforce quality, and the systems and policies under which the first three conditions operate. The specific student outcomes of interest vary by age of the student. They are:

- Infancy and preschool
  - readiness for schooling
  - developmental outcomes for infants and toddlers with disabilities
- Kindergarten through 12th grade
  - reading and writing
  - mathematics and science
  - behaviors and social skills that support learning in school and successful transitions, and additional functional outcomes for students with disabilities
- Post-secondary level
  - enrollment in and completion of programs that prepare students for successful careers and lives
  - acquisition of basic skills by adults

Mechanism for Acting on the Priorities

The principal means by which the Institute can act on its research priorities is through research competitions to which researchers and research organizations can apply for funding. These competitions are organized by topic, e.g., reading and writing, and by center within the Institute, e.g., the National Center for Special Education Research. Annual research competitions have been held since the Institute was established in 2002. The number of topics covered in the competitions has increased each year, and numbered 20 for the 2006 fiscal year.

The Plan for Addressing Priorities

The Institute's plan for addressing its research priorities has three elements, each involving an assessment of current activities to determine if new research activities should be created or existing activities should be modified in order for the Institute's portfolio of activities to cover the priorities.

The first element involves assessing whether the Institute is providing **opportunities** for researchers to obtain funding for work on each of the topics identified in the priorities (where the topics are defined as the intersect of the conditions of influence, outcomes, and age periods listed in the previous section). Is the Institute, for example, providing funding opportunities for research on the effects of curriculum and instruction on outcomes in mathematics and science during the k-12 period? The action associated with this assessment is to create new funding opportunities when gaps in coverage are identified.

The second element involves assessing whether the **mix** of grant applications within each topic is appropriate to the Institute's goals of determining what works, what doesn't, and understanding the processes that underlie variations in program effectiveness. For example, with respect to the effects of curriculum and instruction on mathematics and science outcomes, is there sufficient upstream work to provide a new generation of programs and practices? Is there sufficient downstream work in moving interventions to scale and evaluating their effectiveness? A variety of actions can be taken when the mix of work within a research program is unbalanced. These include clarifying funding announcements, increasing capacity in the research community, and enhancing the incentives to pursue particular categories of research.

The third element involves assessing whether the **yield** of grants within each topic is advancing the Institute's goals, particularly the goal of developing and identifying programs and practices that are effective in enhancing academic achievement. For example, are grants on the effects of curriculum and instruction on mathematics and science outcomes yielding promising findings that can be field-tested? Are field tests of programs and practices at scale yielding positive effects? A variety of actions can be taken when the yield from a research program is insufficient. These include redirecting investments and using different forms of funding such as contracts and cooperative agreements to jumpstart and actively shape the research portfolio.

The Institute, established in November of 2002, is only a little over 3 years old. Its grants typically run for terms of 4 years. At this stage of the Institute's life the emphasis has to be on the first element of the plan, assuring that research opportunities exist for each of the Institute's priorities. The second element, the mix of types of research within research programs, can be addressed for those research topics that have been through at least two cycles of funding. Addressing the third element, yield, is just beginning to be possible.

Do research opportunities fit the priorities?

The Director's research priorities were published in the fall of 2005. Those priorities built on research competitions that were already in place. In that context, it should not be surprising that most of the conditions and outcomes identified in the priorities are presently being covered.

Kindergarten through 12th grade. Each of the priorities is being covered for the k-12 period. The effects on student outcomes of curriculum and instruction, assessment, and workforce quality are covered by the Institute's research grants in the following areas:

- reading and writing
- reading, writing, and language development (special education)
- teacher quality in reading and writing
- quality of teachers and other service providers (special education)
- mathematics and science
- mathematics and science (special education)
- teacher quality in math and science
- cognition and student learning
- individualized education programs and individualized family service plans (special education)
- response to instruction (special education)
- high school reform
- interventions for struggling adolescent and adult readers
- socialization and character development
- serious behavior disorders (special education)
- secondary and transition services (special education)
- autism spectrum disorders (special education)

The effects of systems and policies in kindergarten through 12th grade are covered by the following research programs and national research and development centers:

- education leadership
- education policy, finance, and management
- assessment for accountability (special education)
- national assessment of educational progress secondary analysis
- statewide, longitudinal data systems
- national research and development centers on:
    - rural education
    - data-driven reform
    - school choice, competition, and achievement
    - evaluation, standards, and student testing
    - English language learners
    - performance-based incentives
    - analysis of longitudinal data
    - gifted and talented education

Infancy and preschool. Many, but not all, of the priorities are covered during the infancy and preschool period by existing research programs. Each of the teacher quality and subject matter topics listed in the previous section on k-12 education includes the pre-k period. Additional research programs that focus exclusively on infancy and preschool include:

- early intervention, early childhood special education, and assessment for young children with disabilities (special education)
- national research and development center on early childhood development and education
- preschool curriculum evaluation

A notable gap in coverage is special education research on infants and toddlers with disabilities. Accordingly, the Institute has just launched the early intervention, early childhood special education and assessment for young children with disabilities program, listed above, which covers children from birth through age five. In addition, the Institute's new research program on autism spectrum disorders, listed in the previous section on k-12 education, includes the infancy and preschool period.

Postsecondary. The Institute has two research programs that focus exclusively on postsecondary education:

- national research and development center on postsecondary education and training
- postsecondary education

In addition, a number of the research programs listed in the previous section on k-12 education expressly include coverage of the postsecondary period. Specifically, interventions for struggling adolescent and adult readers, mathematics and science, teacher quality in reading and writing, and teacher quality in mathematics and science, include teaching basic skills to adults through adult and vocational education programs and developmental/bridge programs designed to help under-prepared students acquire the skills to succeed in college. The cognition and student learning program includes research on adult education and tertiary education. And the program in secondary and transition services includes the transition from secondary to postsecondary settings for students with disabilities.

