

June 8, 1998

President William J. Clinton  
The White House  
1600 Pennsylvania Avenue  
Washington, D.C. 20500

Dear President Clinton:

The quantity, quality, and organization of educational research in this country need renewed attention. Results from TIMSS, the Third International Mathematics and Science Study, indicate how urgent it is for us to understand and improve America's educational system. TIMSS also illustrates how compelling data -- not only about achievement levels but also about contextual, curricular, and classroom factors -- can generate honest and constructive dialogue. The members of PCAST applaud your role leading such discussions publicly as well as privately.

Our concern is to ensure a continuing supply of rigorous, comprehensive, and high-quality research that, like TIMSS, can command attention and inform policy. We therefore appreciate the \$75 million Education Research Initiative you proposed in your FY 1999 budget submission to Congress as a first step. These funds explicitly begin to address PCAST's call for much greater investment in this area -- the highest priority recommendation in the March 1997 report on *The Use of Technology to Strengthen K-12 Education in the United States* prepared for you by a PCAST Panel chaired by David Shaw.

That PCAST document sets ambitious targets for the size, scope, and quality of the research initiative needed, including estimated annual expenditures growing to \$1.5 billion. We urge that funds secured this year with reference to the PCAST report work towards attaining these goals. The \$75 million should function as an initial investment in building the methodological, human, and institutional capacity that we urgently need to address questions such as: What happens as learning materials become more technology intensive? How can the large expenditures on inservice teacher training be more effective and efficient? What are the classroom implications of advances in cognitive science? What effects do standards have? Only the Federal government can put in place the infrastructure for adequately investigating such vital research topics. Here are the three most important tasks in building that infrastructure:

**Methodological Development:** New technology, statistical techniques, and behavioral science methodologies provide previously unimaginable opportunities to collect, organize, compare, and analyze educational data. This, in turn, will make it possible to compile data sets which are sufficiently coordinated and mutually compatible to be of great

enduring value to other researchers and to decision makers. It will become possible to construct educational research protocols analogous to those in the field of health research, where understanding grows systematically from early-stage research aimed at formulating hypotheses through controlled empirical studies that test these hypotheses and the models derived from them. The Educational Research Initiative should therefore support investigating and implementing such developments.

**Human Development:** The much-needed capacity to plan and carry out this kind of work in education can only grow by training, involving, and supporting both researchers and practitioners from many different fields and settings. Many with graduate degrees in science, mathematics, and engineering are especially eager to find ways of enhancing their contributions to educational improvement. Valuable new questions and approaches will be generated by drawing to the task experimentalists, content experts, and behavioral scientists, for example, along with classroom teachers. As in other countries, professional teacher/researchers who help frame questions, collect data, and implement findings in schools also help establish the expectation that new evidence will lead to improved practice. The Educational Research Initiative should therefore make such work attractive as a challenging and rewarding career option for those who can bring multidisciplinary talent and expertise.

**Institutional Development:** No single existing organization can plan or carry out such crosscutting work in isolation. While the Educational Research Initiative appears in your budget as allocating \$50 million to the Department of Education and \$25 million to the National Science Foundation, we urge these and other agencies to participate more collaboratively in going beyond their traditional practices. We especially wish to involve two other strong institutions: the National Institutes of Health to contribute expertise in cognitive sciences and in managing large-scale, randomized trials; and the Department of Defense to contribute expertise with managing both school systems (e.g., DODEA) and cutting-edge programmatic research (e.g., DARPA). National Science and Technology Council mechanisms exist to facilitate precisely this kind of interagency cooperation.

How to administer the initiative so that it can grow and succeed is a question for these agencies to explore together. PCAST strongly believes that a distinct new entity may eventually be necessary to manage and fund the research – ideally through an organization that can take a long-term, science-based, non-political, and broadly national view of the rigorous study of education. We recommend that the FY 1999 spending constitute an initial investment in building the methodological, human, and institutional resources that will move us toward a \$1.5 billion annual program of peer reviewed, politically independent, reliable, and cumulative research in education that draws on a broad base of expertise.

Thank you very much for your attention to this important matter. PCAST looks forward to discussing progress reports from the Administration at each of our upcoming meetings so that we can be helpful in a continuing way. We are deeply grateful for your leadership on this issue that is so vital to the future of our nation.

Sincerely yours,

John A. Young     David A. Hamburg  
PCAST Co-Chair   Education Panel Chair

cc: Vice President Al Gore