

A Report Card on the State of Research in the Field of Gifted Education

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The perspective I bring to this informal assessment of research in gifted education evolved since my departure from academe in 2000. Since then, my efforts have been focused on education policy, not only with regard to giftedness and talent, but also in the realm of general teacher quality. This policy perspective crystallized for me during a session at the 2003 American Psychological Association convention. Grover "Russ" Whitehurst, Director of the U.S. Department of Education Institute for Education Sciences (formerly called OERI), expressed frustration with the paucity of education research focused explicitly on pressing public policy issues. He urged audience members to focus their efforts on addressing research questions that are important to the general public or policy makers, particularly in the realm of student achievement.

In the aftermath of this session, I asked myself the following question: What topics relevant to our field are of concern to the general public, legislators, and policy makers? I'd like to propose some responses to this question:

- ensuring that sufficient numbers of high-quality scientists, doctors, and engineers are prepared to meet our society's future needs;
- evaluating whether our public schools are serving all members of the community well, including gifted and talented students;
- determining the value added of gifted education for all children; and
- determining the value added of educating a gifted student to full capacity by way of special programming.

Ensuring That Sufficient Numbers of High-Quality Scientists, Doctors, and Engineers Are Prepared to Meet Our Society's Future Needs

This question is of great importance to our country and it is certainly one to which our field could con-

tribute. Much of our science talent is imported from countries where the education of scientists and mathematicians is far more rigorous and where tracking during secondary school is more common. As visas for visiting scientists and science students are limited by the war on terrorism and countries in Asia and Europe hope to stem national brain drains by establishing their own research institutes and conservatories, the need for homegrown talent grows increasingly evident.

In response to future shortages of science talent, the U.S. is starting to pay attention to improving science and mathematics education. Until recently, federal funding has been channeled into science literacy (using science to make wise decisions in the community and at home) rather than in science career development issues.

We need more research on science, mathematics, and engineering talent development. What variables are the best predictors of ability in specific domains? What are the most common obstacles to talent development? What are the most powerful enhancers?

We need longitudinal studies to help us address these questions of prediction and to tell us whether the talent development we provide has impact over time. However, if we start our predictions with performance at age 4, the validity is going to be terrible. Instead, we can take another research approach—working backwards from eminence. What if you started with scientists in elite labs? According to Harriet Zuckerman, most Nobel laureates were trained by earlier Nobel laureates. What if we were to study the cohort of scientists in current Nobel laureates' labs to unravel distinguishing characteristics of those who are making significant contributions, and then move backward through each stage of the training process. If we could determine the variables that differentiated those who developed innovative new ideas or theories from those whose brilliance was not fulfilled, we would know a lot more about the kinds of skills one needs to develop to be successful in elite science. We

could learn a lot from this approach because the predictive validity is going to be much more powerful.

Evaluating Whether Our Public Schools Are Serving All Members of the Community Well

Gifted children are part of the community. From that perspective, we can conduct research that explores the role of gifted children within the community of public schools. What influence does a cohort of high-achieving, academically motivated gifted students have on the rest of the school? If the effect is positive, how big must the critical mass of high achievers be—10 or 100? If a majority of high-achieving students are White and Asian American in a school that is largely attended by students of color, how well do the high achievers serve as role models and leaders for the rest of the school? The answers to these questions are important and have many implications for school reform.

The standards movement is here to stay, and I believe that communities would be receptive to knowing how many students in their district exceed state and local standards. In the name of exploring whether public schools are serving all members of our community well, we could report on whether services are being provided to those students so they can continue to excel.

Determining the Value Added of Gifted Education for All Children

Do all children deserve a gifted education? What if we randomly assigned students to gifted education? If gifted education is defined as an advanced curriculum, taught at a faster and deeper pace, we could pursue a proposal once offered by Uri Treisman: Instead of offering different tracks of algebra, what if you offered one track

of high-level algebra and all the students who could not keep up would receive additional services to support their participation? However, the same arrangement would need to be made in all subject areas and some students would end up in school for 14 hours a day. Nevertheless, the notion is provocative.

Investing additional time in one's studies in order to be successful implies valuing motivation. Should students who are highly able but not motivated continue in special classes when there are highly motivated students with slightly lower test scores who want to benefit from the more rigorous and enriched curriculum? Would a gifted education improve their performance? These are all researchable questions that would add in a constructive way to public debate.

Determining the Value Added of Educating a Gifted Student to Full Capacity by Way of Special Programming

What if we worked with some economists to evaluate the payback one gets from investing in high-quality education for gifted students? Every child can contribute to society in some way. Can gifted children contribute significantly more by way of ideas, products, or performances? Such an effort would allow us to work collaboratively with colleagues holding discipline-based methodological expertise and approaches, leading to creative approaches for resolving this and other issues.

Some final thoughts. All researchers need to understand the legislative system and get a clear sense of the current research agenda in the public arena. I fear that we are too isolated from mainstream discussion of educational problems. We need to get outside of our field and think about what the public needs and wants and play a bigger role in public policy discussions. We have the tools and the knowledge to contribute immeasurably.