However, some areas of research identified by the priorities have been underrepresented in existing research programs. These include research on the effects of different forms of student aid on enrollment and persistence, the development and evaluation of remedial programs and retention programs for students who enter college underprepared, and the development and validation of assessments that capture the value added by baccalaureate programs in preparing students for careers after graduation. The postsecondary education research program, listed above, has just been launched to address these issues.

Is the mix of research appropriate?

The Institute funds research in seven categories: (1) Identification – identify existing programs, practices, and policies that are differentially associated with student outcomes

and the factors that may mediate or moderate the effects of these programs, practices, and policies; (2) Development – develop programs, practices, and policies that are potentially effective for improving outcomes; (3) Efficacy – establish the efficacy of fully developed programs, practices, or policies that either have evidence of potential efficacy or are widely used but have not been rigorously evaluated; (4) Scale-up – provide evidence on the effectiveness of programs, practices, and policies implemented at scale; (5) Assessment and Tools – develop or validate data and measurement systems and tools; (6) Training – increase the capacity to conduct rigorous and relevant research through pre-doctoral and postdoctoral training of education scientists; and (7) Centers – carry out a range of research and national leadership on topics specified by Congress.

Categories 1 through 4 are a logical and progressive ordering of research activities towards the goal of developing and identifying programs and practices that are effective in enhancing academic achievement. Category 4, scale-up research, is the logical culmination of research activities that identify and develop promising approaches (categories 1 and 2) and establish their efficacy in small-scale field tests (category 3). While there is no formula for determining the appropriate mix of research across these categories, the Institute wants to see a distribution that has the shape of a triangle, with the base consisting of identification and development activities, the second level representing small-scale field tests, and the apex representing evaluations of programs and practices at scale. Table 1 is a tabulation of applications in each of categories 1 through 4 as a percentage of the total number of applications received across categories 1 through 4 since 2002.

Table 1 – Applications by Research Categories			
identification	development	efficacy	scale-up
11%	49%	31%	9%

This distribution has the desirable triangular shape, with identification and development representing 60% of applications, small field tests at 31%, and evaluations of scaled-up programs at 9%.

In addition to examining the mix of grant applications across all funding programs, the Institute has examined the mix within four critical research programs that have existed since 2003. The results from this inventory are presented in Table 2.

Table 2 – Applications by Research Categories by Research Program				
	identification	development	efficacy	scale-up
reading and writing	5%	64%	18%	13%
math and science	10%	57%	26%	7%
teacher quality	1%	68%	26%	5%
policy & management	27%	57%	16%	0%

The distribution of grant applications within research programs suggests two issues the Institute should address in managing these research programs. First, the teacher quality research program is making virtually no use of the identification goal, which typically involves statistical analyses of large databases to model and test associations between

conditions such as teacher training and outcomes such as student test scores. With the growth and availability of state databases that incorporate longitudinal data for students and that include individual data on teachers, this is a resource that should be utilized. The Institute intends to publicize the need for this type of research, to work with its state partners in the statewide longitudinal data systems program, and with its research and development center on analysis of longitudinal data to make such research feasible.

A second issue is the absence of scale-up research within the education policy, management, finance, and leadership area. This likely reflects the lack of a substantial base of rigorous research in this field. However, evidence suggests that the effectiveness of scientifically based programs and practices is strongly influenced by the context of management and leadership in the schools and districts in which such programs are implemented. To enhance research in this area, the Institute has just launched a new research program on education leadership, listed previously in the section on k-12 education. The Institute also plans new initiatives that directly involve school districts as partners in research on policies that are of high relevance to schools districts nationwide.

Is research yielding findings that will enhance academic achievement?

As indicated previously, not enough time has passed since the Institute was established for the vast majority of its grants to have progressed to the point at which findings can be inventoried. An exception is one of the Institute's first grant programs, on cognition and student learning. Grants have been made in this area since 2002, and the initial grants are beginning to produce results. This program has been remarkably successful, as indicated by its having been the cover story of the March 2006 issue of the Association for Psychological Science's Observer (APS Observer - How We Learn).

Using educational software that incorporates design principles from cognitive psychology, one team of researchers funded by the cognition and student learning program has demonstrated four-fold increases in children's learning of science and vocabulary terms that are needed for classroom subjects. Another team of researchers has discovered what may prove to be a basic principle of instruction -- that learning is optimal when instruction on content is repeated at from 10 to 20 percent of the interval over which students are expected to retain the material. For example, mathematics content presented during the first month of a 10-month course should be reviewed in the second month of that course for optimal retention on an end-of-course examination. A third team of researchers has demonstrated that giving a test after reading prose material produces a greater benefit on a final test than many additional readings of the material.

Findings such as these, which flow from theoretically grounded, methodologically rigorous research, are going to transform education if the Institute carries out it priorities well. This document lays out a plan to address areas in which insufficient opportunities exist for researchers to address priorities and in which the current mix of applications indicates gaps in important categories of research. This is an initial plan that has been developed through a complete inventory of the Institute's investments as connected to its priorities. The plan is dynamic and will be adjusted annually based on a continuing examination of the opportunities, mix, and yield of the Institute's grant programs.

[FR Doc. 06–5959 Filed 6–30–06; 8:45 am]
BILLING CODE 4000–01–C