

August 11, 2005

Ms. Elizabeth Payer
Institute of Education Sciences
U.S. Department of Education
555 New Jersey Avenue, NW, Room 602C
Washington, DC 20208

RE: Comment on Proposed Priorities of the Institute

Dear Ms. Payer:

On behalf of the Software & Information Industry Association (SIIA), I write to submit comments on the proposed research priorities of the U.S. Department of Education's Institute of Education Sciences (IES) as included in the June 16, 2005 Federal Register. We appreciate the opportunity to provide our perspective on this important element of the federal education agenda.

SIIA is the principal trade association of the software code and digital content industries, representing more than 700 leading high-tech companies. Many SIIA member companies develop educational software applications, digital curriculum, computer based assessments, and other e-learning and related technology products and services, while some also publish textbooks, assessments, and other print-based instructional materials. All SIIA members depend on the nation's schools for a skilled high-tech workforce, and view technology as critical to meeting the nation's education and workforce goals.

Through their work with students, educators and policy makers across the country, SIIA member companies are in a unique position to help translate knowledge of what works into practice, including through incorporation of research findings into their curricular materials and innovative technology tools. In addition to being consumers of educational evidence who stand as partners to improve teaching and learning, publishers are critical stakeholders in IES' efforts to both conduct and review evaluation research on their products as well as fund development of new curricular, assessment, and related technology products.

SIIA generally supports the proposed IES research priorities as broadly outlined in the Federal Register notice. The following comments are therefore intended to address specific issues within the three general priorities to ensure they are achieved in the most appropriate and productive manner. SIIA's comments largely address IES priority #1 "to develop or identify a substantial number of programs, practices, policies, and approaches that are effective in enhancing academic achievement, and that are widely deployed and well-implemented." But these comments are also appropriate in part for the other priorities.

I. Increase Focus on Technology and e-Learning R&D

SIIA and our member companies believe technology is critical to meeting the nation's education goals as well as the goals and requirements of the No Child Left Behind Act. From distance learning opportunities to enhanced data-driven accountability and decision-making, and from individualized learning models to parental involvement, technology is helping transform the way we teach and learn and increasing educational productivity and student achievement.

Continued federal leadership through the Institute's R&D agenda is important to the nation's progress in effectively integrating technology into instructional and management practices. Much progress has been made, but the future opportunities are even greater as the integration of technology into teaching, learning, and educational management remains at a relatively early stage.

For example, additional basic research is needed to leverage recent cognitive and pedagogical breakthroughs toward development of advanced instructional software. While solutions now exist to provide personalized instruction that adapts to the learner's unique learning needs and pace, instructional software and electronic curriculum can be enhanced to provide improved diagnostics, 21st century skill assessment, real-world or simulated context, and even more adaptive computer-based instruction in all areas from basic reading and math achievement to advanced life-long learning and training. As one element, research is needed into techniques and templates for making technology, software, and digital content more accessible to special student populations – including physically challenged and learning disabled children – in a cost-effective manner.

Additional research is also needed to help further identify effective and transformative implementation models (i.e., policies, leadership, institutional culture, and practices), the conditions and practices under which technology is most effective (i.e., what interventions work best with students of what learning styles and under what conditions), and ultimately how these models can be scaled, replicated and sustained.

Additional and more detailed recommendations on a federal R&D agenda around learning technologies is available as part of SIIA's October 2004 recommendations to the federal Interagency Working Group on Advanced Technologies for Education and Training (see <http://www.siia.net/govt/docs/pub/InteragencyWGcomments.pdf>).

In all cases, partnerships with the private sector are important to ensure the most relevant research is conducted, and that the results of this research find their way to the classroom.

II. Develop in Partnership, but Do Not Compete

IES can continue to play a valuable role in helping develop effective educational programs. In so doing, IES should adhere to these criteria in determining when and how to engage in R&D:

- A. Focus on long-term, basic and pre-competitive research.
- B. In cases where such R&D is applied and is intended to directly develop educational programs, products or services for delivery in the public domain, IES should do so only when the R&D project and the potential products and services:

1. do not compete with that already, or most appropriately, offered by the private sector (both for- and non-profit), as determined through a market review of educational needs, private sector capacity, and the availability of existing products and services; and
 2. are focused on niche, high-risk, and/or prohibitively expensive areas (i.e., thin markets) not likely to be undertaken without government involvement.
- C. First look to partner with the private sector to ensure the best proposals are funded and the results of those efforts are brought to students, educators and educational institutions.
- D. Make grants increasingly available to the private sector for researching and developing proprietary products and services, recognizing of course that such arrangements must provide for a public good. This would include revision of the IES review criteria and process to ensure reviewers recognize the opportunities from public-private, education-industry R&D partnerships.

In light of their work with educators to understand and respond to their needs, educational publishers and other non-governmental education product and service providers are often in the best position to identify research gaps, respond in partnership with practitioners, translate findings to programs and products, and ensure these resulting resources are made available. SIIA members make significant multi-year, multi-million dollar investments to develop electronic learning resources and deliver them to market. The industry brings knowledge of the market and practical experience in product development, delivery, professional development, and support.

Too often, however, new technology models and a strong public commitment to improving education are together leading government entities – including the federal government – to increase the direct public role in developing and delivering digital curriculum, e-learning platforms, and other computer-based education applications. As a result, SIIA is increasingly concerned about unfair competition posed by government agencies. Ultimately, such efforts provide a significant disincentive for private involvement, thus leading to fewer choices, less innovation, and a remaining public supply that increasingly fails to meet evolving education needs. It is rare that public investment has led to a widely adopted educational program without the direct partnership with the private sector necessary to develop, market, distribute, support, and sustain it.

Active R&D partnership with the private sector will therefore ensure both that federal efforts do not compete with that best undertaken by the private sector, and that R&D findings are most effectively and efficiently translated to the classroom market through transfer and integration into private sector offerings. With development and refinement of educational software very expensive relative to the return for most products in the currently fragmented and relatively immature school technology market, federal support of the private sector can bring a tremendous relative return to education. IES is therefore further urged to amend its review criteria and process to encourage such partnerships as is common in R&D funding from other federal agencies, as IES reviewers too often do not support proposals involving collaboration between researches and private sector partners.

III. Broadly Define Research Related to Academic Achievement to Include Complementary and Intermediary Goals

While increased student achievement is the primary and ultimate goal of education (and of educational software), measurements of success that are too narrow and direct may ignore both complementary and intermediary goals.

For technology and e-learning, complementary goals include cost savings and teacher satisfaction, while intermediary goals include teacher skills, student access to learning opportunities, student engagement, and improved system of instruction such as through data-informed decision-making and academic progress monitoring. It is also important to recognize technology as a cost efficient tool to facilitate delivery of other best educational practices. In addition, technology can both help deliver a richer set of skills (e.g. communication, technology literacy, problem solving, etc.), as well as allow for measurement of those skills in a way otherwise not possible or practical.

Recognizing this diversity requires multiple, robust rubrics for measuring education as well as technology's educational benefits and outcomes. The IES evaluation research agenda should employ outcome measures appropriate to these multiple education (and education technology) purposes, goals, and functions.

IV. Ensure Fair and Appropriate Evaluation Process

In light of its leadership position and control of significant resources as part of the U.S. Department of Education, IES has significant opportunity to influence which programs, practices, and policies are implemented in our nation's schools. The No Child Left Behind Act's evaluation, "scientifically based research" provisions, and related grant authority increase the degree to which state and local education decision makers may be influenced by IES determination of an educational intervention's effectiveness. With this opportunity comes responsibility to ensure a fair and appropriate process that is open, objective, and reflective of the diversity of educational needs and interventions.

To ensure a fair and appropriate evaluation process, including through the What Works Clearinghouse, SIIA urges incorporation of the following factors into IES evaluation research priorities:

- A. Limit Evaluation Activities – In general, with regard to proprietary educational interventions (i.e., products, programs, and services), IES should limit its activities to:
 - 1. supporting the efforts of the intervention author in evaluating their own intervention or participating voluntarily in IES sponsored third-party research; and
 - 2. evaluating existing efficacy research on such interventions.
- B. Omission Bias and Need for Dynamic Review Process – Not being included in any list of questions, topics and specific interventions evaluated by IES can have a negative, albeit perhaps unintended, impact. Of greatest concern is any static IES evaluation process that fails to account in a timely manner for either new interventions or new research on existing interventions. This concern is especially critical for technology in light of the fast pace of

innovation. This discrimination would result in marketplace bias against those omitted interventions, and possibility of effective interventions being ignored by educators. To guard against such unintended consequences, a dynamic evaluation process is required whereby new evaluations are conducted as new (or newly revised) interventions and related information becomes available. Funding should not be allocated to evaluation in a given area without a long-term commitment for follow-up research. Both short-term and long-term sufficiency of resources is critical.

- C. Involvement of Intervention Sponsor in Evaluation Cycle – It is critical that the sponsor of an intervention be involved throughout the evaluation cycle. This includes initial notification, opportunity to respond or clarify before findings are finalized and made public, and opportunity for appeal. We recommend that objections be resolved as early on and in as non-public a manner as possible to avoid often irrevocable harm should incomplete or inaccurate findings be prematurely released.
- D. Fidelity of Implementation – For most educational interventions, but perhaps especially so for technology, the IES evaluation research agenda must examine not just “if” but “how and under what conditions” when examining educational effectiveness. Publishers and developers recognize that their products and services can only be as effective as their implementation. For technology, success hinges on such factors as appropriate use, sufficient access, teacher training, and technical support. Experimental designs will not necessarily control for these factors, as there may be situations where the treatment is being improperly implemented. Ultimately, a given classroom intervention does not constitute the theoretical or model intervention unless accompanied by the necessary precondition of proper implementation. IES should therefore include measures of fidelity of implementation in evaluation studies and in reviewing third-party research, while also including such implementation factors as a caveat to research results to ensure education decision makers do not implement (nor dismiss) an intervention without recognition of these factors.

V. Make Federal Grants Available to the Private Sector for Evaluation of Proprietary Products and Services

The costs of random control trials and other scientifically-based research can be prohibitive for vendors, but consumers need this information to make informed choices. Yet, federal grants are biased against proprietary products and normally target non-profit and academic institutions for the study of generic or non-proprietary education technologies. Federal R&D and evaluation grants should therefore be also made available to for-profit educational providers to ensure all avenues are pursued in meeting education’s needs.

Private, including for-profit, publishers and developers often serve as the primary providers of many educational programs and interventions to our nation’s educational institutions. As noted above, they are also often in the best position to identify research gaps, respond in partnership with practitioners, translate findings to programs and products, and ensure these resulting resources are made available. Active support for the private sector’s R&D efforts will help ensure both that those resulting products and services are of the highest research-based quality as well as that evaluation research on their effectiveness is available to education decision makers.

This agenda should also include incentives and encouragement of educational institutions and leaders to participate in education technology studies, including those of proprietary products, which are ultimately important to meet their needs.

Thank you for considering SIIA's comments regarding the Institute for Education Science's research priorities. SIIA and our member companies look forward to working with you on these and related issues to ensure the U.S. Department of Education's research agenda is appropriately targeted and of the highest quality. If we can be of further assistance, please contact me at (202) 789-4444 or marks@siia.net.

Sincerely,

A handwritten signature in dark ink, reading "Mark Schneiderman". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Mark Schneiderman
Director of Education Policy

